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# PROPOSED WIND FARM, SARICHIOI, DOBROGEA REGION AND VUTCANI, MOLDOVA REGION, ROMANIA

Environmental and Social Due Diligence Assessment  
EDP Renewables, Romania

24/07/2012

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Environmental and Social Due Diligence Assessment

24/07/2012

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# Executive Summary

## Background

WSP Environmental UK Ltd (WSPE) has been commissioned by EDP Renewables, Romania (referred to as EDPR throughout this report) to undertake a compliance assessment/ gap analysis of the Environmental Impact Assessment Reports and public consultation activities which have been undertaken for the proposed development of two wind farms at Sarichioi (Dobrogea region) and Vutcani (Moldova region) in Romania (hereafter known as “the Projects”). This review has been undertaken in advance of a potential investment in the developments from the European Bank for Reconstruction and Development (EBRD).

A verification site visit was carried out during May 2012 as part of the compliance assessment/gap analysis and comprised i) review of the Environmental Impact Assessment Reports for the developments and key background information, ii) a visit to the Sarichioi and Vutcani sites and iii) consultation meetings with national and local statutory bodies and stakeholder groups.

## Site Locations and Existing Conditions

The Sarichioi site is located in the County of Tulcea in the Dobrogea region in the south-east of Romania, approximately 25km west of the Danube Delta. The Vutcani site is located in the Vaslui County in the Moldova region in the north-east of Romania. The location of the sites is shown on Figure 1 and the local context of each site is shown on Figures 2 and 3.

Both sites are located in rural areas and are more than 500m from the closest residential properties.

The Project sites are similar in nature and consist of generally undulating land on hillsides, on areas of former agricultural land (including arable and pasture). Some of the land has not been cultivated. There are very few trees and no buildings (other than substations belonging to the facilities) on the sites, with no wetlands, significant watercourses or other notable features.

## Development Proposals

The proposed wind farm at Sarichioi will contain 11 wind turbines, providing a total installed capacity of 33MW. The wind farm at Vutcani will comprise 12 wind turbines, providing a total installed capacity of 24MW. Both wind farms are operational, having been completed and commissioned in March (Sarichioi) and May (Vutcani) 2012 respectively. Underground and overhead powerlines have been constructed to link the turbines within the wind farms and to link each wind farm to the national electricity grid.

## Requirement for Development

The development of sustainable renewable energy sources to replace traditional fossil fuel based technologies is a priority at both at National and European policy levels. Energy generation from wind farms, in appropriate locations, is recognised as a sustainable alternative to fossil fuel power stations.

The energy generated by the Sarichioi and Vutcani wind farm Projects is delivered to the national grid and helps to meet national energy demand through the use of a renewable energy source.

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## Environmental, Health and Safety and Social Compliance

### *Environmental Considerations*

The Sarichioi and Vutcani sites were originally owned by Wind Experts, which undertook the technical feasibility and acquired the permits required under Romanian National Legislation for the development of the Projects. EDPR purchased the sites with full permission for development as wind farms.

Due to its proximity to ecological designated areas (specifically the Danube Delta Special Protected Area, SPA, and Site of Community Importance, SCI) the Sarichioi site was identified as requiring an Environmental Impact Assessment (EIA) in accordance with Romanian and EU legislation. An EIA was completed for this site as part of the environmental agreement application process in accordance with Governmental Emergency Ordinance 195/2005, approved by Law 265/2006 Article 11. Further details relating to ecological designated areas are provided below.

A screening opinion was sought in relation to the Vutcani site and this confirmed that there were no significant environmental issues associated with the development and therefore, an EIA was not required. However, for robustness, an EIA was completed in accordance with Romanian and EU legislation on behalf of Wind Experts in relation to the construction works associated with the development. The findings of the EIAs are presented in two separate reports dated 2008 (Sarichioi) and 2009 (Vutcani).

The purpose of the EIA Reports was to identify any potential environmental impacts associated with the developments, assess the significance of the impacts and, where appropriate, identify measures to avoid or reduce these impacts.

The developments are classified as Category A projects under EBRD standards. Category A projects are defined as those which could result in potentially significant and diverse future environmental and/or social impacts which, at the time of categorisation, cannot readily be identified or assessed and which require a formalised and participatory assessment.

The Compliance Assessment /Gap Analysis has identified that the projects have been subject to and have satisfied Romanian permitting requirements, and an EIA has been undertaken of each project in accordance with National requirements, in line with the EU EIA Directive.

Additional information on environmental and social impacts is considered to be required to fully comply with the EBRD requirements. This information has been provided in a Supplementary Information Report, which includes the results of further assessment of the ecological, landscape and visual effects of the Projects and an assessment of the cumulative environmental impacts of the two wind farms in relation to other wind farms in their respective areas.

A summary of the key environmental, health and safety and community considerations is presented below. A Construction Environmental Management Plan (CEMP) was implemented for each Project to manage environmental effects during the construction works and environmental monitoring visits were undertaken during construction, approximately every two weeks. The Projects are operational therefore particular consideration has been given to operational effects.

The EIA Reports and the Supplementary Information Report prepared for the Sarichioi and Vutcani wind farms have assessed the potential environmental issues associated with the developments, and where applicable, recommendations have been provided for appropriate mitigation measures.

An ecological assessment was undertaken as part of the EIA Reports prepared for the sites and this information has been supplemented with further ecological assessment and monitoring data for the Sarichioi, which is presented in a Supplementary Information Report.

The assessment confirmed that both sites consist of mainly grassland and arable land with some areas of woodland and scrub, particularly in the northern part of the Vutcani site. The wind farms are located on areas of high ground within a surrounding open landscape. The landscape surrounding the Vutcani site includes wooded valleys, with that of the Sarichioi site comprising a flat, open plain landscape. There are no protected floral species or habitats on

either site.

There are five protected areas within approximately 10 km of the Sarichioi wind farm (see Figure 4), two relating specifically to birds, designated under the Birds Directive, and the other three designated under the terms of the Habitats Directive.

The Danube Delta Special Protection Area (SPA) and Site of Community Importance (SCI), located approximately 4km east of the Sarichioi wind farm, is a major flyway for bird migration during spring and autumn migration periods for species such as Osprey, Little tern, Pygmy cormorant, Ferruginous duck, White tailed eagle and Glossy ibis. The area also includes habitats which support species such as Otter, Steppe polecat and European mink. Given the proximity of the Sarichioi wind farm from the Danube Delta Biosphere Reserve, a permit was required from the Danube Delta Biosphere Reserve Authority (ABRDD).

The Sarichioi wind farm is located outside areas of international ecological importance but is partly on the boundary of the Dealurile Agighiolului SCI and the Deniz Tepe SPA. One of the turbines is located within the boundary of this SCI. However it is located within an area of arable land and consequently, it was considered by the Environmental Protection Agency (EPA) that it would not impact upon the integrity of the SCI.

Approximately 600m of overhead transmission line and three pylons associated with the Sarichioi site are located on agricultural land within the Deniz Tepe SPA. Following extensive consultations between EDPR and the Environmental Protection Agency (EPA), the Societatea Ornitologica Romania (SOR) and EcoPontica special provisions relating to monitoring of bird species and mitigation measures have been implemented to deter birds from the wind farm, and in particular the transmission lines within the Deniz Tepe SPA.

There are three protected areas within 20 km of the Vutcani wind farm (see Figure 5), one relating specifically to birds, designated under the Birds Directive, and the other two designated under the terms of the Habitats Directive.

The closest designated ecological site to the Vutcani site is the Pădurea Dobrina – Huși SCI, approximately 5km to the north, which supports populations of the grey wolf. Other designated sites in the vicinity comprise Horga – Zorleni SPA and Râul Prut SCI, both of which are located approximately 20km south and east of the Vutcani site respectively. The Vutcani wind farm is not located within the boundary of any protected areas, including Natura 2000 sites such as SPAs, SCIs or International Bird Areas (IBAs).

There are no significant impacts on habitats from the Projects due to the lack of semi-natural habitats within the sites. With the exception of avifauna, the lack of semi-natural habitats reduces the faunal species the sites are likely to support, and, therefore no significant impacts on faunal species associated with the Projects are predicted.

The key potential ecological impacts associated with the Projects relate to:

- Habitat loss and disturbance;
- Displacement/barrier effects; and
- Direct mortality from collision and electrocution.

Habitat loss and disturbance are not considered to be significant due to the habitat present at the sites comprising arable land and the absence of species sensitive to disturbance being absent from the sites.

Bird monitoring was undertaken at the Sarichioi site during construction (between April and September, and September to December 2011). A low number of species were recorded, with the most numerous species monitored being starlings and rooks. Migrating flocks of European bee-eater, swallows and house martin were observed during further monitoring. Birds of prey were a constant presence but were observed in low numbers. No dead birds were recorded on the site during the monitoring. Further monitoring has been ongoing at the Sarichioi site since March 2012 when the wind farm became operational; this is in accordance with the EcoPontica Permit, the requirements of the permit issued by ABRDD and Environmental Authorisation issued by Tulcea EPA for the site. This monitoring utilises observation methods undertaken by specialised personnel of SC Eco Green Consulting SRL and the monitoring results will be submitted to the local Environmental Protection Agency, SOC and Danube Delta Biosphere Reserve Association on an annual basis. In addition, video cameras have been



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installed in the meteorological tower and substation and these are controlled from a computer installed in the substation building.

The Vutcani site is located outside of flight paths of migratory birds and no significant impacts are predicted on avifauna with regards to habitat loss or barrier effects due to the amount of similar alternative habitat in the area, the local topography and the spacing of the turbines and the distance of the site from significant flyways and designated sites. Ecological monitoring will be undertaken at this site for 12 months in accordance with the Environmental Authorisation issued by Vaslui EPA.

There is the potential for impacts on avifauna from operation of the Projects due to mortality caused by collision for migrating and flocking birds. The significance of this impact will be reduced by the presence on each site of an Independent Ornithological Expert (IOE), commissioned by EDPR, who will provide expert advice on ornithological aspects of the projects and develop and implement a process for ordering shutdown in certain circumstances. The IOE will be responsible for undertaking surveys and monitoring bird movements in the immediate area and for the development of criteria/thresholds for the implementation of mitigation measures as required, such as reducing the speed of the turbines or, if required, for the turbines to be temporarily turned off during bird migration periods. Observations relating to bats will be undertaken in addition to bird surveys and monitoring.

A Collision Risk Assessment will be completed based on the data collected during the monitoring and the results will be used to define further site-specific mitigation measures which will be included within the Environmental and Social Action Plans for each Project. The required mitigation will be informed by detailed monitoring in accordance with the Environmental Authorisations issued by the EPA for both sites, and for the Sarichioi site the permits issued by EcoPontica and the ARBDD.

The EIA Reports include a discussion of impacts on noise levels, air quality, ground and surface water, soils and geology and landscape and visual impacts during construction and operation of the Projects.

No potential noise impacts from operation of the Projects are anticipated given the distance of the sites from the nearest residential properties (more than 500m). Noise monitoring at the nearest sensitive receptors is recommended in order to demonstrate compliance with the IFC General EHS Guidelines.

No potential impacts on air quality, ground and surface water and soils and geology are anticipated from operation of the Projects.

The assessment of potential landscape and visual impacts in the EIA Reports has been supplemented with a more detailed assessment which is presented in the Supplementary Information Report. The findings of this assessment were that there would be no significant adverse effects on the landscape character beyond the local context and limited visual impacts on nearby residential receptors, with views of the Projects afforded from local villages more than 500m away.

There are no known cultural heritage features on either site or in the immediate vicinity of each site. An archaeological surveillance contract was put in place during the construction works in the event that archaeological remains were found during excavations for the foundations of the turbines and underground cabling. However no remains were found during the construction works and no archaeological work was required.

Waste materials generated during operation will be minimal (comprising waste oil from maintenance and domestic waste from security and other workers) and will be transported by a certified waste carrier and disposed of to an appropriately licensed waste facility located off-site.

Shadow flicker refers to the effect of the blades of the turbines rotating with high frequency and can cause disturbance to humans. The distance of the wind farms from the nearest residential properties is more than 500m which is recognised to be the maximum area over which shadow flicker is experienced. Therefore, it is considered that shadow flicker will not be a significant issue for these sites.

No significant environmental effects are anticipated during decommissioning of the wind farms. All equipment will be dismantled and the land will be restored to the original conditions. Where

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practicable components will be reused or recycled.

#### Potential Cumulative Environmental Effects

A cumulative impact assessment has been undertaken which considers those wind farm proposals in the vicinity of the Sarichioi and Vutcani sites which are within the zone of influence of the two Projects.

The zone of influence of the Sarichioi and Vutcani Projects has been identified through consideration of the likely spatial extent of the potential environmental effects arising from these wind farm developments in respect of ecological effects (specifically avifauna and bats), landscape and visual impacts. Although the zone of influence varies between environmental topics, given the nature of the surrounding area (including the habitat types, topography, land uses and the location of Natura 2000 sites and known flyways used by birds) the anticipated zone of influence associated with the potential effects has been identified as being approximately 10 – 15km from each site.

The nearest known locations of other operational wind farms in the local area (within approximately 15km) comprise the following, the distances of the wind farm projects from Sarichioi commune are indicative:

##### Sarichioi:

- An operational wind farm at Agighiol approximately adjacent to the north east of the Sarichioi wind farm with a capacity of 34MW;
- An operational wind farm at Valea Nucarilor approximately 13 km north east from Sarichioi commune with a capacity of 6.95MW. A review of available information indicates that applications for other wind farms in this area have been made (including one facility of 399MW capacity), these facilities are understood to have a connection contract and/or a technical connection permit but not to be operational at this time; and
- An operational wind farm at Babadag approximately 12km south east of Sarichioi commune with a capacity of 8.4MW.

Applications for permits for other wind farms in the vicinity (such as at Mihail Kogalniceanu and Mihai Bravu) have been submitted but are at varying stages of the permitting process and are understood not to be operational at this time. The indicative locations of these sites are shown on Figure 6.

The first two projects identified above are located closer to the Danube Delta SCI and SPA than the Sarichioi site. The wind farm at Babadag is also located near the Danube Delta SCI and SPA which covers a substantial area and includes Babadag Lake. Based on the anticipated zone of influence for the Sarichioi wind farm (approximately 10 – 15km) the three wind farms listed above have been considered in respect of the potential for cumulative environmental impacts associated with the Sarichioi wind farm. Should other wind farms be constructed in the area consideration may need to be given to the potential for cumulative ecological impacts on nearby protected areas.

##### Vutcani:

- An operational wind farm at Muntenii de Jos approximately 16 km north of Vutcani commune with a capacity of 0.23MW.

Applications for permits for other wind farms in the vicinity have been submitted but are at varying stages of the permitting process and are understood not to be operational at this time. The indicative locations of these sites are shown on Figure 7. These include sites nearby at Albesti and Rosiesti which have connection contracts but where wind farms have not been constructed to date.

The Muntenii de Jos wind farm is located approximately 8km east of the Padurea Dobrina-Husi SCI. Given that this SCI is designated for its habitats rather than bird species and no direct impact on this SCI is anticipated as a result of the Muntenii de Jos wind farm and the Vutcani wind farm no cumulative effects on this designated site are anticipated.

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Should other wind farms be constructed in the area consideration may need to be given to the potential for cumulative ecological impacts on nearby protected areas.

The key cumulative effects that can be associated with wind farm developments are summarised below, these are considered further in the Supplementary Information Report:

- Ecological receptors – potential for mortality due to direct collisions with or pressure changes due to turbines, disruption to migratory routes and flight pathways and barrier effects reducing available flying space; and
- Landscape and visual impacts – significant change in the landscape character of the area and views of the Projects from nearby residential areas

#### *Health and Safety Considerations*

A review of the health and safety provisions in respect of construction and commissioning of the wind farms indicates that EBRD Performance Requirements 2 and 4 and applicable requirements of Romanian health and safety legislation have been met in respect of the construction works. Details of the health and safety and operational provisions and procedures will be set at the time the client will be tendering for the operational contract and will subsequently be made available to the contractors and subcontractors.

#### *Social and Community Considerations*

The land required for the Sarichioi and Vutcani wind farms has been purchased by EDPR and the areas outside the operational footprint of the turbines and supporting infrastructure will be leased to local residents for agricultural use during operation of the wind farms. No compulsory purchase was required for the developments and there will be no loss of livelihood or attendant economic losses associated with the Projects.

In addition, the land was formerly (and will partially continue to be) used for agricultural activities and no residential properties were located on the areas to be occupied by either wind farm. Therefore, no involuntary resettlement was associated with either land purchase.

There will also be no detrimental impacts on local shops, businesses or facilities as a result of the Projects.

#### *Public Consultation*

In the early stages of the Projects consultation was held with the relevant offices of the EPA and, in the case of Sarichioi, EcoPontica (custodians of Natura 2000 sites). The Sarichioi wind farm was initially proposed to comprise 20 turbines. However, this was reduced to 11 turbines following this consultation in order to minimise potential impacts on the Natura 2000 designated site in the area. In addition, further to the consultation, an Ecological Monitoring Plan has been developed for the site in agreement with the EPA, the ABRDD and EcoPontica, which includes video monitoring and site surveys which are being undertaken by an IOE.

In accordance with the requirements of Romanian legislation public announcements were made in the media regarding the application for the Environmental Agreement, the commencement of the EIA studies and regarding the issue of the Environmental Agreement.

A public meeting was also held in Sarichioi (May 2011) where information was provided on the Projects, including the equipment to be installed, construction period and environmental issues associated with the developments. During the public meeting attendees raised questions regarding the exploitation of the land plots surrounding the wind farm sites and it was explained that no changes will occur as a result of the wind farm construction and operation.

Under the provisions of Romanian national law a public meeting was not required for the Vutcani site. However, consultation meetings were held with Vaslui County Council and representatives of Vutcani City Hall and the Environmental Protection Agency as part of the site permitting procedure.

No complaints were received during construction of either of the Projects.

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Consultation meetings were also held with a number of regulatory bodies in May 2011 as part of this compliance assessment, the organisations consulted being the Environmental Protection Agency (Tulcea and Vaslui), Sarichioi and Vutcani City Halls, Tulcea and Vaslui County Councils and the Societatea Ornitologica Romania (SOR).

A Stakeholder Engagement Plan (SEP) has been produced by EDPR for each of the Sarichioi and Vutcani wind farms which provides information on the approach for on-going public consultation during operation of the Projects to inform stakeholders about the Projects' activities, performance, development and investment plans and their implementation.

## **Conclusions and Recommendations**

The conclusions of this compliance assessment/gap analysis are as follows:

- In accordance with Romanian National Law, a screening assessment was undertaken for both sites. It was confirmed by the screening that an EIA was required for the Sarichioi site but not for the Vutcani site. However, for completeness, EIAs were undertaken for both sites in accordance with national legislation. Both EIAs were undertaken in accordance with EU EIA requirements.
- Environmental agreements and other permits have been issued for each site as required and the Projects have been constructed in accordance with the permit requirements.
- Additional information on environmental and social impacts necessary to meet EBRD Performance Requirements is provided in a Supplementary Information Report. This includes an assessment of the potential cumulative environmental impacts associated with the Projects together with other wind farms in the local area,
- The Supplementary Information Report also includes some additional recommendations for monitoring and mitigation measures which have been confirmed by EDP. These include appointment of an Independent Ornithological Expert with responsibility for ongoing bird monitoring and surveys and for the implementation of appropriate mitigation measures including a shutdown procedure; development and implementation of a waste management plan for operation; and development and implementation of a Stakeholder Engagement Plan (including a grievance mechanism).
- Environmental and Social Action Plans have been prepared for the Projects and will be implemented to ensure that their environmental and social effects are minimised during operation and decommissioning.
- Based on a review of documentation and verification site visits it is understood that the health and safety provisions in respect of construction and commissioning of the wind farms meet the requirements of EBRD Performance Requirements 2 and 4, and applicable Romanian health and safety legislation in respect of the operation of the wind farms. A health and safety plan will be implemented which will cover all relevant aspects of operation to ensure compliance with health and safety legislation and good international industry practice relating to occupational and community health and safety.
- Consultation with the local community will be undertaken as part of the on-going operation of the Projects. The programme and format of this consultation is described in the Stakeholder Engagement Plans that have been produced for the Projects.

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# 1 Introduction

## 1.1 Background and Context

- 1.1.1 WSP Environmental (WSPE) has been commissioned by EDP Renewables (EDPR), Romania to undertake a compliance assessment/ gap analysis of the Environmental Impact Assessment (EIA) Reports and the stakeholder engagement activities which have been undertaken for the proposed development of two wind farms at Sarichioi (Dobrogea region, Tulcea County) and Vutcani (Moldova region, Vaslui County) in Romania (hereafter known as “the Projects”). The Project locations are shown on Figures 1, and 2 and 3 in Appendix A.
- 1.1.2 The Projects have been subject to Romanian permitting requirements. Because of its location in relation to the Danube Delta an EIA was required for the Sarichioi site, in accordance with National requirements, which comply with the EU EIA Directive. However, for robustness, an EIA was also undertaken on a voluntary basis for the Vutcani site specifically in relation to potential construction phase environmental impacts. The Projects are both operational, having been completed in March (Sarichioi) and May (Vutcani) 2012 respectively.
- 1.1.3 This review has been conducted in advance of a potential investment in the developments from the European Bank of Reconstruction and Development (EBRD). The Projects have been assessed against EBRD’s environmental and social policy requirements. The assessment involved a review of the existing EIA Reports, permits, monitoring data and other relevant information prepared for the Projects, consultation with national and local statutory bodies and stakeholder groups and visits to the Sarichioi and Vutcani sites.
- 1.1.4 The purpose of this compliance assessment/gap analysis report is to present the results of an independent environmental and social due diligence gap analysis that has been completed in respect of the Projects in accordance with the EBRD’s requirements and the Equator Principles. In addition, consideration has been given to compliance with EU and Romanian legislation and relevant Environmental, Health and Safety guidelines.
- 1.1.5 Reference should also be made to the other documents which have been prepared as part of the environmental and social due diligence, namely the Environmental and Social Action Plan (ESAP), the Stakeholder Engagement Plan (SEP), the Non-Technical Summary (NTS) and the Supplementary Information Report.

## 1.2 Methodology

- 1.2.1 This compliance assessment/gap analysis has been completed through document reviews, verification site visits and consultations as outlined below. Visits to both sites by key members of the project team including representatives from EDPR were undertaken between 22nd and 24th May 2012. This included visits in order to make specific observations in respect of the ecological value of the sites.
- 1.2.2 At the time of the verification site visits (May 2012), meetings were held with representatives from the Societatea Ornitologica Romania (SOR), Sarichioi and Vutcani City Halls and Tulcea and Vaslui County Councils. .
- 1.2.3 A desk study review of available documentation relating to environmental and social aspects associated with the Projects was undertaken to identify any specific concerns related to the projects. The desk study comprised the review of a range of documents including the environmental permits related to the sites, the EIA Reports which were

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prepared for each site in 2008 for Vutcani (by Environscopy and Search IT) and 2009 for Sarichioi (by Cabinet Expert Mediu), construction environmental management plans, monitoring reports, health and safety plans for the construction and operational phases and EDPR's health, safety and environmental provisions.

- 1.2.4 As part of the desk study, data requests were submitted to the relevant offices of the Environmental Protection Agency, the Societatea Ornitologica Romania (SOR) (in respect of bird data for the sites and surrounding area) and the Romanian Bat Protection Association (in respect of additional supporting bat records for the sites and a 15km study area around each site).

### 1.3 Scope of Work

- 1.3.1 The EBRD seek to ensure through their environmental and social appraisal and monitoring processes that the projects they finance:

- Are socially and environmentally sustainable;
- Respect the rights of affected workers and communities; and
- Are designed and operated in compliance with applicable regulatory requirements and good international practice.

- 1.3.2 The wind farm developments at Sarichioi and Vutcani are classified as Category A projects (EBRD, 2008) due to their size and location. Category A projects are defined as projects which could result in potentially significant and diverse adverse future environmental and/or social impacts and issues which, at the time of categorisation, cannot readily be identified or assessed and which require a formalised and participatory assessment process carried out by independent third party specialists in accordance with the Performance Requirements (PRs). Therefore, the Projects require an Environmental and Social Impact Assessment (ESIA) in line with EBRD requirements in order to assess the environmental and social impacts of the Projects and to ensure that appropriate mitigation measures are considered prior to committing financing for these schemes.

- 1.3.3 Due to their size and location the Projects were considered to fall within Annex 2 of Governmental Decision (GD) 1213/2006 (later replaced with GD445/2009) meaning that these projects needed to undergo a screening procedure to determine whether or not they were to be subject to a full EIA procedure in accordance with Romanian legislation.

- 1.3.4 An EIA was completed for each Project in 2008 for Vutcani (by Environscopy and Search IT) and in 2009 for Sarichioi (by Cabinet Expert Mediu).

- 1.3.5 The Environmental and Social Due Diligence of the Sarichioi and Vutcani wind farm has considered the following requirements:

- Equator Principles.
- EBRD Performance Requirements (PRs).
  - EBRD PR1: Environmental and Social Appraisal and Management;
  - EBRD PR2: Labour and Working Conditions;
  - EBRD PR3: Pollution Prevention and Abatement;
  - EBRD PR4: Community, Health, Safety and Security;
  - EBRD PR5: Land Acquisition, Involuntary Resettlement and Economic Development;
  - EBRD PR6: Biodiversity Conservation and Sustainable Management of Living



Resources;

- EBRD PR7: Indigenous People;
  - EBRD PR8: Cultural Heritage;
  - EBRD PR9: Financial Intermediaries; and
  - EBRD PR10: Information Disclosure and Stakeholder Engagement.
- Relevant European Commission Directives.
    - EU Directive 85/337/EEC on the Environmental Impact Assessment of the effects of projects on the environment (known as the EIA Directive), as amended by 97/11/EEC and 2003/35/EEC;
    - Wild Birds Directive (79/409/EEC); and
    - Habitats Directive (92/43/EEC);
  - Applicable Romanian legislation, including relating to environmental permitting requirements, public consultation and protected and designated areas.
  - EBRD and IFC Guidance & Policy.
    - EBRD (2003). EBRD Consultation and Disclosure Requirements - Guidance for Category A Projects. EBRD Environment Department, July 2003.
    - EBRD (2003). EBRD Consultation and Disclosure Requirements - Guidance for Category A Projects on Scoping. EBRD Environment Department, July 2003.
    - EBRD (2003). EBRD Consultation and Disclosure Requirements - Guidance for Preparation of a Public Consultation and Disclosure Plan. EBRD Environment Department, July 2003;
    - EBRD (2008). EBRD Environmental and Social Policy. May 2008;
    - IFC (2007) General Environmental, Health and Safety (EHS) Guidelines;
    - IFC (2007) Environmental, Health and Safety Guidelines for Wind Energy;
  - International Conventions
  - Best practice guidelines for wind energy development, including that published by the European Wind Energy Association and the UK's Natural England.
- 1.3.6 Further information relating to the above requirements, legislation and other applicable guidance is provided in Appendix A.

## 1.4 Reporting Deliverables

- 1.4.1 This report covers the analysis of Environmental, Health and Safety and Social impacts (positive and negative) of the project, particularly focusing on the review of the EIA Reports that have been prepared. The report identifies gaps and provides recommendations on how any shortcomings and gaps can be overcome in order to meet applicable EBRD Performance Requirements. In addition, from the findings of this review, an ESAP has been developed for each wind farm as a separate document (included in Appendix C of this report). This action plan identifies the activities to be undertaken by EDPR to ensure compliance with the EBRD's Performance Requirements and other applicable requirements such as EU standards and best practice.
- 1.4.2 A separate SEP report has been prepared by EDPR for each site. The SEPs provide a framework for consultation activities and disclosure of information including the identification of potential stakeholders, methods used for consultation activities and the records to be kept. The SEPs will enable EDPR to inform relevant stakeholders of

potential impacts of the project and address concerns that may be raised using a grievance mechanism. The SEPs has been drafted in accordance with EBRD's Performance Requirement 10. The social engagement activities carried out to date are summarised in the SEPs, although aspects of social due diligence including meetings with several key stakeholders that were consulted to garner views are also covered in the reports.

- 1.4.3 A Non-Technical Summary (NTS) has been prepared by EDPR for each site. These reports provide, in layman's terms, a project description, a map showing the sites, a summary of the potential benefits of the project, information on the potentially significant adverse environmental and social impacts, a summary of overall findings from the analysis including the impacts related to the project that require mitigation and monitoring as included in the ESAP, public consultation activities and contact information. The NTS also provides a summary of greenhouse gas (GHG) assessment of the project, the details of which are covered in the report.
- 1.4.4 An assessment has been conducted on the land acquisition process for the wind farms. An assessment of the requirement for a physical and economic displacement plan including compensation has been undertaken. The conclusion of the assessment was that there are no adverse issues in this regard and as such a plan is not deemed necessary. Further details are provided in this report.

## 1.5 The Project Team

- 1.5.1 The key members of the project team involved in the Gap Analysis are detailed in the table below.

**Table 1.1 Summary of Key Contacts Involved in the Gap Analysis**

Company	Contact	Responsibility	Contact Number	Email
EDP Renewables	Laura Lazar	Client	+40 21 204 03 07	LauraLazar@edpr.com
WSP Environment & Energy (UK)	Ian Williams	ESDD Project Manager	+44 29 20 366 300	<a href="mailto:ian.williams@wspgroup.com">ian.williams@wspgroup.com</a>
WSP Environment & Energy SRL	Dana Martinov	Environmental Specialist	+40 21 539 33 60	dana.martinov@wspgroup.ro



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## 1.6 Study Area

- 1.6.1 The study area for the Environmental and Social Due Diligence of the Sarichioi and Vutcani Wind Farm sites are provided in Figures 2 and 3.

## 1.7 Limitations

- 1.7.1 This report was compiled for the benefit of the EDPR and EBRD solely. This report is not intended to be relied upon by third parties without written authorisation by WSPE.

## 1.8 Reports and Information Consulted

- 1.8.1 The documents and websites that were consulted as part of this project are provided in Section 7.

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## 2 Description of the Projects

### 2.1 Site Selection and Consideration of Alternatives

- 2.1.1 Based on discussions with EDPR, it is understood that the sites were selected after a comprehensive wind survey programme had been undertaken by Wind Expert (Romania) to identify suitable locations for wind farm developments in the two regions of Dobrogea and Moldova.
- 2.1.2 Key factors in the selection of sites included:
- Sites to be located outside of protected ecological areas; and
  - Compliance with legislation relating to distances from existing electrical lines, roads and residential areas.
- 2.1.3 The layouts for both wind farms were developed for EDPR by Wind Expert. The designs and choice of turbines are based on optimum performance in terms of energy generation.
- 2.1.4 Section 1.4.9 of the EIA report for Sarichioi includes a discussion on the consideration of alternatives, although this is restricted to alternative methods of generating electricity, i.e. using fossil fuels, photovoltaic cells and wind turbines. The report for Vutcani explores the 'do nothing' alternative. Neither of the EIA reports explores alternative sites for the developments.
- 2.1.5 It is understood that the Sarichioi wind farm was originally proposed to comprise 20 wind turbines but this was subsequently reduced through discussions with the Environmental Protection Agency (EPA) in Tulcea and the Danube Delta Biosphere Reserve Association (ABRDD) and this wind farm now contains 11 wind turbines. The primary reason for the reduction in the number of turbines were difficulties with land ownership and that they were to be located in or in close proximity to a Natura 2000 designated area and their removal from the scheme reduced potential ecological impacts associated with the development. One of the wind turbines (covering an area of 0.08ha) is located within a designated ecological site (Dealurile Agighiolului, Agighiol Hills, Site of Community Importance, SCI) and was agreed during consultation with the Tulcea EPA and the ABRDD in March 2009.
- 2.1.6 During construction of the overhead transmission lines required to serve the wind farm it was necessary to make some changes from a technical perspective and the locations of three pylons (an area of 0.1ha) were revised such that they are located on agricultural land within the Deniz Tepe Special Protection Area (SPA), together with approximately 600m of overhead transmission line. Consultation was undertaken with Tulcea EPA, the SOR and EcoPontica regarding this change and a permit was obtained, requiring the implementation of bird monitoring and certain mitigation measures to deter bird species from the wind farm.
- 2.1.7 The turbines to be used for the Vutcani wind farm were originally Vestas V90 3.0MW, providing an overall capacity of 36MW. However the size of the turbines were reduced at a later stage in the project design to Vestas V90 2.0MW. The EIA Report for Vutcani relates to turbines of 3.0MW. There is no physical difference between these two types of turbine, only the power is limited to 2.0 MW through Vestas Scada system.

- 2.1.8 In accordance with Governmental Decision GD 445/2009 regarding the EIA framework procedure, the Vutcani project was classified as category B insignificant environmental impact (Annex 2 of GD 445/2009).
- 2.1.9 The Environmental Agreement no 12037 obtained for the Vutcani wind farm, following Vaslui EPA decision was obtained through the short procedure (Annex 2 of GD 445/2009). The Environmental Agreement does not specify the wind farm capacity only Vutcani Phase I and II, only Phase I has been constructed and the capacity constructed does not exceed that which has been authorised.
- 2.1.10 The development of the Sarichioi and Vutcani wind farms have been undertaken in accordance with EIA Directive 97/11/EC which requires EIA reports to include an outline of the main alternatives studies and an indication of the main reasons for this choice, taking into account the environmental effects. The Sarichioi and Vutcani sites were chosen for development following an extensive site option assessment undertaken by the company Wind Experts. The key criteria considered as part of the assessment included wind yield and not being located within an ecologically designated area.
- 2.1.11 Further discussion of alternatives is provided in Section 5.2 of this report.

## 2.2 Project Status and Timescales

- 2.2.1 The Projects have already obtained Construction Authorisations and environmental permits (in line with Romanian legal requirements). The construction phase is now complete for both Sites and the wind farms became operational in March (Sarichioi) and May (Vutcani) 2012 respectively.

## 2.3 Description of Infrastructure and Operations

- 2.3.1 The proposed wind farm at Sarichioi comprises 11 3.0MW wind turbines, providing a total installed capacity of 33MW. The wind farm at Vutcani comprises 12 2.0MW wind turbines, providing a total installed capacity of 24MW.
- 2.3.2 As part of the construction works some roads local to each site were upgraded in order to accommodate heavy vehicle movements associated with transportation of the turbine components and underground and overhead powerlines during construction. The layout of the wind farms has been designed to maximise energy generation.

### *Sarichioi*

- 2.3.3 The total area of land allocated for the wind farm amounts to 200ha. The footprint of the infrastructure works covers an area of approximately 1.35ha, including access road, the footprint of turbines and the transformer station. The land which was temporarily disturbed during the construction works has been restored. The proposed layout of the wind farm at Sarichioi is shown on Figure 2.
- 2.3.4 The wind farm at Sarichioi comprises 11 wind turbines (turbine model VESTAS V90 3.0MW), providing a total power of 33MW. Each wind turbine consists of a hollow steel tower with a generator nacelle which houses and protects the main components of the rotor blades, gear box, transformer and control systems. The turbines each have a total height of 150m (comprising 105m tower and 45m rotor blade above the tower height). Each foundation has a turbine with an area of 324sqm to a depth of 3m. The turbines have an installed power of 3000kW each and are provided with their own transformer station located within the nacelle.

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- 2.3.5 The transformer station is connected to the electricity grid via the nearest ENEL Dobrogea transformer station (110/20kV). Each turbine is ground connected, in accordance with STAS 12605/5-90. The 33/110kV transformer stations at each site have been built according to legislative requirements and standards PE 101/85 and PE 107. The connection of the 33/110kV transformer station to the ENEL grid is made to the aerial electrical line (LEA) with 110kV, starting from the transformer station of the wind farm. On start-up, each turbine consumes around 25kWh of electrical energy.
- 2.3.6 The layout of the turbines complies with the minimum distances stipulated by the permits issued by the electricity and telecommunications network operators. The turbines are placed approximately 500m apart. The normal lifetime of the turbine model is approximately 20 – 25 years.
- 2.3.7 The main technical specifications of the turbines are as follows:
- Power: 3MW;
  - Tension: 3 x 690V  $\pm$  10%;
  - Frequency: 50 Hz  $\pm$  5%;
  - Rotation: clockwise;
  - Cut-in wind speed: 3 m/s;
  - Rated wind speed; 14 m/s;
  - Cut-out wind speed: 25 m/s;
  - Nominal revolutions 16.1 revolutions per minute (rpm); and
  - Brakes: aerodynamic.
- 2.3.8 Further information relating to the technical details of the turbines is provided in Sections 1 and 2 of the EIA Report.
- 2.3.9 The shallow foundations for each tower are reinforced concrete with dimensions of 18m x 18m x 3m buried at 2m below ground level. Mechanised excavation was required for the works, to a depth of approximately 2.80m below ground level. Piled foundations were installed into the underlying bedrock in areas where soil conditions required.
- 2.3.10 Underground cable trenches are understood to be 1.2m deep and 0.8m wide. The cables are laid on sand and the trenches backfilled with compacted earth and the top soil reinstated. The 33/110kV transformer station will be constructed in accordance with the appropriate standards, including EP 101/85 for the construction of electrical installations and connections over 1kV voltage transformers and EP 107 Regulatory framework for the design and execution of electrical cable networks.
- 2.3.11 A 110kV overhead powerline has been constructed associated with the wind farm. In accordance with the requirements of the EcoPontica Permit and the Environmental Authorisation issued by Tulcea EPA mitigation measures including the use of bird deflectors and installation of artificial nests for Saker falcon have been implemented.
- 2.3.12 No water supply or sewage connections are required by the project. It is understood that bottled water will be provided for drinking purposes and other water required for domestic uses will be supplied by a contractor. An underground tank will be used for the storage of non-potable domestic water. A septic tank will be provided for the collection of wastewater and will be emptied periodically by a contractor.
- 2.3.13 Environmental impacts during the construction works were temporary in nature. All changes to the soil are reversible. During decommissioning of the wind farm all equipment will be dismantled and excavated and the land will be restored to the

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original conditions. Where practicable parts will be re-used for future turbines or recycled to provide reusable material.

- 2.3.14 The wind farm is accessed via the county road DJ222 and existing roads within the area were used to transport heavy equipment and specific items, including mounting platforms for the turbine foundations. New roads were also built to provide access to each wind turbine. The roads within the wind farm is approximately 4m in width, 2m for each lane, and comprise a 20cm deep layer of filling material (replacing the topsoil layer) and 30cm depth of gravel with melted bitumen. Rehabilitation of a road in Lastuni Village was completed in March 2012 and was sponsored by EDPR.
- 2.3.15 During operation, the requirement for access to the wind farm is minimal and is for the purposes of operating the substation, security, maintenance of the turbines and in the event of any incident or emergency. In addition, local residents who lease areas of the site for agricultural purposes will also be able to access their plots via the site roads. Further details regarding the lease agreements are provided in Section 4.3.
- 2.3.16 No fencing will be required around the wind turbines. The only fencing will be around the transformer substations associated with each wind farm.

#### *Vutcani*

- 2.3.17 The wind farm is located within 5km of the Albesti commune with villages Albești, Corni-Albești, Crasna, Gura Albești. The total area occupied by the wind farm is 400 ha, the plot of land covers an area of approximately 18ha. The proposed layout of the wind farm at Vutcani is shown on Figure 3.
- 2.3.18 The Vutcani wind farm comprises 12 wind turbines (turbine model VESTAS V90 2.0MW), providing a total power of 24MW. The turbines are connected, through 20kV underground cables and junction stations which are connected to a transformer station within the wind farm and this is then be connected to the nearest E.ON Romania transformers.
- 2.3.19 The connection to the E.ON Romania grid is achieved via an electricity sub-station of 20/110kV (100m<sup>2</sup> in area). A 110kV overhead powerline has been constructed associated with the wind farm.
- 2.3.20 Each turbine is ground connected, in accordance with STAS 12604, ensuring route continuity, and equipped with anti-earthquake measures. The transformation station 20 kV / 110 kV has been built according to legislative requirements and standards PE 101/85 and PE 107. The connection to the E.ON Romania grid is made to the aerial electrical line (LEA) with 110kV, starting from the transformer station of the wind farm.
- 2.3.21 The proposed layout of the turbines complies with the minimum distances stipulated by the permits issued by the electricity and telecommunications network operators. The turbines have been constructed approximately 500m apart. The normal lifetime of the turbine model is approximately 20 – 25 years.
- 2.3.22 No water or sewage connections are required by the project. As for the Sarichioi site, bottled water will be provided for drinking purposes and other water required for domestic uses will be supplied by a contractor. An underground tank will be used for the storage of non-potable domestic water. A septic tank will be provided for the collection of wastewater and will be emptied periodically by a contractor.
- 2.3.23 Access to the site is via the DJ224b which connects DN28B (Barlad to Vutcani City) before entering Vutcani. Rehabilitation of a road in Vutcani was undertaken in March 2012 under sponsorship provided by EDPR.
- 2.3.24 Environmental impacts during the construction works were temporary in nature. All

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changes to the soil are reversible. During decommissioning of the wind farm all equipment will be dismantled and removed and the land will be restored to the original conditions. Where practicable parts will be re-used for future turbines or recycled to provide reusable material.

- 2.3.25 The total area occupied by the wind farm is 400sqm and a further 300sqm used for vehicular access. The remaining land, approximately 179,300sqm will be used according to current agricultural uses.

## 2.4 Performance Standards and Monitoring

- 2.4.1 The Environmental Permits relating to each of the Projects are summarised in Tables 2.1 and 2.2 below. Separate environmental permits have been issued for the overhead powerlines and connection to the electrical national grid for each site, including an environmental permit for a change to the location of overhead powerlines for the Sarichioi site due to technical difficulties during implementation of the project.
- 2.4.2 Further information relating to environmental monitoring and mitigation for the Projects is provided in the Supplementary Information Report. The monitoring programme and mitigation measures are addressed in the Environmental and Social Action Plan (ESAP) for each Project.

**Table 2.1 Summary of Environmental Permit Requirements for Sarichioi Wind Farm**

*(Details in italics relate to construction requirements)*

<b>Environmental Agreement – Tulcea county Environmental Protection Agency</b>	
<b>General Requirements</b>	<ul style="list-style-type: none"> <li>■ <i>Following completion of the wind farm, construction areas will be reinstated with top-soil and vegetation to maximise the area that can be used for agriculture, apart from those areas within the project.</i></li> <li>■ Measures detailed within the EIA are to be implemented.</li> </ul>
<b>Air</b>	<ul style="list-style-type: none"> <li>■ <i>Excavated material is to be dampened during strong winds in order to avoid dust. Material is to be covered when transported to minimise dust.</i></li> <li>■ <i>The equipment and vehicles shall be appropriately maintained and vehicle exhaust emissions shall not exceed legal values.</i></li> <li>■ <i>No concrete production is to take place on site.</i></li> </ul>
<b>Soil</b>	<ul style="list-style-type: none"> <li>■ <i>Construction works must be supervised in order to prevent contamination off-site</i></li> <li>■ Waste collection shall be carefully supervised in order to prevent uncontrolled escape or disposal of waste.</li> <li>■ There shall be no oil or fuel leakages.</li> </ul>
<b>Waste</b>	<ul style="list-style-type: none"> <li>■ Ecological toilets shall be used.</li> <li>■ During decommissioning wastes shall be handled according to their type, and handed over to specialized recycling companies; the entire surface of the wind farm shall be restored to its original condition.</li> </ul>
<b>Noise and Vibration</b>	<ul style="list-style-type: none"> <li>■ <i>Construction and mounting of the parts of the wind turbine shall be done correctly.</i></li> <li>■ <i>Equipment used for the construction process shall be fitted with equipment to reduce noise and vibration as much as possible.</i></li> </ul>
<b>Ecology</b>	<ul style="list-style-type: none"> <li>■ Blade tips to be painted in bright colours to avoid bird strike.</li> <li>■ Turbine towers to be signalled with red paint.</li> <li>■ It is forbidden to alter property of Dealurile Agighiolului SCI, except the ones mentioned within the project and which are used in agricultural purposes.</li> <li>■ Compliance with environmental protection laws and regulations: <ul style="list-style-type: none"> <li>- G.O. no. 195/2005 concerning environmental protection, approved and modified by Law 265/2006 modified and completed by G.O. 164/2009</li> <li>- G.D. no 856/ 2007 concerning waste administration and approval of the list of waste, including hazardous waste</li> <li>- Law no. 27/ 2007 concerning the approval of G.O. no. 61/ 2006 (concerning modification and completion of G.O no. 78/ 2000 regarding waste)</li> <li>- G.O. no. 57/ 2007 concerning protected natural areas, preservation of natural habitats, of the wild fauna and vegetation, modified by G.O. 154/ 2008.</li> </ul> </li> <li>■ Compliance with the terms of the permit issued by Danube Delta Biosphere Reserve Authority no.23 of 24.06.2009.</li> <li>■ Special protective measures shall be taken if species of plants and animals in the neighbouring areas (SCI Dealurile Agighiolului) which are strictly protected by law are affected by the construction and operation of the wind farm.</li> <li>■ Order and environment quality shall be preserved within and outside the wind farm.</li> <li>■ Monitoring will include recording bird activities at varying times of the day and year and in different weather conditions and recording bird carcasses. Specific details are listed within the individual permits.</li> <li>■ The observation period is a minimum of one year, and it can be extended according to the conclusions drawn after interpreting observation data and videos.</li> <li>■ The owner of the project shall compile the results of the monitoring activity into a database and analyse them in order to draw conclusions which shall be sent every 6 months to Tulcea EPA. The way the monitoring activity is to be continued will be based on these results.</li> </ul>



Danube Delta Biosphere Reserve (ABRDD) No.23 of 24.06.2009 (Ministry of Environment)	
<b>General Requirements</b>	<ul style="list-style-type: none"> <li>■ The project will comply with the conditions provided in the regulations documentation issued by other certification authorities, urban planning certificate and with the parameters concerning the organisation of the area and the certified technical and legal status.</li> <li>■ Tulcea Danube Delta Biosphere Reserve Authority must be notified immediately of any accidental pollution of the environment.</li> <li>■ Personnel must be trained with a view to prevent technological hazards or accidental release of pollutants into the environment, to avoid noise levels above the maximum allowed levels and the uncontrolled storage of waste material of any kind.</li> <li>■ Establishing a working calendar for the duration of the investment and after the commissioning, considering the need to preserve and protect the ecosystems.</li> <li>■ <i>The materials necessary for the execution of the works shall be stored in proper and adequately equipped places in order to prevent the pollution of the ground and/or underground and of the surface water. The works at the construction site shall be carried out exclusively within the perimeter of the owner and no soil resulted from different activities shall be deposited outside the location.</i></li> <li>■ <i>Dust generation and noise emissions etc. should be avoided, standards and legislation concerning environmental protection must be complied with.</i></li> </ul>
<b>Soil</b>	<ul style="list-style-type: none"> <li>■ <i>Any materials necessary for the works shall be stored in appropriate locations to prevent pollution of the ground and/or groundwater and surface water.</i></li> </ul>
<b>Waste</b>	<ul style="list-style-type: none"> <li>■ Recyclable waste materials shall be collected separately and delivered to specialised units for recycling according to waste management legislation: Law 465/2001, the MMGA Order 117/2004, the Government Decision 166/2004, and the MMGA Order 1027/2005.</li> <li>■ <i>Waste materials from construction shall be transported to locations identified by Sarichioi Local Council.</i></li> <li>■ Activities shall be in compliance with Government Decision 621 of June 23, 2005 management of packaging material and packaging waste material, as amended by Government Decision 1872/2006.</li> <li>■ Sanitation of the areas polluted with any materials and waste materials. The large waste materials resulted from the construction shall be transported exclusively to the locations indicated by the Sarichioi Local Council. The recyclable waste shall be processed in specialized units.</li> <li>■ The urban sanitation norms adopted by the local administration should be complied with.</li> <li>■ Any areas polluted with materials and waste materials shall be cleaned.</li> </ul>
<b>Noise and Vibration</b>	<ul style="list-style-type: none"> <li>■ Noise levels shall not exceed the maximum allowed levels.</li> </ul>



**Danube Delta Biosphere Reserve (ABRDD) No.23 of 24.06.2009 (Ministry of Environment)**

**Ecology**

- The operation schedule of the wind farm shall be established depending on the birds' migration, feeding and reproduction periods and consider the need to preserve and protect surrounding ecosystems
- The continuation of the environmental impact study that shall focus on the impact of the operation of the wind power stations on the flora, the habitats and especially the bird population after the investment has been finalized, considering that the location is in the neighbourhood of the Danube Delta Biosphere Reserve – an extremely important area for the migration, feeding and reproduction of birds. Quarterly reports with all results of the monitoring activity will be submitted to the Danube Delta Biosphere Reserve Authority.
- Establishing a self-monitoring system according to the recommendations in the environmental impact study both during the construction and during the operation period:
  - monitoring the birds carcasses found around the wind farm, beginning with the construction period at an interval of 7 days and collecting the data in the database;
  - during the operation of the wind farm and at the peak of the migration periods, namely during the interval March-May and August-October respectively, the observation shall be without interruption three days a week;
  - in order for the monitoring process to be efficient and accurate, infrared video cameras equipped with microphones and radars shall be placed on the turbines thus allowing for the real-time transmission of information concerning the abundance of the bird species at the location and also an accurate assessment of the impact of the wind farm on the birds;
  - if the monitoring process shows that there is a risk of birds colliding with the blades of the power stations, a special monitoring device equipped with a video camera will be installed, able to detect the presence of birds and their trajectory 750 meters before they reach the wind power station with the possibility to reduce the speed of the blades of the air generators, thus avoiding the birds being killed or injured;
  - observation operations on site shall be conducted during the birds' migration period in order to study their behaviour as regards the presence and operation of the wind farm. Special consideration shall be given to the following aspects: whether the flight altitude changes when encountering the wind farm, the maximum distance the birds come to the wind power stations, the change of the migration routes should these cross the wind farm, the development stage of the birds identified at the location etc.
- Monitoring will include recording bird activities at varying times of the day and year and in different weather conditions and recording bird carcasses. Specific details are listed within the individual permits.
- If the conclusions resulting from interpreting the data collected from direct observation together with the audio-video recordings show a negative impact on the biodiversity in the Danube Delta Biosphere Reserve, the construction works shall be stopped or the operation of the wind farm shall be interrupted.
- No species of flora or fauna are to be brought into the SPA/SCI without prior authorization.
- Compliance with environmental protection laws and regulations:
  - G.O. no. 195/2005 concerning environmental protection, approved and modified by Law 265/2006 modified and completed by G.O. 164/2009
  - G.D. no 856/ 2007 concerning waste administration and approval of the list of waste, including hazardous waste
  - G.O. no. 57/ 2007 concerning protected natural areas, preservation of natural habitats, of the wild fauna and vegetation, modified by G.O. 154/ 2008

<b>EcoPontica No.152 of 20.12.2011 – Ponte Eco Foundation</b>	
<b>Ecology</b>	<ul style="list-style-type: none"> <li>■ For areas within the Deniz Tepe Natura 2000 site the following conditions apply: <ul style="list-style-type: none"> <li>- Power lines are to be marked with visual signage signalling devices every 50 meters.</li> <li>- Artificial nests (technical specifications to be provided by SOR) are to be provided for the Saker falcon (<i>Falco cherrug</i>) on each power pylon in and near the protected area of Deniz Tepe SPA/SCI.</li> <li>- The risk of electricity poles inside the protected area should be eliminated.</li> <li>- The high voltage transmission line shall be monitored from the time of commissioning for a period of 36 months in accordance with the following conditions: <ul style="list-style-type: none"> <li>■ Monitoring protocols to be approved by EcoPontica.</li> <li>■ Monitoring reports to be submitted to EcoPontica.</li> </ul> </li> </ul> </li> </ul>

<b>Environmental Authorisation 8372/2012</b>	
<b>General Requirements</b>	<ul style="list-style-type: none"> <li>■ Measures detailed within the EIA are to be implemented.</li> <li>■ The wind farm is to be operated in accordance with the conditions imposed by ABRDD in their permit 23/2009.</li> <li>■ The issuing authority is to be notified of any changes of equipment, operation conditions approved by authorisation 8372/2012.</li> <li>■ The wind farm is to be operated in accordance with the conditions imposed by permit (152/2011) issued by EcoPontica and SOR (as administrators of Deniz Tepe SPA/SCI and Nature reserve Deniz Hill).</li> <li>■ Tulcea EPA must be notified immediately of accidents that may happen in the vicinity of the wind farm and can endanger the quality of the environmental components, habitats, flora and fauna species for which the protected areas of Deniz Tepe SPA, Deniz Tepe SCI and Deniz Hill nature reserve are designated.</li> </ul>
<b>Soil</b>	<ul style="list-style-type: none"> <li>■ There shall be no oil or fuel leakages.</li> </ul>
<b>Waste</b>	<ul style="list-style-type: none"> <li>■ The volume of waste oils collected during turbine maintenance shall be transported by certified companies and the volumes will be recorded together with the means of disposal. The details shall be reported to the EPA twice a year.</li> <li>■ The activity owner must submit records to the EPA biannually on the management of waste oils in accordance with GD 235/2007.</li> <li>■ No waste is to be stored temporarily on the site.</li> </ul>
<b>Ecology</b>	<ul style="list-style-type: none"> <li>■ The ecological monitoring programme in place during construction shall be continued and at the same time monitoring will be undertaken in a reference area in the vicinity of the wind farm, not influenced by the wind farm, in order to compare the construction and operational reports and determine the wind farm's effect on biodiversity within Deniz Tepe SPA/SCI and the Deniz Hill nature reserve. The period for this monitoring will be for 5 years following the wind farm becoming operational with the possibility to extend the period based on the monitoring results. The biodiversity monitoring report will be sent on a yearly basis to Tulcea EPA.</li> <li>■ Immediately after observation the accidental death of birds due to collision with the wind turbines shall be notified to Tulcea EPA.</li> </ul>

**Table 2.2 Summary of Environmental Permit Requirements for Vutcani Wind Farm**

<b>Unique Environment Agreement 2007</b>	
<b>General Requirements</b>	<ul style="list-style-type: none"> <li>■ Conditions to be met by the wind farm beneficiary include to provide an appropriate project design and to obtain the specific permits listed in the Urban Certificate. Any topsoil remaining after construction will be re-used by Vutcani City Hall. In addition within 45 days before starting operations the Environment Authorisation and Fire Safety Permit from ISUVaslui is to have been requested.</li> </ul>

<b>Environmental Authorisation 78/2012</b>	
<b>General Requirements</b>	<ul style="list-style-type: none"> <li>■ The provisions of EGO 196/2005 on Environment Fund approved by the Law 105/2006 with subsequent amendments shall be complied with.</li> <li>■ Proper beaconing of the turbines shall be implemented.</li> <li>■ Proper technical and organisation conditions shall be implemented to avoid the risks for persons, goods and environment.</li> <li>■ The issuing environmental authority shall be advised of any changes in equipment, as per operation conditions approved by this authorisation.</li> <li>■ The issuing environmental authority shall be notified of any changes in ownership.</li> <li>■ An environmental permit shall be requested and obtained for any extension or modification of activities that may have significant impact on the environment.</li> <li>■ The project vicinity shall not be affected.</li> <li>■ Turbine maintenance will be carried out by the agreed operator.</li> </ul>
<b>Noise and Vibration</b>	<ul style="list-style-type: none"> <li>■ The noise limit set in the standard STAS 10009/1988 shall be complied with.</li> </ul>
<b>Waste</b>	<ul style="list-style-type: none"> <li>■ The technological platforms, transformer station, controlling building and access roads shall be kept clean.</li> <li>■ Wastes from maintenance and service activities will be removed by certified companies for value/ disposal, in accordance with Law 211/2011 on the waste regime, GD 235/2007 on the waste oils management, GD 1061/2008 on hazardous and non-hazardous waste transportation. Waste records will be kept according with GD 856/2002 and reported to Vaslui EPA.</li> <li>■ The provisions of the EGO 68/2007 on the environment liabilities, namely prevention of pollution and restoration of any environmental damage, as approved by the Law 19/2008 with subsequent amendments, shall be complied with</li> <li>■ Data on the nature and intensity of any accidental contamination to be sent to EPA Vaslui and County Vaslui National Environmental Guard. Also, corresponding mitigation and clean-up actions that have been implemented are to be sent.</li> <li>■ Waste oils from the turbines will be transported by certified companies. Household wastes will be managed by SC CUP Barlad.</li> <li>■ The activity owner will keep waste management records in accordance with GD 856/2002.</li> <li>■ The waste recording questionnaire shall be completed at the request of the EPA.</li> <li>■ The packaging from hazardous substances shall be appropriately managed and metal drums taken by the company doing the turbine maintenance.</li> <li>■ Records of waste generation will be kept.</li> </ul>
<b>Ecology</b>	<ul style="list-style-type: none"> <li>■ A biodiversity monitoring programme will be undertaken for the first 12 months of operation of the wind farm and the results submitted to Vaslui EPA.</li> </ul>
<b>Soil</b>	<ul style="list-style-type: none"> <li>■ The maximum allowed limits for soil as set out in Order 756/1997 shall be met.</li> <li>■ In the event of contamination EPA can request the analysis of soil samples at a specialised laboratory.</li> </ul>
<b>Wastewater</b>	<ul style="list-style-type: none"> <li>■ The wastewater quality limits set out in NTPA002/2002-GD188/2002 amended by GD352/2005 shall be met.</li> </ul>

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## 3 The Existing Sites and Surrounding Area

### 3.1 Overview of the Existing Sites and Surrounding Area

#### *Sarichioi*

- 3.1.1. The Sarichioi wind farm is located approximately 7km north of the Sarichioi commune, and is approximately 4km west of the town of Sabangia. The nearest village to the Site is Agighiol, which is located approximately 900m to the north-east at the closest point (see Figure 2). The current population of Sarichioi is 3722 and it covers an area of 295.95ha. The site is accessed via DJ222, which links Sarichioi in the south with Tulcea in the north. The land is privately owned and is classed as arable land.
- 3.1.2. The Site lies approximately 5km west of Lake Agighiol, and approximately 7km north of Lake Razim. There are no hydrological features within the Site boundary. A significant landscape feature within the site and the surrounding area is a large 'hilly' island, which has formed through a number of erosion processes, and is now blanketed with thick loess. There are also a number of limestone formed hills surrounding the north of the Site, towards the commune of Agighiol. Steppe vegetation can be found on rough areas (slopes, rocky plateaus and valleys). Although there are areas of woodland on Site, there are only small clusters within the surrounding area; this is due to intensive agricultural practices.
- 3.1.3. The Site covers an area of approximately 200 ha and the wind turbines cover an area of approximately 1.35ha.
- 3.1.4. The Site is situated approximately 25km west of the Danube Delta and is surrounded largely by flat, open arable land. Due to the rural surrounding, existing ambient noise levels are expected to be low and determined largely by occasional aircraft fly-overs, local agricultural activities and birdcalls.

#### *Vutcani*

- 3.1.5. The Vutcani wind farm is located within the Dumbrava area, and is approximately 1km west of the town of Vutcani and 3.5km north-east of Rosiesti village. Approximately 2km to the north of the Site is Albesti commune. These localities are rural in character and are situated along water courses, roads and farmland. The surrounding population is ageing and therefore there is an increasing demographic dependency typical of rural communities of this nature.
- 3.1.6. The Site covers an area of approximately 18ha and is on land which is privately owned. The land has limited agricultural value (category IV) and is used for crop production, including wheat. Within the Site there are no forested areas or rare/sensitive plant species. Agricultural land use is not colonised other than by grasses and plants which are fast growing and tolerant to the environmental conditions. Water resources are limited, with no irrigation systems in place; however, approximately 1.5km east of the Site is the Idrici riverbed, which flows in to the Elan (this riverbed is dry during summer months). The Site is located approximately 9km south of Lake Manjesti.
- 3.1.7. Access to the Site is via the DJ224b (asphalt) and links with DN28b between Lasi-Barlad and Vutcani. The road which enters Vutcani is unpaved.
- 3.1.8. The land surrounding the Site is predominately arable land which has been weathered and eroded through a number of processes.

- 3.1.9. The local topography is composed of a series of peaks and valleys which are mostly orientated north-south.
- 3.1.10. Due to the rural surrounding, existing ambient noise levels are expected to be low and determined largely by occasional aircraft fly-overs, local agricultural activities and birdcall.

## 3.2 Protected Areas and Other Designated Sites

### *Sarichioi*

- 3.2.1. There are five protected areas within 10km of the Sarichioi wind farm (as shown on Figure 4), two relating specifically to birds, designated under the Birds directive, and the other three designated under the terms of the Habitats directive. The designated sites are as follows:

- Delta Dunării și Complexul Razim – Sinoie (Site Code ROSPA0031) - located approximately 4km east of the wind farm;
- Delta Dunării (Site Code ROSCI0065) - located approximately 4km east of the wind farm;
- Dealurile Agighiolului (Site Code ROSCI0060) - located adjacent to the north, west and east of the wind farm;
- Deniz Tepe (Site Code ROSPA0032) – located approximately 10km west of the wind farm but contains approximately 600m of overhead transmission line associated with the wind farm; and
- Deniz Tepe (Site Code ROSCI0067) – located approximately 9km west of the wind farm but near the overhead transmission line associated with the wind farm.

- 3.2.2. The River Danube (SPA and SCI) (to the east of the Site) is a major bird flyway during spring and autumn migration periods for such species such as Osprey, Little tern, Pygmy cormorant, Ferruginous duck, White-tailed eagle and Glossy ibis. The area also includes species such as Otter, Steppe polecat and European mink. The area is covered by Article 4 of Directive 79/409/EEC and is listed in Annex II of Directive 92/43/EEC. The main characteristics of the area include: bogs, marshes, water fringed vegetation, fens and mud flats.

- 3.2.3. One of the turbines associated with the wind farm (turbine 6) is located on agricultural land within the Dealurile Agighiolului SCI. Consultation has been held with Tulcea EPA and the ABRDD in relation to the proximity of the wind farm to this SCI. The general character of the designated area is dry grassland and steppes with extensive cereal cultures and broad leaved woodland. Within the area are a number of species, including: Romanian Hamster, Spur-thighed tortoise and European Ground Squirrel. The species are covered by Article 4 of Directive 79/409/EEC and listed in Annex II of Directive 92/43/EEC.

- 3.2.4. In addition approximately 600m of overhead transmission lines and three pylons associated with the wind farm are located on agricultural land within the Deniz Tepe SPA. Consultation has been held with Tulcea EPA, SOR and EcoPontica and the permit issued by EcoPontica includes monitoring and mitigation measures to minimise effects on bird species associated with this site. Part of the Deniz Tepe SPA is also designated as a SCI. The general character of the designated area is also dry grassland and steppe vegetation with extensive cereal cultures. Within the designated site are a number of protected species, including European Ground Squirrel and rat snake and plant species including *Campanula romanica*, Vinning asparagus, *Celtis*

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*glabrata* and *Festuca callieri*.

- 3.2.5. The wind farm site comprises mainly grassland and arable land with some areas of woodland and scrub near the northern boundary, although the wind farm itself does not contain any woodland. The wind farm is located on an area of relatively high ground compared to the surrounding flat, open landscape.
- 3.2.6. During the verification site visit birds were observed demonstrating a variety of behavioural activities. Pelicans, birds of prey and bee-eaters were primarily using the area as a migration route, using the updrafts from the hill to gain lift and height to carry on the migration. The smaller birds such as the larks and wagtails were displaying and feeding at the site and were considered to be using the site as a breeding area.
- 3.2.7. A geological reserve is located at Agighiol, 0.7km north of the Site. The reserve covers an area of 9.7ha and is situated between Regiment Hill and the village. The geological reserve is within the Dealurile Agighiolului SCI and is protected due to the presence of fossils of fauna from the middle Triassic age (i.e. cephalopods, brachiopods and bivalves).

#### *Vutcani*

- 3.2.8. There are three protected areas within 20km of the Vutcani wind farm, one relating specifically to birds, designated under the Birds directive, and the other two designated under the terms of the Habitats directive. The designated sites are as follows:
- Horga - Zorleni (Site Code ROSPA0119) - located approximately 20km south of the wind farm;
  - Pădurea Dobrina – Huși (Site Code ROSCI0335) - located approximately 5km north of the wind farm; and
  - Râul Prut (Site Code ROSCI0213) - located approximately 20km to the east of the wind farm.
- 3.2.9. The protected areas located within approximately 15km of the Vutcani site are shown on Figure 5.
- 3.2.10. The Horga-Zorleni SPA supports a number of Annex 1 bird species covered by Article 4 of Directive 79/409/EEC and listed in Annex II of Directive 92/43/EEC within the area. These include species such as: Tawny Pipit, Lesser Spotted Eagle, European Nightjar and White Stork. The main characteristics of the area include areas of extensive cereal cultures and broad-leaved woodland.
- 3.2.11. The Padurea Dobrina – Husi SCI is an area covered in broad-leaved deciduous woodland and includes species such as the Grey wolf, which is covered by Article 4 of Directive 79/409/EEC and listed in Annex II of Directive 92/43/EEC.
- 3.2.12. Raul Prut SCI has been designated for species covered by Article 4 of Directive 79/409/EEC and listed in Annex II of Directive 92/43/EEC, these include Otter, Mouse-eared Bat and European Ground Squirrel. The main characteristics of the site include inland water bodies, broad-leaved deciduous woodland and dry grassland steppes.

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- 3.2.13. The Vutcani wind farm is not located within the boundary of any protected areas, including Natura 2000 sites such as SPAs, SCIs and IBAs.
  - 3.2.14. The site typically comprises agricultural land, grassland and patches of scrubland. Towards the northern end of the site is an area of mature deciduous woodland. Woodland is also located along the valley sides to the north and south of the wind farm and in the valley floor.
  - 3.2.15. The site is of limited ornithological importance, being located a significant distance from any protected areas for birds and not located on any known bird migration routes.



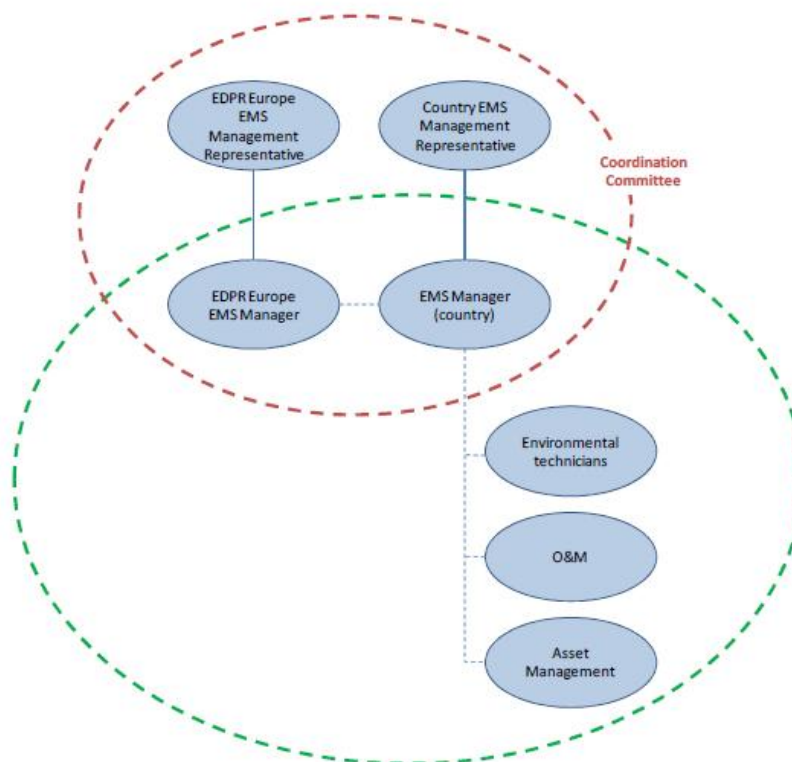
## 4 Environmental, Health, Safety and Social Analysis

### 4.1 Review of Corporate EHSS Management Arrangements

#### *Management Structure and Responsibilities*

- 4.1.1. The EMS Manager is responsible for the implementation of the EMS at the operational wind farms.
- 4.1.2. Responsibilities regarding EMS requirements and reporting to the EMS Manager are included in the job descriptions of all employees.
- 4.1.3. The EMS Manager from Romania reports to the European EMS Manager and to the Country Management Representative.
- 4.1.4. The EDPR EMS organisational chart is presented below:

**EDPR EU EMS Organizational Chart**





## Environmental Policy

4.1.5. EDPR's Environmental Policy was approved in January 2011 by EDPR Executive Committee for all countries where EDPR wind farms are present, including in Romania. The Environmental Policy was sent to all the identified stakeholders for the Sarichioi and Vutcani wind farms.

4.1.6. EDPR European's top management has endorsed the Environmental Policy and ensures that, within the defined scope of the EMS:

- It is appropriate to the nature, scale and environmental impacts of its activities, products and services;
- It includes a commitment to continual improvement and prevention of pollution;
- It includes a commitment to comply with applicable legal requirements and with other requirements to which the organization subscribes which relate to its environmental aspects;
- It provides the framework for setting and reviewing environmental objectives and targets;
- It is documented, implemented and maintained;
- It is communicated to all persons working for or on behalf of the organization; and
- It is available to the public.



Constantly improve environmental performance, especially in the prevention of pollution and minimization of its impacts.

Comply with the requirements of applicable environmental legislation as well as other, voluntary commitments.

Manage environmental risks in order to eliminate or minimize the negative impacts of our activities both in normal circumstances and in the event of emergencies, accidents or disasters.

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### *EHS Policies, Procedures and Management Systems*

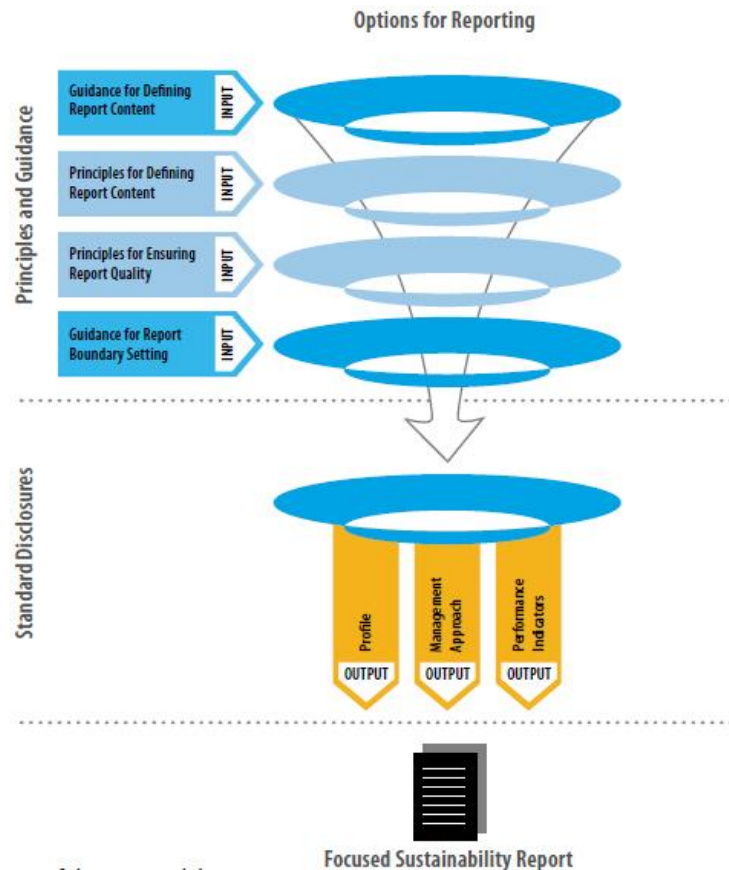
- 4.1.7. For Sarichioi and Vutcani, the ISO 14001 certification procedure started in January 2012 and an internal audit was carried out on 19th June. The certification audit will be in September 2012.
- 4.1.8. EDPR Group publishes an annual integrated report describing the company's performance with respect to the three pillars of sustainability: economic, environmental and social.
- 4.1.9. Sustainability reporting is the practice of measuring, disclosing, and being accountable to internal and external stakeholders for organizational performance towards the goal of sustainable development.



- 4.1.10. The reports are published on the EDPR company website:  
<http://www.edprenovaveis.com/Investors/Publications/CompanyReports>

### *Global Reporting Initiative (GRI)*

- 4.1.11. EDPR is committed to following the G3 guidelines of the Global Reporting Initiative (GRI) for Sustainability Reporting.
- 4.1.12. The GRI directives define a set of indicators and recommendations to create a global standard for disclosing information concerning the three sustainability pillars: economic, environmental and social performance. A company's adherence to these directives means that it concurs with the concept and practices of sustainability.
- 4.1.13. The GRI framework defines a list of principles to help organizations ensure that the content of the report is balanced and accurate. EDPR applied these principles as the basis for the 2010 and 2011 Annual Reports.



4.1.14. Following the GRI Guidelines, the reports for 2010 and 2011 have been externally assured by KPMG, certifying the A+ application level self-declared by EDPR.

Report Application Level		C	C+	B	B+	A	A+
Standard Disclosures	Profile Disclosures	Report on: 1.1 2.1 - 2.10 3.1 - 3.8, 3.10 - 3.12 4.1 - 4.4, 4.14 - 4.15	Report Externally Assured	Report on all criteria listed for Level C plus: 1.2 3.9, 3.13 4.5 - 4.13, 4.16 - 4.17	Report Externally Assured	Same as requirement for Level B	Report Externally Assured
	Disclosures on Management Approach	Not Required		Management Approach Disclosures for each Indicator Category		Management Approach disclosed for each Indicator Category	
	Performance Indicators & Sector Supplement Performance Indicators	Report fully on a minimum of any 10 Performance Indicators, including at least one from each of: social, economic, and environment.**		Report fully on a minimum of any 20 Performance Indicators, at least one from each of: economic, environment, human rights, labor, society, product responsibility.***		Respond on each core and Sector Supplement* indicator with due regard to the materiality Principle by either: a) reporting on the indicator or b) explaining the reason for its omission.	
		<p>* Sector supplement in final version</p> <p>** Performance Indicators may be selected from any finalized Sector Supplement, but 7 of the 10 must be from the original GRI Guidelines</p> <p>*** Performance Indicators may be selected from any finalized Sector Supplement, but 14 of the 20 must be from the original GRI Guidelines</p>					

4.1.15. Further details can be found in EDPR Annual Report for 2011 which is published on the company's website.

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## 4.2 Site Specific Environmental Issues

### *EIA Report Review*

- 4.2.1. A brief summary of the EIA Report prepared for each wind farm is provided below and includes the following:
- a baseline data section;
  - a project description section;
  - an evaluation of potential effects on environmental characteristics of the site; and
  - a summary of potential environmental and social impacts associated with the proposed development.

### *EIA Report – Sarichioi*

- 4.2.2. The EIA Report identifies a number of possible impacts associated with the wind farm on the environment, a summary of which are provided below.

#### Impacts on air

- 4.2.3. Section 4.2 of the EIA Report provides a description of the Site's characteristics in relation to climate and wind conditions. The area usually experiences hot summers with low precipitation and mild winters with blizzards and strong winds. The prevailing wind direction for the county of Tulcea is from a southerly direction.
- 4.2.4. It is stated in the report that there would be potential for air quality issues associated with the construction and assembly of the wind farm (i.e. vehicle and dust emissions); however, these impacts were considered to be temporary in nature. The report identifies appropriate mitigation measures, such as ensuring that equipment and vehicles are checked, to minimise the impact on air quality during construction and decommissioning of the wind turbines.
- 4.2.5. Section 4.2 states that there is no potential source of air pollution during the operation of the wind farms.

#### Impacts on ground and surface water

- 4.2.6. Section 4.1 of the EIA Report states that the river network surrounding the area is poor, the valleys are dry, with water flowing only during winter months. Watercourses surrounding the Site flow into the Danube River basin and the Black Sea. The depth of groundwater beneath the Site is approximately 32m below ground level. The aquifers within the region are of poor quality and are fed through precipitation and irrigation.
- 4.2.7. The wind farm requires no water supply or sewage connection. No significant impacts on ground conditions and water resources are anticipated as a result of the proposed wind farm.
- 4.2.8. The EIA Report (Section 4.1) states that construction works could be considered as a source of pollution in the event of leakages or spills of lubricants or fuels. The report also suggests that there is the potential for accidental discharges of pollutants during operation, through leakages of fuel, oil or lubricants during maintenance or over time. However, this impact is to be mitigated through the provision of a sand layer at the base of each turbine and is not considered to be significant.

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#### Impacts on soils and geological features

- 4.2.9. The study area falls within the Dobrudja plateau unit north (Tulcea hill). The bed rock underlying the site is loess, which has arisen through weathering and erosion. The soils are argillic, formed by deposition and are reddish brown. The site also includes highly fertile, chernozems soil. The site is used as arable land.
- 4.2.10. As part of a site investigation three boreholes were installed to a depth of 3m below ground. Observation of the boreholes found that the topsoil was up to 0.30 to 0.40m thick, followed by a layer of clay of up to 1m thick which was above bedrock present at a depth of 2.5 to 3m below the surface. Further information in relation to the site geology can be found in the site investigation report, 'Geotechnical Study – location of the wind turbine farm in Sarichioi, Tulcea County' (Manoli, D. 2010).
- 4.2.11. The report highlights potential impacts which could potentially occur during construction, such as: accidental petrol and oil leaks and waste resulting from construction of works. Mitigation measures identified to reduce these impacts include using sand beds and good management of waste materials.
- 4.2.12. Potential impacts identified associated with the operation of the wind farm include the ingress of groundwater into the turbine foundations and the potential for leakages of lubricants and fuels whilst maintaining the turbines.
- 4.2.13. The county of Tulcea lies on a foundation of Palaeozoic rocks, Triassic deposits and loess. North Dobrogea area is very active in terms of local earthquakes and lies on two major fault lines: Galati-Tulcea-St. George (north of the site) and Camena Peceneaga (crosses the site). The Galati-Tulcea-St. George fault is generally active, with earthquakes recoded along the fraction each year. Earthquakes arising from north Dobrogea region do not exceed 5.4-5.5 on the Richter scale, but are frequently strongly felt in the epicentral region (at Tulcea and the surroundings). The last important seismic movements generated by the Northern Dobrogea tectonic system took place in September 1980, November 1981, October 2004 and May 2008. In relation to protected geological features, section 4.4 of the report has identified a geological reserve in Agighiol, 0.7km north of the Site. Further details relating to this site are provided in Section 3.2 of this report. No impact on the protected geological site is anticipated as a result of the wind farm.
- 4.2.14. The land in which the wind farm is located is stable and not susceptible to collapse or land slips. The report also states that the area is stable in terms of tectonics.
- 4.2.15. No potential impacts on geology are identified in relation to construction or operation of the wind farm.

#### Impacts on flora and fauna

- 4.2.16. Section 4.6 of the EIA Report describes the existing ecological conditions on the Site and in the surrounding area based on the verification site visits. Consideration is given to habitats and species of flora and fauna with particular focus on bird species and habitats associated with the adjacent Agighiol Hills SCI.
- 4.2.17. Plant species present within the Site and surrounding area are characteristic of species which have adapted to drought conditions in areas of high, rocky ground and hill slopes. Isolated areas of shrub vegetation is present with woody species being the most numerous, represented by shrubs such as hawthorn (*Crataegus monogyna*), wild rose (*Rosa canina*), oleaster (*Eleagnus angustifolia*), stag horn's sumac (*Rhus typhina*), and several examples of boxthorn (*Lycium*) and common dogwood (*Cornus sanguinea*).

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- 4.2.18. During the verification site visits it is noted that two plant species included on the National Red List were identified, *Dianthus nardiformis* and *Echinops ritro*. These species were observed outside the proposed development area and will not be affected by construction and operation of the wind farm.
- 4.2.19. Faunal species observed during the site visits were predominantly bird species, although foxes, rabbits and deer together with various terrestrial invertebrate species (including locusts, crickets and spiders.) are known to be present in the local area.
- 4.2.20. The nearby Agighiol Hills SCI supports various species including rodents such as ground squirrel (*Spermophilus citellus*), Balkan mole rat (*Spalax graecus*), Romanian hamster (*Mesocricetus newtons*) and steppe polecat (*Mustela eversmanni*) and sub-mediterranean reptiles such as lizard Dobrogea (*Podarcis bulls*), European green lizard (*Lacerta viridis*), the horned viper (*Vipera Montandon ammodytes*) and spur-thighed tortoise (*Testudo graeca*). However none of these species was observed on the Site during the field visits.
- 4.2.21. Bird species observed on the Site included magpie (*Pica pica*), hooded crow (*Corvus corone L.*), rook (*Corvus frugilegus*), sparrow (*Passer domesticus*), starling (*Sturnus vulgaris*), crested lark (*Galerida cristata*) and stork (*Ciconia ciconia*).
- 4.2.22. The Site is located outside of habitats of importance. It is noted that one of the 11 turbines is situated on arable land within the Agighiol Hills SCI which has been ploughed and cultivated. The EIA Report states that the integrity of the SCI will not be affected in any way by the wind farm construction and operation. The EIA Report further states that in response to a letter from the EPA Tulcea (No. 1244/25.03.2009) and in order to minimise potential environmental impacts, the proposed number of wind turbines was decreased by nine, from turbines which were originally proposed in the technical memorandum, to 11.
- 4.2.23. Some localised changes in habitats are anticipated as a result of excavation and foundations associated with the wind turbines and construction of the turbines. As mitigation for these habitat changes, it was recommended that appropriate soil restoration should be undertaken and vegetation replanted as soon as possible after completion of the construction works.
- 4.2.24. The Mediterranean/Black Sea Flyway is one of three Palaearctic-African flyways connecting Europe with Africa. As part of the migration route birds fly through south-eastern Europe, especially to Bulgaria and Romania. Collectively, these constitute the world's largest bird migration system. This migration route has been identified as extending from the Elbe region of Germany and ending in Hungary and the Danube Delta. The route is divided into three flyways passing through Italy, Albania and Cyprus. The main flyway dividing western Romania is a northern branch of this flyway, which passes to the north of the Carpathian mountains and joins the route in eastern Romania at the Black Sea. This flyway starts in Central Europe and south-west Russia and extends to the Bosphorus in Asia Minor. A southern branch of the flyway extends to the south of the Carpathians passing over the Banat plain in central Romania.
- 4.2.25. Impacts and mitigation measures relating to the construction and operational phases of the project are described in the EIA Report, these are summarised below:

*Construction Impacts:*

- The impact on habitats due to stripping for building foundations for turbines, platforms, access roads and dust produced by the construction work; and
- Disturbance to fauna due to noise from the construction works and physical presence of workers and machinery resulting in temporary displacement of mammals and



birds.

*Construction Mitigation:*

- Temporary storage of turbine components and construction materials on arable land so as to avoid damage to the flora of the Agighiol Hills SCI;
- Stripped topsoil will be preserved and stored in order to keep the composition and quality. This will be reused afterwards for restoration so that native vegetation can develop;
- After completion of work, the land must be cleared of any debris accumulated over time; and
- Vegetation removed from the site will be replanted at the bases of the turbines soon as possible after completion of the construction works to increase the chance of the original vegetation recovering.

*Operational Impacts:*

- Habitat severance due to the presence of tracks and roads, although these are not barriers to the movement of individuals and will not result in habitat fragmentation;
- Loss of agricultural habitat of low ecological value, due to the presence of the turbines and associated infrastructure, it is anticipated that the footprint of the turbines will be very limited and habitat loss will be localised;
- Disturbance and change flight routes used by birds although the Site is not recognised as a bird migration route;
- Injury or mortality of birds due to collisions with wind turbines or electrocution, particularly larger bird species. Collision rates vary widely between wind farms and effects on bird population dynamics are greater in species with relatively long lives and low adult mortality. The height corresponding to migration routes is a key factor with some species flying at heights much greater than the height of wind turbines. Measures to increase the visibility of wind farms can reduce the risk of collision. Research has found evidence of adaptation or habituation by some species. Current monitoring activities have not identified any issue of bird mortalities due to collision with the turbines of the Sarichioi site; and
- Wind farms may act as barriers for migratory birds, with flight or flock behaviour becoming disorganised on approach to wind farms in some instance, although evidence of species changing their trajectory and bypassing the wind farm has also been observed. Avoidance of wind farms means greater energy consumption for birds during migration or during regular daily flight.

4.2.26. Site selection is identified as the most important measure to reduce negative effects of wind farms on birds and bats. Research has shown that wind farms developed near communities result in reduced impacts on bird species. The EIA Report references recommendations by the United States Fish and Wildlife Service (2003) relating to the selection of wind farm locations, as follows:

- Avoid areas of protected animals and plants;
- Avoid areas with sensitive species of birds;
- Avoid areas with known migration routes, flight corridors, or where birds concentrate in large numbers from other reasons;
- Avoid areas known for hibernation, reproduction or migration of bats;
- Avoid areas with large numbers of birds of prey (peaks of mountains, areas with high densities of prey);
- Avoid habitat fragmentation by wind farms;
- Avoid areas with features that can attract birds and bats (ponds, edges of habitat, areas with high density of small mammals, e.g. uncultivated areas);

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- Minimise infrastructure such as roads, fences, etc. avoiding the creation and consider removing places where birds may settle; and
  - Removal of carcasses (to minimize attraction of birds of prey).

*Operational Mitigation:*

- Removal of waste which may attract rodents that are hunted by predators and encourage insects, which are attractive to insectivorous birds, increasing the risk of collision;
  - Prevention of the formation of ponds and marshes in the turbine as they attract aquatic birds;
  - Turbines must be marked at night with flashing red lights at intervals of time between two consecutive ignition, to deter birds from using the area;
  - Removal of carcasses found on site and establishment of database recording them;
  - In addition it is recommended that wind turbines stop at certain times when the risk of collision is increased, such as in periods of important flight, such as autumn or spring migration; and
  - Monitoring of bird species within the Site following an agreed methodology for at least the first year of operation of the wind farm, including monitoring of nocturnal species.
- 4.2.27. After monitoring, the EIA Report states that if it is noticed that there is risk of collision of birds it is recommended that a paddle power device is installed. This device has a camera and is able to detect presence of birds and their trajectory in order to slow the turbine blades and avoid death or injury to birds. Based on current monitoring data, this has not been identified as being required on the site.
- 4.2.28. It is concluded that the wind farm will not have a significant effect on biodiversity. The wind farm is located far away from nesting sites, feeding or known overwintering areas and therefore will not have significant effects on bird species.

Landscape and visual impacts

- 4.2.29. The wind farm is located on the land in the outskirts of the Agighiol village, the nearest residential property is more than 500m from the closest turbine.
- 4.2.30. Section 4.6 of the EIA Report identifies that the wind farm will have a positive effect on landscape and visual amenity as it will be a visual symbol of progress and potentially a tourist attraction. The EIA Report notes that the original landscape was of value but it has become degraded through farming use.

Impacts on noise

- 4.2.31. The EIA Report includes a section on noise during the construction and operational phases. During construction, the report outlines a daytime noise level of approximately 50dB(A) from excavation vehicles and 90dB(A) on site from general activities.



- 4.2.32. The report refers to the guidance within STAS 10009 / 88 by the Romanian Department of Ministry, Transport, Construction and Tourism and suggests basing a construction noise level on-site of 87dB(A), presenting a target level at nearby residential properties of 70dB(A) during daytime hours (assumed to be LAeq,T). It also outlines generic mitigation measures that will be adopted to achieve compliance, including an intention to direct excavation vehicle movements away from noise sensitive properties and monitoring activities during times of peak noise levels.
- 4.2.33. During operation, the EIA Report discusses basic aspects of acoustics and presents a noise map covering a section of the wind farm, quoting a noise target to not exceed 45dB(A) (assumed to be LAeq,T).
- 4.2.34. With the exception of one wind farm adjacent to the proposed site, all other existing operational or consented wind farms near to the Sarichioi wind farm are located to the south, south-east or east of Agighiol. There are large separation distances between all existing wind farms and the Agighiol commune (the closest settlement to the Sarichioi wind farm), which will result in a significant reduction in cumulative noise levels at the Agighiol commune. Additionally, during downwind conditions to Agighiol from the existing wind farms, Agighiol will be upwind from the Sarichioi wind farm and as such, the cumulative noise level at Agighiol from the Sarichioi wind farm would be reduced further. Due to the aforementioned effects, there is expected to be no cumulative noise impact as a result of the introduction of the proposed Sarichioi wind farm.

#### Additional Impacts

- 4.2.35. Section 4.8 of the EIA Report states that there are no archaeological, ethnic, cultural and heritage assets within the site or surrounding area. Therefore no impacts on these types of features were anticipated. An archaeological watching brief was implemented during the construction phase for the site, however, no issues were identified.

#### Summary of recommendations

- 4.2.36. The following recommendations are presented within the EIA Report:
- The tips of the blades should be painted in bright colours to avoid being hit by birds;
  - Signalling towers with a flashing red light and an extended period of time between flashes should be provided;
  - Monitoring of bird species for at least the first year of operation of the wind farm;
  - Areas of fertile affected during construction should be restored and returned to agricultural use;
  - Wastewater discharge to surrounding areas is prohibited during construction activities, composting toilets should be used;
  - It is forbidden to store materials, handling or movement vehicles on green spaces, except those required for construction;
  - In the event of accidental discharges of wastewater, oil or fuel from the equipment liaison with a specialist remediation company is recommended;
  - The layout of turbines should be arranged such that noise and vibration levels at the perimeter of the site comply with limits imposed by current standards;
  - Fire prevention measures and appropriate measures must be provided according to legal requirements and recommendations made by the equipment manufacturer; and
  - Concrete pile foundations are recommended for the wind turbines and turbines will be transported by specialized transport.

- 4.2.37. The EIA Report identifies a number of possible impacts associated with the wind farm on the environment, a summary of which are provided below.

Impacts on air

- 4.2.38. The EIA Report (Section 4.13) states that the wind farm will not contribute to greenhouse gas emissions. It is predicted that the potential impacts are likely to be related to the construction of the wind farm, with the production of dust and exhaust emissions. However, these are predicted to be temporary.

Impacts on ground and surface water

- 4.2.39. Section 4.3 of the EIA Report identifies a number of hydrological networks within 5km of the Site, these comprise: River Idrici, Vutcani River (tributary of the Elanului) and River Albesti (tributary of the Barlad). The surrounding terrain means that there is a low risk of flooding.
- 4.2.40. In relation to ground water, the Site is in an undulating area where aquifer depths are at a minimum of 20m. The natural slope of the soil allows the correct drainage of water. The depth of groundwater beneath the Site is approximately 40m below ground level.
- 4.2.41. The EIA Report (Section 4.3) states that construction works could be considered as a source of pollution to surface and ground water sources in the event of leakages or spills of construction materials. In addition, it considers the potential of the alteration to drainage routes and the creation of stagnated pools of water. However, it states that the construction impact is unlikely because of the sloping nature of the site and the use of best practice techniques.
- 4.2.42. The wind farm will not generate industrial waste water or other substances that could lead to pollution of surface waters. Domestic wastewater will be stored in a septic tank which will be emptied periodically by a contractor. Some minimal use of oils will be required during maintenance of the turbines although due to the depth to groundwater and the lack of surface waters nearby the risk of pollution of water resources is very low. Therefore, it is unlikely that the wind farm will have an impact on ground and surface water during operation.

Impacts on soils and geology

- 4.2.43. The EIA Report states that the main sub-units of relief from the Plateau Barlad which are present throughout the county, are; Central Moldovian Plateau, Tutova hills and Barlad corridor. The county is predominantly loamy formations accumulated in the north (the Moldavian Platform) and the south (in the Barlad Depression). Over the crystalline base of the platform are a number of deposits: first Devonian Silurian deposits (limestones, sandstones, clay) and Cenomanian (glauconitic sandstones, calcareous marl, limestone compact) and the foundation of the North Dobrogea Depression Barlad Triassic formations (clays and dolomite), Jurassic (clay, marl, limestone conglomerates) and cenomaniene (calcareous sandstone). Further information relating to ground and geological conditions is provided in the geotechnical report, 'Geotechnical Study – Vutcani, Vaslui wind farm' (Manoli, D. 2010).
- 4.2.44. The land has limited value (category IV) and is used for crop production, including wheat.
- 4.2.45. The EIA Report (section 4.14) states that the operation of wind turbines will not lead to

soil pollution as stored raw materials will not pose a threat to soil contamination. The volume of excavated material will be approximately 5500m<sup>3</sup> and will be used as building material or land facilities. Any changes to soil are reversible.

#### Impacts on flora and fauna

- 4.2.46. Section 4.2 of the EIA Report describes the impact of the proposed wind farm on biodiversity. Field surveys and desk based studies were undertaken to identify the habitats present on the Site and in the surrounding area, this included surveys to review the habitats in the area, the bird population, bats and other fauna.
- 4.2.47. Throughout site visits undertaken over a period of three months (March to May 2008), three species of birds were identified on the site, these were: Sparrow (*Passer Montanus*), Black crow (*Corvus Corone*) and Thrush Nightingale (*Luscinia, luscinia*). Although there were occasional sightings of hare and rodents, there was no evidence of resident animals on site. In addition, no bird nests were found on site. The site is located away from forested areas and water bodies. It is concluded that the wind farm will have no significant effect on terrestrial wildlife (including birds) and the site is not located on migration routes used by birds, although it is stated that birds can fly in large numbers beside wind turbines with no appreciable mortality.
- 4.2.48. At present the land has low biological value. There are no forests or rare / sensitive plant species found within the area. The land is currently used for crop production and is colonised by grasses and other fast growing species.
- 4.2.49. Impacts and mitigation measures relating to the construction and operational phases of the project are described in the EIA Report, these are summarised below:

#### *Construction Impacts:*

- During construction, there is potential for some temporary loss of terrestrial vegetation but the effect is limited (with the area affected being relatively small) and reversible over time without affecting the overall terrestrial habitat. In addition, the surrounding natural habitat has low biological value and is used for crop production; and
- Collisions and mortality of wild animals as a result of road traffic accidents is identified although this impact is considered to be insignificant due to the lack of large wild animals in the area and the speed of vehicles being limited by the terrain.

#### *Construction Mitigation:*

- Mitigation measures identified include development of a spill control plan, an erosion control plan and providing a local means of fire prevention and fire fighting.

#### *Operational Impacts:*

- Bird collisions and electrocution is possible, however the impact was found to be insignificant because there is a low frequency of birds within the area and the site is not located on the path of migratory birds. In addition, there were no sightings of protected bird species or large birds or prey, which have greater susceptibility to collision than smaller birds.
- Appropriate site selection is discussed as being a key factor in ensuring that the impact on biodiversity and on birds in particular, is insignificant. This includes avoidance of protected areas and adoption of the latest technology and environment-friendly materials.
- A positive impact on wildlife is identified on the basis of the wind farm preserving open spaces and habitats which would otherwise be used for agricultural purposes. However it is understood that the Vutcani site has been leased to local residents for continued agricultural use.

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*Operational Mitigation:*

- No mitigation measures are identified in relation to impacts on vegetation, animals and birds during operation as the impacts were considered to be insignificant.

Landscape and visual impacts

- 4.2.50. Section 4.4 of the EIA Report outlines the approach to landscape and visual assessment, including consideration of subjective assessments. The report highlights elements that can influence the visual perception of turbines (as being either positive or negative) and provides an overview of criteria for determining the magnitude of change.
- 4.2.51. While landscape elements in the area would be impacted in terms of their aesthetic value due to presence of wind turbines, in general, the landscape is not valuable and has been affected over time by agricultural activities.
- 4.2.52. The EIA Report provides a brief landscape and visual impact analysis, outlines general mitigation measures and provides an assessment of the impact of the visual change.
- 4.2.53. The report states that the visual impact will be positive in the long term and could be an attraction in the area and, as such, no specific mitigation measures are required.

Impacts on noise

- 4.2.54. The EIA Report includes a section on noise during the construction and operational phases. Reference is made to the standard STAS 10009 / 88 Acoustics in Buildings. Allowable Noise Limits, whereby the following ideal external noise levels are referenced:
- Parks, recreational areas and rest areas: 45dB(A);
  - Markets, shops, outdoor restaurants & industrial areas: 65dB(A); and
  - School premises, nurseries, kindergartens & playgrounds: 75dB(A).
- 4.2.55. The EIA Report presents the proposed wind turbines used as a Vestas 90, 2.0 MW and refers to sound power levels of 95.1dB(A) for a wind speed of 4 m/s at 10m height and 103.3dB(A) when running at rated power (wind speed of 10 m/s at 10m height).
- 4.2.56. It is stated that provided the wind farm is located at least 900m from the nearest village, external noise levels would be below 45dB(A) and thus compliant with the STAS 10009/88 allowable limits. It is also stated that the minimum separation distance to comply with the STAS 10009 / 88 limits is 500m.
- 4.2.57. The EIA Report chapter concludes by stating that the noise impact from the wind farm is expected to be minor, but that there are a number of advisable measures that could be adopted to minimise the noise impact, listed as follows:
- Placing turbines a sufficient distance from residential areas to minimise noise levels at receptors;
  - Implementing best practices in terms of ambient noise levels during the construction phase, i.e. managing work intervals, installing exhaust mufflers, etc.;
  - Limit the cutting / removal of vegetation around the site;
  - Maintaining turbines in good running conditions;
  - Informing potential receptors (neighbours) on the commencement of works and explain potential impacts;
  - Obtaining written agreements from potential receptors, by presenting and explaining

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the impact; and

- Adopting a procedure for prompt and efficient advertising of any potential noisy activities during the construction phase that could impact on nearby receptors.
- 4.2.58. It is also stated that noise reduction measures will be considered during the construction phase of the project in order that the noise impact is insignificant and it advises that there is no need to implement any additional mitigation measures.
- 4.2.59. There are a number of proposed or existing wind farms surrounding the Vutcani wind farm site.
- 4.2.60. All currently operational wind farms are at a sufficient distance away from the proposed wind farm such that cumulatively, there would be no increase in noise levels at surrounding receptor points from the introduction of the Vutcani wind farm. Consequently, the cumulative noise impact on existing noise levels as a result of the introduction of the Vutcani wind farm is expected to comply with STAS 1009/88 guidelines, the relevant EBRD social policies and the IFC EHS Guidelines.
- 4.2.61. There are a number of additional proposed wind farms surrounding the site that are yet to be built but have obtained building permits and/or obtained technical connection permits. It would be expected that prior to construction and operation, these would be subject to suitable environmental assessment to ensure compliance with the relevant guidelines.

#### Additional Impacts

- 4.2.62. The EIA Report (section 4.7) states that there is a museum in Vutcani village which was established in 1983. There are no other buildings or structures of potential cultural significance within 5km of the Site.
- 4.2.63. The wind farm will not affect any cultural assets or historic areas.

#### Summary of recommendations

- 4.2.64. The following recommendations are presented within the EIA Report:
- Measures to restore habitats following construction:
  - Development of a plan to control and prevent leakage of fuels and chemicals;
  - Preparation of a soil erosion control plan;
  - Providing local means of fire prevention and fighting;
  - Measures to prevent groundwater impacts: and
  - Adoption of a Waste Management Plan which is implemented during construction and operation.

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## 4.3 Other Environmental Considerations

### *Sarichioi*

#### Storage of Materials

- 4.3.1. There are no chemicals or fuels stored on the Site.

#### Other Emissions and Waste

- 4.3.2. There are no emissions to air or wastewater, other than small quantities of wastewater from the presence of security and associated facilities within the substation building.
- 4.3.3. Waste materials generated as part of the project are likely to be minimal. Waste generated during routine maintenance activities will be removed from site by the contractor and disposed of in an appropriate manner in accordance with applicable legislation.
- 4.3.4. When the turbines are decommissioned, most materials can be reused, such as steel, iron, copper, lead and aluminium.

#### Water Use

- 4.3.5. The Site does not have a mains water supply. Water requirements for the wind farm will be limited to toilets and kitchen facilities in the substation on-site. As indicated previously, bottled water will be provided for drinking and domestic water for other purposes will be provided via an underground storage tank which will be supplied by a contractor.

#### Noise Emissions

- 4.3.6. The environmental agreement for Sarichioi wind farm requires the developer to adhere to the recommendations of the EIA, which states that noise from the wind farm must satisfy the STAS 10009/88 guideline noise levels. In order to demonstrate compliance with these requirements, environmental noise monitoring at the nearest sensitive receptors is required.

#### GHG Emissions

- 4.3.7. Using EBRD's Greenhouse Gas Assessment Methodology (Version 7, 6 July 2010), an estimate of greenhouse gas savings potential for the Sarichioi wind farm has been identified, in line with the methodology where renewable energy power generation projects are assumed to displace the emissions associated with the national average grid electricity generation (2012 factor for Romania used). On this basis, 11 wind turbines in constant use with a positive annual generation of 87,000 KWh, will provide CO<sub>2</sub> emissions savings of the order of 44.51kt CO<sub>2</sub>-e/yr. This figure does not take into account emissions associated with the construction phase, other life cycle impacts and that the wind turbines will not be in constant operation throughout the year.

#### Storage of Materials

- 4.3.8. There are no chemicals or fuels stored on Site.

#### Other Emissions and Waste

- 4.3.9. There are no emissions to air or wastewater generation, other than small quantities of wastewater from facilities within the substation used by the on-site security staff.
- 4.3.10. Waste materials generated as part of the project are likely to be minimal. Any wastes generated during routine maintenance activities will be removed from site by the contractor and disposed of in an appropriate manner in accordance with applicable legislation.
- 4.3.11. An annual review of equipment and circuits will be carried out by qualified personnel; any waste liquids will be collected in sealed containers and removed from site.
- 4.3.12. When the turbines are decommissioned, most materials can be reused, such as steel, iron, copper and aluminium.

#### Water Use

- 4.3.13. The Site does not have a water supply, however,, water requirements for the wind farm will be limited to toilets and kitchen facilities in the sub-station on-site. As indicated previously, bottled water will be provided for drinking and domestic water for other purposes will be provided via an underground storage tank which will be supplied by a contractor.

#### Noise Emissions

- 4.3.14. The environmental authorisation for Vutcani wind farm requires the developer to adhere to the guideline noise levels within STAS 10009/88. In order to demonstrate compliance with these requirements, environmental noise monitoring is required.

#### GHG Emissions

- 4.3.15. Using EBRD's Greenhouse Gas Assessment Methodology (Version 7, 6 July 2010), an estimate of greenhouse gas savings potential has been provided for Vutcani, in line with the methodology where renewable energy power generation projects are assumed to displace the emissions associated with the national average grid electricity generation (2012 factor for Romania used). On this basis, 12 wind turbines in constant use with a positive annual generation of 56,000 KWh, will provide CO<sub>2</sub> emissions savings of the order of 30.96t CO<sub>2</sub>-e/yr. This does not take into account emissions associated with the construction phase and other life cycle impacts and that the wind turbines will not be in constant operation throughout the year.



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## 4.4 Permitting and Monitoring Requirements

### *Permitting and Monitoring Requirements – Sarichioi*

4.4.1. The following environmental permits, licenses and agreements are in place for the Sarichioi wind farm:

- Environmental agreement issued by Tulcea EPA (No. 2375 dated 11th August 2009) – permit for the construction of the wind farm;
- Ministry of Environment, Danube Delta Biosphere Reserve Association (ABRDD) (No. 8989/ARBDD/24.06.2009) – permit which must be obtained prior to the EPA permit;
- Romanian Civil Aviation Authority permit (No. 16773/861 dated 11.08.2009) – permit for wind farm construction, confirming no impacts on aviation;
- EcoPontica agreement (No. 152/20.12.2011) – permit which must be obtained prior to the EPA permit ;
- Notification Type B without environmental permit 7560/07.09.2009 and EPA letter 12786/22.12.2011 without environmental permit (associated with changes to the original route of the electrical connection) – EPA notification decision not to undergo full EIA for the transmission lines and connection to the national grid;
- Technical connection permits (2008 and 2011) – technical permit stating conditions for connection to the grid and the capacity of the wind farm. Must be obtained before connection contract and after building permit;
- Building permit issued by Tulcea County Council (No. 73/12168 dated 21.12.2010) - – permit for wind farm construction; and
- Environmental Authorisation issued by Tulcea EPA (No. 8372 dated 23.01.2012) – the operational permit for the wind farm stating the environmental conditions under which site may operate.

### *Permitting and Monitoring Requirements - Vutcani*

4.4.2. The following permits, licenses and agreements are in place for the Vutcani wind farm:

- Environmental agreement issued by Vaslui EPA (No. 12037 dated 12.12.2007) – permit for wind farm construction (technical fiche for unique agreement, meaning that no EIA procedure was undertaken);
- Environmental agreement for technical connection issued by Vaslui EPA (No. 19 dated 03.03.2009) - the permit for transmission lines and connection to the national grid;
- Romanian Civil Aviation Authority permit (No. 4268/276 dated 02.05.2009) – permit for wind farm construction, confirming no impacts on aviation;
- Building permit for the electrical grid connection from Vaslui County Council (No. 3720 dated 28.05.2009) - the permit for transmission lines and connection to the national grid;
- Building permit for the wind farm from Vaslui County Council (No. 2575 dated 26.03.2009) – permit for wind farm construction; and
- Environmental Authorisation issued by Vaslui EPA (No. 19 dated 03.03.2009) – the operation permit for the wind farm stating the environmental conditions under which it should operate.

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## 4.5 Health and Safety Issues

- 4.5.1. From a health and safety perspective, key considerations include the health and safety of construction personnel and operators and other personnel on site.
- 4.5.2. Since the wind farms have been constructed and are operational, this section discusses health and safety considerations related to the operational phase only.
- 4.5.3. The following discussion relates to occupational and community health and safety at both Sarichioi and Vutcani wind farms since the activities and health and safety considerations during operation are the same at each site.
- 4.5.4. A health and safety plan has been implemented for the operation of the wind farms. The health and safety plan will cover all relevant aspects to ensure compliance with health and safety legislation and international good practice relating to occupational and community health and safety and will include the following aspects:
  - Working at heights;
  - Electrical safety;
  - Emergency and evacuation procedures (e.g. in the event of a fire);
  - General health and safety measures; and
  - Access and security.
- 4.5.5. It is understood that contracts are in place for operation and maintenance of the wind farms although the health and safety elements of these contracts have not been made available for review as part of this gap analysis/compliance assessment. The exact operational provisions and procedures are not available at this stage and will be set at the time the client will be tendering for the operational contracts for the wind farms.

### *Management of Contractors Engaged in Maintenance*

- 4.5.6. EDPR's "General Contracting Conditions" are mandatory and are attached to every contract to be signed by Contractors. These include provisions relating to the occupational health and safety and employment and social obligations.
- 4.5.7. Personnel based permanently on the site will be limited to security personnel. Welfare facilities for security personnel and for use by maintenance staff will be provided within the substation building, including a small kitchen, ecological toilets (with a septic tank) and drinking water.
- 4.5.8. Maintenance of the wind turbines will be undertaken by specialist staff who are appropriately trained and authorised to access the wind turbines. Only authorised personnel will be permitted to access the internal areas of the wind turbines and the transformers within the substation.
- 4.5.9. The security and operational maintenance staff will follow EDPR's "General Contracting Conditions" and will be required to ensure that activities are undertaken in accordance with health and safety legislation, that personnel have received appropriate health and safety training and that appropriate personnel protective equipment is used.

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- 4.5.10. An occupational health and safety monitoring program will be implemented and records will be maintained of occupational accidents and near misses together with accident investigation and details of follow up measures that are taken.
- 4.5.11. It is understood that maintenance contracts are in place with Vestas and that the turbines are maintained regularly in accordance with the manufacturer's guidelines.

#### *Security Arrangements and General Public*

- 4.5.12. Appropriate community security measures will be provided at the wind farms.
- 4.5.13. There are security and warning signs in place at the entrance to the wind farms and each wind turbine is in accordance with legal requirements.
- 4.5.14. Unauthorised access to the inside of the wind turbines will be prohibited through the provision of locked doors with warning signs displayed indicating that unauthorised access is prohibited. The internal areas of the turbines can only be accessed by authorised maintenance personnel with the appropriate keys. Security personnel based on-site do not have access to these areas.
- 4.5.15. Security guards are present 24 hours per day at the main entrances to both wind farms. Although the wind farm sites are not fenced, fencing is present around key equipment (such as electrical substations), and the general public are able to access the site. This is not considered to represent an unacceptable risk.

## 4.6 Social Issues

#### *Existing Socio-Economic Conditions*

- 4.6.1. The areas in which the Projects are located differ in terms of socio-economic conditions. The Rural Localities Development Index, devised by the National Institute of Statistics and broadly used in Romania to classify localities, places Vutcani in the top percentile of the poorest localities while Sarichioi and M. Kogalniceanu are both above the average, i.e. Sarichioi is in the 7th percentile and Kogalniceanu in the 10th percentile.
- 4.6.2. There are 6 villages around the Sarichioi wind farm, grouped in two "communes" (administrative units), M. Kogalniceanu and Sarichioi, the approximate distances from the wind farms to the villages are detailed below:
- M. Kogalniceanu: ~5 km to no. 2 turbine.
  - Randunica: ~5,2 km to no. 7 turbine.
  - Agighiol: ~2,2 km to no. 5 turbine.
  - Sabangia: ~4 km to no. 11 turbine.
  - Sarichioi: ~6 km to no. 11 turbine.
  - Zebil: ~8 km to no. 11 turbine.
- 4.6.3. There are also 6 villages around Vutcani wind farm, belonging to Vutcani commune:
- Vutcani: ~0,67 km to no. 4 turbine.
  - Codreni: ~1,71 km to no. 6 turbine.
  - Idrici: ~2 km to no. 5 turbine.
  - Albesti: ~3,8 km to no. 9 turbine.
  - Barbosi: ~3,4 km to no. 8 turbine.

- Deleni: ~4,7 km to no. 9 turbine.

#### *Socio-Economic Impacts Associated with the Projects*

- 4.6.4. The EIA for Sarichioi identifies two positive social impacts, i.e. higher revenues to City Hall and involvement of local residents in the construction, maintenance and operation of the wind farm.

#### Payment of Revenues to the City Halls and Local Investment

- 4.6.5. Information on the taxes that were paid for the two wind farms for 2011 are presented in Table 4.1 below:

**Table 4.1 EDPR taxes contributions in 2011 (€K)**

No	Tax category	Beneficiary	Sarichioi	Vutcani
1	Land taxes	Local Councils	2.096	2.754
2	Wind Farm tax	Local Councils	0	0
3	Contribution to entity who issued the building permit	County Councils	21.469	0
4	Taxes for ISC	County State Inspectorate in Construction	18.116	0
5	Other land taxes	OCPI, ANIF, ANCPI	38.731	0.056

- 4.6.6. Representatives from Vutcani City Hall have indicated that the taxes collected from the wind farm makes up more than three quarters of their revenues from local taxes while in Sarichioi the more prosperous economic activity in the area leads to the tax from the wind farm comprising a far lower share of the total revenue from local taxes.

- 4.6.7. EDPR's records show that the community benefited from upgrades of the public electrical utility infrastructure, which was required in order to operate the wind farms. For the connection of Sarichioi and Vutcani wind farms to the distribution networks, EDPR has made investments in:

- Upgrading 84 km existing 110 kV high voltage lines;
- Upgrading 4 existing 110 kV electrical substations; and
- Construction of a new substation.

- 4.6.8. The total investment for electric energy upgrades was 4,037 €K.

- 4.6.9. As part of the construction phase, 17 km of new roads on the wind farm sites were built at Sarichioi and 11 km at Vutcani. These roads are open for use by local residents to access agricultural plots that they have leased from EDP.

- 4.6.10. EDPR has recently (2012) awarded a 22000 RON (5,000 euros) sponsorship grant for the Vutcani community and 44000 RON (10,000 euros) grant for M. Kogalniceanu, for the rehabilitation of two public roads, one for each locality, which have been used in the construction phase. Rehabilitation of a road in Lastuni Village and a road in Vutcani was completed in March 2012.

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- 4.6.11. In order to sustain educational activities outside the school and public awareness, brochures and presentation materials relating to the wind farms were distributed to the Local Councils of Sarichioi and Vutcani.
- 4.6.12. In 2011, EDPR contributed to local budget of the localities in order to help local community improve social, cultural or public interest services. Each Local Council was responsible for identifying and prioritising services for the local community. The Local Council of Sarichioi received 5,000 euros, while Vutcani received 2,500 euros.

#### Land Take and Land Ownership

- 4.6.13. The preferred sites for the Projects were chosen based on the findings of a wind survey program which also took into consideration existing land use issues and the proximity of designated ecological areas.
- 4.6.14. The land required for the Sarichioi and Vutcani wind farms was purchased from individual land owners. No compulsory purchase was required for the developments and there will be no loss of livelihood or attendant economic losses associated with the Projects.
- 4.6.15. No residential properties were located on the areas to be occupied by either wind farm. Therefore, no involuntary resettlement was associated with either land purchase. There was no household resettlement within the projects and no evidence of household expropriation, only land purchase by EDPR through various intermediaries. Approximately 40,000 euro compensation has been paid to landowners for each wind farm due to relocation of some land plots (with compensation awarded to owners).
- 4.6.16. There will also be no detrimental impacts on local shops, businesses or facilities as a result of the Projects.
- 4.6.17. The land within each site was formerly used for agricultural activities and the areas outside the operational footprint of the turbines and supporting infrastructure will be leased to local residents for continued agricultural use during operation of the wind farms. At the time of preparing this report four contracts had been completed for Sarichioi (two for five years in duration and two for one year) and one for Vutcani (one year in duration).
- 4.6.18. In M. Kogalniceanu and Sarichioi all the plots were purchased, except for one plot for which an underground passing usage agreement was signed. Most of the 611 land plots in Vutcani have also become the property of EDPR, exchange contracts were signed for only 6 land plots, providing the previous 4 owners with larger land plots with similar features.
- 4.6.19. No compulsory purchase was required for the developments and no economic losses for the local people were identified.
- 4.6.20. Following EDPR's purchase of the land plots the cadastral plans<sup>1</sup>, which were previously incomplete, were updated to include full topographic information relating to the sites. The land classification was formally changed from agricultural to construction use in order to obtain the building permit and allow construction to proceed (this change was made by the Urban Zone Plan and the Urban Certificate). Following completion of the wind farms the remaining land surrounding the turbines has been leased to local residents for agricultural purposes.
- 4.6.21. Table 4.2 below summarises the areas of the different elements of each wind farm.

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<sup>1</sup> Cadastral plan is the topographic representation of all the properties on a plan (location, size, area and other characteristics) based on exact site measurements.

**Table 4.2 Extent of Land Affected by each Wind Farm site**

<b>Surfaces affected by construction of the wind farms</b>	<b>Sarichioi (ha)</b>	<b>Vutcani (ha)</b>
Technological platforms	0.44	0.72
Foundation of wind turbines	0.24	0.39
Access roads	0.74	0.55
Substations	0.17	0.2
Total :	1.59	1.86

**Employment and Labour**

4.6.22. A high percentage of the employees working to provide services to EDPR come from localities where the wind farms are situated, contributing to the local economic development.

4.6.23. An estimation of the number of employees per contractor is provided in Table 4.3 below and, a summary of the number of new jobs created during the construction works is provided in Table 4.4. The wage for employees in the construction firms contracted for the developments were well above the average local wage, even in Sarichioi, which is a more affluent area compared to Vutcani.

**Table 4.3 Details of Staff Employed by Contractors involved in Construction of each Wind Farm**

<b>Component</b>	<b>Contracting Company and Number of Staff</b>			
	<b>Sarichioi WF</b>	<b>No. of Staff</b>	<b>Vutcani WF</b>	<b>No. of Staff</b>
Civil works for Wind farm	Ampel Dacia	105	GES	95
Wind turbine	Vestas	38	Vestas	38
Substation	Ampel Dacia	40	Alstom	40
High voltage line & Connection works	Energobit	35	Electromontaj	35
Power transformers	Konkar	4	Incoesa	4
Meteorological towers	Telsat	4	Telsat	4

4.6.24. During construction of the Sarichioi and Vutcani wind farms, in 2011 EDPR subcontracted works to different companies that hired personnel from local communities (Sarichioi commune, Tulcea County and Vutcani Commune, Vaslui County), as presented in following table.

**Table 4.4 Number of Jobs in the Local Communities Created in 2011**

<b>Construction activities:</b>	<b>Sarichioi</b>	<b>Vutcani</b>
Roads, platforms and foundations construction	28	18
Substation construction	4	3
High Voltage line construction	6	25
IN/OUT substations	2	-
Wind turbines installation	6	6
Total	46	52

- 4.6.25. According to evidence gathered through interviews, specialists from other areas were employed for qualified works in the construction of the Sarichioi and Vutcani wind farms also resulted in some short term indirect economic benefits including through local spending on accommodation, food and other facilities.
- 4.6.26. During the construction of Sarichioi and Vutcani wind farms, EDPR undertook a number of measures/actions in order to raise the awareness of the local community. Local meetings with City Hall were held to provide information on the constructions activities.
- 4.6.27. Only one person will be employed in monitoring the wind farms during their operation. Other sources of employment during operation of the wind farms include employees of the firms in charge of maintenance of the turbines and security companies.

#### *Stakeholder Engagement and Public Consultation*

- 4.6.28. Information regarding EDPR projects is available at City Halls headquarters. A Grievance Mechanism was implemented during the construction works at Sarichioi and Vutcani, for all employees and local inhabitants, by which complaints could be filed to the City Hall, to the Environmental Protection Agency or directly at the construction sites. No complaints were recorded during the construction works at either site.
- 4.6.29. In Sarichioi, there was a public debate on the Environmental Impact Study, with local residents attending, while in Vutcani the procedures did not require a public debate to be undertaken. However, meetings were held with representatives of the local authorities. Information on the project was available at the City Council headquarters in both locations, at the Environmental Protection Agency and in local mass-media.
- 4.6.30. A Stakeholder Engagement Plan (SEP) has been prepared for each wind farm and will be used as a framework for completing further consultation activities and project disclosure including the identification of potential stakeholders, methods used for consultation activities and the records to be kept. The SEPs live documents and updated on a regular basis.

#### Stakeholder Engagement – Sarichioi

- 4.6.31. Meetings were arranged with the following stakeholders. A brief summary of the key discussions that were held are presented below:
- Local communities (see below);
  - Tulcea Environmental Protection Agency;



- EcoPontica;
- Sarichioi City Hall; and
- Tulcea County Council.

4.6.32. In Sarichioi and M. Kogalniceanu, the Local Council was contacted regularly, providing support and information during various stages of the Project, e.g. changing the legal status of the land plots in Sarichioi. Meetings with Tulcea County Council were organised in order to obtain the construction permit. The Environmental Protection Agency was contacted in order to obtain the Environment Permit and the Environment Agreement for the development. There are no local stakeholders representing interest groups, such as NGOs or professional agricultural associations.

#### Stakeholder Engagement – Vutcani

4.6.33. Meetings were arranged with the following stakeholders. A brief summary of the key discussions that were held are presented below:

- local communities (see below);
- Vaslui Environmental Protection Agency;
- Vutcani City Hall; and
- Vaslui County Council.

4.6.34. In Vutcani, regular consultation was held the Local Council during various stages of the Project, e.g. in changing the legal status of the land plots. Meetings with Vaslui County Council were organised in order to obtain the construction permit. The Environmental Protection Agency was contacted in order to obtain the Environment Permit and the Environment Agreement for the development. There are no local stakeholders representing interest groups, such as NGOs or agricultural associations.

#### Public Consultation – Sarichioi

4.6.35. In Sarichioi, a public debate was held in the presence of the Environmental Protection Agency representatives, local officials and members of the community, as a required procedure for the issuing of the Environmental Permit. The presentation was aimed at describing the various stages of the development and the focus was placed on the environmental implications. The attendance raised questions regarding the use of the land plots surrounding the wind farm site and it was explained that no changes will occur as a result of construction and operation of the wind farm.

#### Public Consultation – Vutcani

4.6.36. In Vutcani, a public debate was not required by law provisions and thus no formal public meeting was held. The local people are aware about the project through informal networks and direct contact with the employees of the commissioned firms in the construction phase (as the verification site visit revealed) and the general perception was highly positive.

4.6.37. The SEPs produced by EDPR for each of the Sarichioi and Vutcani wind farms provide information on the approach for on-going public consultation during operation of the Projects to inform stakeholders about the Projects' activities, performance, development and investment plans and their implementation.

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#### Complaints, Incidents and Disputes

- 4.6.38. The grievance mechanism in place for the construction phases of the wind farms was typical for this type of project in the context of Romanian legal provisions, meaning that complaints could be raised to the City Councils or directly to the construction sites. The only issue that was raised by the City Councils on behalf of the local citizens, which was not foreseen in the construction plans, regarded the high level of dust during summer months in neighbouring localities as a result of transportation of construction vehicles on heavy good vehicles. The request to find a solution for this problem was raised informally to EDPR by the City Councils and a mitigation solution, i.e. watering or dampening down of the roads, was implemented by the contractors in charge of the wind farms in both localities.

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## 5 Gap Analysis and Assessment of Environmental, Health and Safety and Social Compliance

### 5.1 Introduction

- 5.1.1. From an evaluation of the available documentation including the appraisal of potential impacts during the site walkover, the key potential environmental impacts that have been identified during the construction and operational phases of the project are considered to be associated with ecology (in particular avifauna) and landscape and visual impacts. Consideration has also been given to geology and water resources, noise and vibration, air quality, archaeology and cultural heritage, waste management, access and electromagnetic interference.

### 5.2 Romanian Legislation Requirements

- 5.2.1. Projects that require an EIA in Romania are referred to the Environmental Protection Agency (EPA). The EPA was consulted as part of the application process for seeking approval to construct each wind farm.
- 5.2.2. In accordance with Romanian National Law, a screening assessment was undertaken for both sites. It was confirmed by the screening that an EIA was required for the Sarichioi site but not for the Vutcani site. However, for completeness, EIAs were undertaken for both sites in accordance with the requirements national legislation and in accordance with EIA best practice.

### 5.3 EU EIA Directive Requirements

- 5.3.1. The EIA Reports have been reviewed against the requirements of the EU EIA Directive and, where relevant, consideration has also been given to the applicable international guidance documents. The findings of this review are detailed below.

#### *Description of the Project*

- 5.3.2. In line with the EIA Directive, the EIA Reports include a description of the physical characteristics of the Projects (including technical information relating to the wind turbines and wind conditions), construction activities and likely emissions or pollutants, where appropriate.

#### *Consideration of Alternatives*

- 5.3.3. The EIA Directive 97/11/EC requires EIA reports to include an outline of the main alternatives studies and an indication of the main reasons for the preferred choice, taking into account the environmental effects and specifically, the location of ecologically designated sites.
- 5.3.4. Based on discussions with EDPR and the review of available reports, it is understood that the sites were selected after a comprehensive wind survey programme had been undertaken to identify suitable locations for wind farm developments in the two regions of Dobrogea and Moldova.
- 5.3.5. The layouts for both wind farms were developed for EDPR by a specialist consultancy,

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Wind Experts, based in Romania. The designs and choice of turbines were developed by Wind Experts and are based on optimum performance in terms of energy generation.

- 5.3.6. Section 1.4.9 of the EIA report for Sarichioi includes a discussion on the consideration of alternatives, although this is restricted to alternative methods of generating electricity, i.e. using fossil fuels, photovoltaic cells and wind turbines. The report for Vutcani explores the 'do-nothing' alternative. Neither of the EIA reports explores alternative sites for the developments.
- 5.3.7. It is understood that the Sarichioi wind farm was originally proposed to comprise 20 wind turbines but this was subsequently reduced through discussions with the Environmental Protection Agency (EPA) in Tulcea and this wind farm now contains 11 wind turbines. The primary reasons for the reduction in the number of turbines were difficulties with land ownership and that they were to be located in or close to a Natura 2000 designated area and their removal from the scheme reduced potential ecological impacts associated with the development. One of the wind turbines is located within a designated ecological site (Dealurile Agighiolului, Agighiol Hills Site of Community Importance, SCI). However, it is located on an area of arable land and consequently, the EPA concluded that the integrity of the SCI would not be affected in any way by the wind farm construction and operation and allowed construction of the turbine.
- 5.3.8. During construction of the overhead transmission lines required to serve the wind farm it was necessary to make some changes from a technical perspective and the locations of three pylons (an area of 0.1ha) were revised such that they are located on agricultural land within the Deniz Tepe Special Protection Area (SPA), together with approximately 600m of overhead transmission line. Consultation was held with Tulcea EPA, the SOR and EcoPontica regarding this change and a permit was obtained, requiring the implementation of bird monitoring and mitigation measures to deter bird species from the wind farm.
- 5.3.9. Alternative sites and layouts were considered as part of the original wind feasibility assessment undertaken by Wind Experts. Therefore, the development of the Sarichioi and Vutcani wind farms have been undertaken in accordance with EIA Directive 97/11/EC which requires EIA reports to include an outline of the main alternatives studies and an indication of the main reasons for this choice, taking into account the environmental effects.

*Description of the Environment Likely to be Affected by the Project*

- 5.3.10. Information on the current land use, cultural heritage, geological conditions and protected areas is provided in the EIA Reports. This is based on desk studies and use of available information.. A separate intrusive site investigation has been completed at each site to confirm local geological conditions. Monitoring to be undertaken during the operational phase includes avifauna and bat monitoring, searches for bird and bat carcasses and noise monitoring. In addition, EDPR have confirmed that they have appointed an Independent Ornithological Expert (IOE) for the Sarichioi Wind Farm and will appoint an IOE for the Vutcani site. The IOE will be responsible for monitoring bird movements in the area of both wind farms and applying appropriate mitigation measures as required, including a shutdown procedure for the turbines to be temporarily turned off during bird migration periods based on visual observations, should it be required, and for reducing the speed of the turbines as necessary. In addition, the marking of overhead powerlines with bird deflectors to increase visibility will also reduce the potential for bird strikes.
- 5.3.11. Bird monitoring was undertaken at the Sarichioi site during construction (between April and September, and September to December 2011). A low number of species were recorded, with the most numerous species monitored being starlings and rooks.

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Migrating flocks of European bee-eater, swallows and house martin were observed during further monitoring. Birds of prey were a constant presence but were observed in low numbers. No dead birds were recorded on the site during the monitoring. Further monitoring has been ongoing at the Sarichioi site since March 2012 when the wind farm became operational, in accordance with the EcoPontica Permit, the permit issued by the ABRDD and the Environmental Authorisation issued by Tulcea EPA for the site. This monitoring utilises observation methods undertaken by specialised personnel of SC Eco Green Consulting SRL and the monitoring results will be submitted to the local Environmental Protection Agency, SOC and Danube Delta Biosphere Reserve Association on an annual basis. In addition, video cameras have been installed in meteorological tower and substation and these are controlled from a computer installed in the substation building. Further details relating to the ecological monitoring, including the Ecological Monitoring Plan, are provided in the Supplementary Information Report.

#### *Description of the Likely Significant Effects of the Project*

- 5.3.12. The EIA Reports include a discussion of the potentially significant effects on water, air quality, soil, geology, biodiversity, landscape, social and economic conditions and cultural heritage during construction, operation and decommissioning phases. The discussion of impacts on biodiversity includes consideration of the potential effects of wind turbines on avifauna and bird migratory routes. A Construction Environmental Management Plan (CEMP) was implemented for each Project to manage environmental effects during the construction works and environmental monitoring visits were undertaken during construction, approximately every two weeks, with the site visit findings being presented in a separate report.
- 5.3.13. The Environmental Authorisations for the Projects require that that biodiversity monitoring is undertaken for five years for Sarichioi Site, and one year for Vutcani, following commissioning to quantify the impact on flora, habitats and avifauna, the results are to be submitted to the EPA every three months. EDPR has confirmed that an IOE will be appointed to undertake monitoring at the sites. Details of the proposed monitoring measures and programme are provided in the Supplementary Information Report and the Environmental and Social Action Plans (ESAPs) for each site.

#### *Description of Mitigation*

- 5.3.14. Mitigation measures to be implemented during construction, operation and decommissioning phases are discussed in outline in the EIA Reports. EDPR has confirmed that the mitigation measures required are in the process of being implemented. Mitigation measures which have been implemented to date by EDPR include installation of the artificial falcon nests, installation of flashing beacons on the turbines and painting of the turbine blades. These measures will be implanted on a phased basis as the project progresses.
- 5.3.15. Some monitoring is recommended in the EIA Reports although this relates mainly to operation of the turbines rather than environmental monitoring to determine changes in baseline conditions or to identify the effectiveness of mitigation measures which have been implemented. EDPR have confirmed that noise and ecological monitoring will also be undertaken during the operation of the sites in accordance with the requirements of their respective environmental permits and environmental monitoring plans.

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### *Non-Technical Summary*

- 5.3.16. An initial non-technical summary has been prepared for each site as part of the EIA Reports. Further to monitoring and assessments being undertaken following the preparation of the EIAs, a revised Non-Technical Summary has also been prepared for each Project as part of the gap analysis and due diligence.

## 5.4 Additional Environmental Assessment

- 5.4.1. A review of the available information relating to the project has been undertaken against Romanian legislation, EU Directives, EBRD Performance Requirements and relevant guidance documents detailed in Section 1. The gap analysis has been undertaken based on the available baseline data presented within the EIA Reports, review of survey and monitoring reports, discussions with regulatory bodies, County Councils and City Halls and completion of a verification site visit to each wind farm. The findings of the gap analysis for specific technical areas are presented below. Further details relating to effects on ecology, landscape and visual effects and cumulative impacts are provided in the Supplementary Information Report.

### *Ecology*

- 5.4.2. The following guidance has been used to assess the key potential impacts of the wind farm on biodiversity:
- Natural England Technical Information Note 51 “Bats and Onshore Wind farms”;
  - Natural England Technical Information Note 69 “Assessing the Impacts of Onshore Wind farms on Birds”;
  - EUROBATS Publication Series 3 “Guidelines for consideration of bats in wind farm projects”; and
  - EC Guidance Document “Wind energy developments and Natura 2000”.
- 5.4.3. Two key potential impacts upon biodiversity resulting from the development of the site have been identified through a combination of the verification site visit; review of published literature; and knowledge of similar schemes:
- Potential impacts to resident and migratory bird species; and
  - Potential impacts to resident and migratory bat species.
- 5.4.4. The impacts of wind farms on birds include (Natural England, 2010):
- Direct loss or deterioration of habitats;
  - Indirect habitat loss as a result of displacement by disturbance;
  - Mortality due to collisions with turbines and associated infrastructure; and
  - Increased energy expenditure due to a barrier effect of larger arrays or rows of turbines.
- 5.4.5. The impacts of wind farms on bats include (UNEP/EUROBATS, 2008):
- Damage, disturbance or destruction of foraging habitats and commuting corridors, including migration routes;
  - Damage, disturbance or destruction of roosts;
  - Increased collision risk for bats in flight; and
  - Disorientation of bats in flight through emission of ultrasound noise.
- 5.4.6. At the time of writing (July 2012) the two wind farm sites have already been constructed and are operational. Therefore the following discussion relates to

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ecological impacts during the operation of each wind farm.

#### Birds

- 5.4.7. Monitoring undertaken at the Sarichioi site has recorded birds demonstrating a variety of behavioural activities. Pelicans, birds of prey and bee-eaters were primarily using the area as a migration route. The pelicans and birds of prey have also been observed using the updrafts from the hill to gain lift and height to carry on the migration. The smaller birds such as larks and wagtails have been observed displaying and feeding at the site and were considered to be using the site as a breeding area.
- 5.4.8. The Vutcani site is located outside of flight paths of migratory birds.

#### Bats

- 5.4.9. There are no known migratory routes for bats over either site.
- 5.4.10. Due to the fact that the wind turbines are all situated on arable farmland it has been concluded that it is unlikely that any bat roosts or significant bat foraging habitat was lost during the construction phase, given that bats are known to prefer roosting in old buildings, mature trees and caves, and that their preferred foraging habitat typically consists of woodland, lakes, rivers and mature hedgerows.

#### Cumulative Effects

- 5.4.11. Consideration has been given to the potential cumulative ecological effects associated with the Sarichioi and Vutcani wind farms together with other wind farms in the local area. The findings of the assessment are summarised in Section 5.5 below and are discussed further in the Supplementary Information Report.

#### Mitigation

- 5.4.12. A number of ecological mitigation measures have been identified as requirements of the environmental permits for each wind farm. In addition some further mitigation measures have been recommended based on this gap analysis/compliance review.
- 5.4.13. Details of these mitigation measures are provided in Section 5.6 below and are discussed further in the Supplementary Information Report.

#### *Landscape and Visual Impacts*

- 5.4.14. The landscape and visual impact assessment provided in the EIA reports was limited in its methodology and scope. Given that the wind farms are now constructed and operational, a further assessment of the impacts has now been undertaken based on verification site visits and review of the photomontages and photographs presented in the Supplementary Information Report.
- 5.4.15. The findings of the assessment were that the wind farm will not affect the open and expansive nature of the landscape character of the sites due to the open character of the wind farms and their uniformity of colour and design. Therefore there will be no significant adverse effects on the landscape character beyond the local context and there will be limited visual impacts on nearby residential receptors, all of which will be localised. Visual impacts may also be perceived by the local population as positive, due to the possibility of the wind farm becoming a tourist attraction and a visual sign of



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sustainable progress.

- 5.4.16. No assessment of potential cumulative environmental effects associated with other projects in the local area (including other wind farm developments) is included in the landscape and visual impact section of the EIA Reports. Potential cumulative impacts on the local landscape character and visual amenity of an area are dependent on the topography of the area, the sensitivity of the existing landscape and the presence of visual receptors. In relation to wind farms, the movement of the operational turbines can be considered a significant impact, but this is also a matter of perception as it dependent on people's personal opinion. In addition, the setting of wind farms, often on high ground, can increase their visibility. The EIA Report notes that the area of influence of the wind farm is likely to be around 15km and therefore any wind farms further away than this are unlikely to have any cumulative effects. However, should future development be proposed closer to the site, then the potential for cumulative landscape impacts should be considered. Further information relating to the potential landscape and visual cumulative effects associated with the wind farm together with other wind farms in the local area is provided in the Supplementary Information Report.

#### Soil and Geology

- 5.4.17. The EIA Reports for both Sites included a limited amount of baseline information in relation to soil and geology. However it is considered unlikely that the wind farms will have an impact on soil conditions during operation. Any impacts which may have occurred during construction, in relation to soil and geological resources, would have been localised and temporary. During construction, control measures were put in place (i.e. diesel tankers were used to refuel excavators instead of fuels being stored on site) to minimise the risk of accidental spillage or release of hazardous materials.
- 5.4.18. It was also reported that no pollution incidents had occurred during the construction phase.
- 5.4.19. In relation to the Sarichioi Site, the wind farm will have no impact on the geological reserve at Agighiol (which is located within the Agighiol Hills SCI) due to the localised nature of ground disturbance associated with installation of the wind turbines.

#### Surface and Ground Water Resources

- 5.4.20. There are no significant water courses or water bodies close to the Sarichioi Site, the closest water feature (Lake Agighiol) being approximately 4km from the nearest turbine. No significant environmental impacts on ground conditions and water resources are anticipated as a result of the proposed wind farms.
- 5.4.21. Within a 5km radius of the Vutcani Site, there are a number of watercourses, with the closest being the River Idrici.
- 5.4.22. During operation of both wind farms, no significant environmental impacts on ground or surface water resources are anticipated. Impacts on groundwater during construction were unlikely as the depth to groundwater beneath the Sarichioi site is approximately 32m below ground level and for the Vutcani site it is approximately 40m below ground level. No waterbodies are located in or near the sites.

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## Noise and Vibration

5.4.23. The following guidance documents have been used as the basis for assessment of operational noise from the wind farms:

- EBRD Environmental and Social Policy;
- IFC Environmental, Health, and Safety Guidelines: General EHS Guidelines: Environmental;
- IFC Environmental, Health, and Safety Guidelines for Wind Energy;
- Romanian national guidance document STAS 10009/88;
- The World Health Organisation (WHO) Guidelines for Community Noise; and
- The document ETSU-R-97 The Assessment and Rating of Noise from Wind Farms published by the UK Working Group on Noise from Wind Turbines (September 2006).

5.4.24. Potential operational noise impacts comprise:

- The noise impact from the Sarichioi wind farm on the settlement of Agighiol; and
- The noise impact from the Vutcani wind farm on the settlements of Barbosi, Codreni, Gura Albesti and Vutcani.

5.4.25. The potential noise impact of the wind farms has been evaluated using a combination of available submitted data, advice within the referred guidance documents and knowledge of noise propagation associated with wind turbines and electrical substations.

5.4.26. Noise levels from both the Sarichioi and Vutcani wind farms are likely to be compliant with the absolute noise criteria outlined in the IFC, WHO and Romanian guidance documents.

5.4.27. The distance between the closest property in Agighiol and the closest wind turbine in the Sarichioi wind farm is more than 500m. The distance between the closest property in Vutcani and the closest wind turbine of the Vutcani wind farm is approximately 600m.

5.4.28. Noise levels at the closest properties of Vutcani have the potential to be marginally in excess of the ETSU-R-97 criteria.

5.4.29. The proposed turbines incorporate a variable rotor speed and blade angle function to ensure optimum RPM and pitch angle, thus minimising extraneous noise generated by off-angle prevailing wind turbulence.

5.4.30. Noise monitoring at the nearest noise-sensitive receptors of both wind farms will be undertaken in order to demonstrate compliance with the IFC General EHS Guidelines document.

5.4.31. Hearing protection is required if the wind turbine is in operation and maintenance work is required within the nacelle.

5.4.32. There is no vibration impact predicted to occur as a result of the operation of the wind farms.

5.4.33. In relation to potential cumulative impacts, the existing operational or consented wind farms near the Sarichioi wind farm are all located to the south, south-east or east of Agighiol. There are large separation distances between the existing wind farms and the Agighiol commune (the closest settlement to the Sarichioi wind farm), which will result in a significant reduction in the cumulative noise levels from the wind farms experienced in the Agighiol commune. Additionally, during downwind conditions to Agighiol from the existing wind farms, Agighiol will be upwind from the Sarichioi wind

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farm and as such, the cumulative noise level at Agighiol from the Sarichioi wind farm would be reduced further. Due to the aforementioned effects, there is expected to be no cumulative noise impact as a result of the introduction of the Sarichioi wind farm.

- 5.4.34. There are a number of proposed or existing wind farms surrounding the proposed Vutcani wind farm site.
- 5.4.35. All currently operational wind farms are at a sufficient distance away from the proposed wind farm such that cumulatively, there would be no increase in noise levels at surrounding receptor points from the introduction of the Vutcani wind farm. Consequently, the cumulative noise impact on existing noise levels as a result of the introduction of the Vutcani wind farm is expected to comply with STAS 1009/88 guidelines, the relevant EBRD social policies and the IFC EHS Guidelines.
- 5.4.36. There are some sites in the local area where building permits and/or obtained technical connection permits have been obtained for wind farms but the wind farms are yet to be built. It would be expected that prior to construction and operation, these would be subject to suitable environmental assessment to ensure compliance with the relevant guidelines including consideration of potential cumulative effects.

#### Air Quality

- 5.4.37. There is limited baseline air quality data detailed within the EIA Reports. However, due to the location of the sites and the nature of the Projects air quality there are no significant emissions to air during operation of the wind farm and no significant impacts associated with air quality are likely to occur.
- 5.4.38. During the construction of the wind farms, impacts on air quality would have been minimised where possible and any impacts from the generation of dust would have been temporary and short term. Impacts on sensitive receptors are anticipated to have been limited due to the wind farms being located more than 500m from the nearest residential areas. It is understood that some feedback was provided to Vutcani City Hall in relation to dust from the transportation of construction materials.

#### Cultural Heritage

- 5.4.39. There are no known cultural heritage features on the sites. However as a precaution archaeological surveillance contracts were in place during the construction works on each site in the event that archaeological remains were found during excavations for the foundations of the turbines and underground cabling. No remains were found on either site and therefore it was not necessary to perform an archaeological evaluation.

#### Waste Management

- 5.4.40. The wind turbines are fabricated off-site and primarily assembled on-site, as such limited amounts of waste products are generated during the construction phase. Notwithstanding this, it was reported that removal of all construction wastes from site formed part of the Principal contractor's obligations. -It was also reported that all excavated soils were temporarily stockpiled and re-used on-site after the construction of each turbine.
- 5.4.41. It is considered that limited amounts of waste will be generated during operation. However, any potential hazardous substances (i.e. transmission oils, lubricating oils arising during maintenance activities) should be disposed of appropriately in line with the relevant Romanian legislation.

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### Access

- 5.4.42. As indicated above, many of the component parts of the wind turbines are constructed off-site (i.e. wind turbine blades) and as such can cause disruption to existing communities during delivery through road closures and / or construction of new roads.
- 5.4.43. The Sarichioi wind farm is accessed via the county road DJ222 and existing roads within the area were used to transport heavy equipment and specific items, including mounting platforms for the turbine foundations. Access to the Vutcani site is via the DJ224b which connects DN28B (Barlad to Vutcani City) before entering Vutcani.
- 5.4.44. New roads were also built to provide access to each wind turbine and these remain in place for use during operation of the wind farms and will provide additional routes for use by local communities.
- 5.4.45. As indicated above, EDPR sponsored rehabilitation of a road in Lastuni village as part of the Sarichioi wind farm project and a road in Vutcani commune as part of the Vutcani wind farm project.

### Electromagnetic Interference

- 5.4.46. The siting of wind turbines may have implications for the operations of the communications, navigation and surveillance systems used for air traffic control and aircraft safety. Wind turbine siting may also have implications on flight corridors. Permits have been issued by the Romanian Civil Aviation Authority in relation to each of the wind farm sites.
- 5.4.47. Although wind farms can cause interference by reflected signals it is understood that the turbine blades are made of a mixture of fibre glass and composite materials which are partially transparent to electromagnetic waves.

### Shadow Flicker

- 5.4.48. Shadow flicker is unlikely to result in a significant adverse effect due to the wind farms being more than 500m away from the nearest residential dwellings.

### Decommissioning

- 5.4.49. Typically, the operational life of a wind turbine is about 20-25 years. Once electricity production is reduced, an assessment must be made as to when the facility will be decommissioned. Decommissioning must be outlined at the planning and design stage. Issues to be addressed include the removal of above ground structures and equipment, below structures, as well as measures for the restoration of the environment to its original state as far as practicable.
- 5.4.50. Both of the EIA Reports consider environmental impacts associated with decommissioning the wind farms.

## 5.5 Cumulative Effects

- 5.5.1. The EIA reports provide limited consideration of the potential for cumulative environmental effects arising from the proposed wind farms at Sarichioi and Vutcani together with other wind farm projects in the same geographical area. An assessment of potential cumulative effects is therefore included in the Supplementary Information Report that has been prepared to support the environmental assessment of the two projects. A summary of the conclusions of the cumulative assessment is provided

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below.

- 5.5.2. The nearest known locations of other operational wind farms in the local area (within approximately 15km) comprise the following and are shown on Figures 6 and 7 respectively, the distances of the wind farm projects from the Sarichioi and Vutcani communes are indicative. Further information on the location of the wind farm projects is provided in the Supplementary Information Report.

#### *Sarichioi*

- 5.5.1 The nearest known locations of other operational wind farms in the local area around the Sarichioi site (within approximately 15 km) comprise the following and are shown on Figure 6:
- An operational wind farm at Agighiol adjacent to the north east of the Sarichioi wind farm with a capacity of 34MW;
  - An operational wind farm at Valea Nucarilor approximately 13 km north east from Sarichioi commune with a capacity of 6.95MW. A review of available information indicates that applications for other wind farms in this area have been made (including one facility of 399MW capacity), these facilities are understood to have a connection contract and/or a technical connection permit but not to be operational at this time; and
  - An operational wind farm at Babadag approximately 12km south east of Sarichioi commune with a capacity of 8.4MW.
- 5.5.3. Applications for permits for other wind farms in the vicinity (such as at Mihail Kogalniceanu and Mihai Bravu) have been submitted but are at varying stages of the permitting process and are understood not to be operational at this time.
- 5.5.4. The first two projects identified above are located closer to the Danube Delta SCI and SPA than the Sarichioi site. The wind farm at Babadag is also located near the Danube Delta SCI and SPA which covers a substantial area and includes Babadag Lake. It is not known whether these operational wind farms are located within the protected area.
- 5.5.5. Based on the anticipated zone of influence for the Sarichioi wind farm (approximately 10 – 15km) the three wind farms listed above have been considered in respect of the potential for cumulative environmental impacts associated with the Sarichioi wind farm. Should other wind farms be constructed in the area consideration may need to be given to the potential for cumulative ecological impacts on nearby protected areas.

#### *Vutcani*

- 5.5.6. The nearest known other operational wind farms in the local area around the Vutcani site (within approximately 15 km) comprises the following and is shown on Figure 7:
- An operational wind farm at Muntenii de Jos approximately 16 km north of Vutcani commune with a capacity of 0.23MW.
- 5.5.7. Applications for permits for other wind farms in the vicinity have been submitted but are at varying stages of the permitting process and are understood not to be operational at this time. These include sites nearby at Albesti and Rosiesti which have connection contracts but where wind farms have not been constructed to date.
- 5.5.8. The Muntenii de Jos wind farm is located approximately 8km east of the Padurea Dobrina-Husi SCI. Given that this SCI is designated for its habitats rather than bird species and no direct impact on this SCI is anticipated as a result of the Muntenii de Jos wind farm and the Vutcani wind farm no cumulative effects on this designated site

are anticipated.

- 5.5.9. Should other wind farms be constructed in the area consideration may need to be given to the potential for cumulative ecological impacts on nearby protected areas.

#### Cumulative Ecological Effects

- 5.5.10. The key cumulative effects that can be associated with wind farm developments are summarised below, these are considered further in the Supplementary Information Report:

- Ecological receptors, avifauna and bats – potential for mortality due to direct collisions with or pressure changes due to turbines, disruption to migratory routes and flight pathways and barrier effects reducing available flying space; and
- Landscape and visual impacts – significant change in the landscape character of the area and views from local villages.

- 5.5.11. The main potential concern in respect of cumulative effects arising from the proposed wind farms at Sarichioi and Vutcani together with the other wind farms located approximately 10 – 15km from each site is related to ecological impacts.

- 5.5.12. There are three key potential cumulative impacts associated with the wind farm projects to be considered. Direct habitat loss, is not considered as a cumulative impact as it tends to be limited given the relatively small footprint of the turbines and supporting structures (such as electrical substations):

- Direct mortality associated with collision with and proximity to turbines/ overhead powerlines;
- Disturbance / avoidance impacts; and
- The 'barrier effect'.

- 5.5.13. The locations of the proposed wind farms have been selected to minimise impacts on migrating birds and known flight routes. There are some designated areas close to the sites, the nearest being the Agighiol Hills SCI adjacent to the Sarichioi site and Padurea Dobrina-Husi SCI approximately 2km to the east of the Vutcani site.

- 5.5.14. The Sarichioi and Vutcani wind farms are both located on intensively managed agricultural land, without waterbodies and with minimal woodland or scrub present and therefore they are unlikely to attract birds in significant numbers. Therefore, the contribution the sites would make to potential bird collision figures is unlikely to be significant.

- 5.5.15. Given the distance between each of the Sarichioi and Vutcani sites and the nearest other operational wind farms, the proposed spacing of the turbines (approximately 500m), the open topography and the lack of semi-natural habitats on the project sites, it is considered unlikely that the sites would contribute towards a significant cumulative disturbance effect or a significant cumulative barrier effect,

- 5.5.16. Should further wind farm developments be proposed in the vicinity of the Sarichioi and Vutcani sites, consideration should be given by the City Halls, the Environmental Protection Agency and the developer of the future sites to the further assessment of potential cumulative impacts on local ecology.

#### Cumulative Landscape and Visual Impacts

- 5.5.17. Potential cumulative impacts on the local landscape character and visual amenity of an area are dependent on the topography of the area, the sensitivity of the existing landscape and the presence of visual receptors. In relation to wind farms, the

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movement of the operational turbines can be considered a significant impact, but this is also a matter of perception as it is dependent on people's personal opinion. In addition, wind farms are also often located in remote rural areas away from major population centres, although their setting, often on high ground, can increase their visibility.

- 5.5.18. In the case of the Vutcani site, the nearest operational wind farms at present are a considerable distance away at approximately 10-11km, however, should future wind farm development be proposed closer to the sites, then the potential for cumulative landscape impacts should be considered.

## 5.6 Summary of Mitigation

- 5.6.1. The key findings in terms of the operational phase impacts and mitigation for each wind farm site are summarised in Tables 5.1 and 5.2 below. The construction phase has not been considered within the table as the Projects are operational.



**Table 5.1: Summary of Impacts and Mitigation – Sarichioi**

Resource	Mitigation
Ecology	<p>The operation of the wind farms will be monitored and controlled remotely using specialised telecommunications equipment and radio or through observations by employees.</p> <p>The mitigation for the site will include managing the habitat at the site as low intensity farming and/or grassland. This will limit the habitats' suitability to certain species and reduce the attractiveness of the site to species that may be vulnerable to turbine collisions.</p> <p>Mitigation measures, including those agreed between EDPR, SOR, ABRDD and EcoPontica and those set out in the Environmental Authorisation for the site, which will be implemented include the following:</p> <ul style="list-style-type: none"> <li>- Marking lines with visual signalling devices to make the power lines more visible to birds and reduce collision potential;</li> <li>- Placing artificial nests platforms for Saker falcon on each pole and near high voltage powerlines inside the protected area to enhance the nesting opportunities for this species; and</li> <li>- Carrying out bird monitoring for a period of 5 years.</li> </ul> <p>Vantage point and mortality surveys for birds and bats. EDPR have appointed an independent ornithological Expert (IOE) to carry out the bird surveys. The IOE is responsible for undertaking surveys and monitoring bird movements in the immediate area and instigating appropriate mitigation measures as required.</p> <p>The IOE is also responsible for implementing a shutdown procedure based on visual observations. At certain times of the year during spring and autumn migration periods in particular the rotor speed of the turbines could be reduced and/or they could temporarily be turned-off during bird migration periods, should it be required.</p> <p>Monitoring will be undertaken weekly, and during spring (March-May) and autumn migration (August-October) the monitoring frequency should increase to three shifts per week. Initial monitoring will take less than one year (with certain species it is necessary that the monitoring program be designed for two years) and a management plan prepared afterwards.</p> <p>A Collision Risk Assessment will be completed within two years of the Sarichioi wind farm becoming operational. The results of the assessment will be made available to the Lenders, regulators, local community and published on the website. The results of the Collision Risk Assessment will be used to further define site specific mitigation measures which will be included within the Ecological Monitoring Plan for the site.</p>
Landscape and Visual Impacts	No mitigation required as effects were considered to be positive.
Geology and Water Resources	No issues. No mitigation required.
Noise & Vibration	<p>Noise level monitoring at nearest noise-sensitive receptors is required to demonstrate compliance with IFC EHS Guidelines.</p> <p>Hearing protection should be provided for work required within the nacelle if the wind turbine is in operation.</p>
Air Quality	No issues. No mitigation required.
Cultural Heritage	No issues. No mitigation required.

Resource	Mitigation
Waste Management	Disposal of any hazardous substances in accordance with Romanian legislation. Development and implementation of a waste management plan for the operational phase.
Electromagnetic Interference	No issues. No mitigation required.
Access	No issues. No mitigation required.
Shadow Flicker	No issues. No mitigation required.
Decommissioning	Preparation of a decommissioning plan.
Cumulative Effects	Should further wind farm developments be proposed in the vicinity of the Sarichioi site, consideration should be given by the City Halls, the Environmental Protection Agency and the developer of the future sites to the further assessment of potential cumulative impacts on local ecology and the potential for cumulative landscape impacts.

**Table 5.2: Summary of Impacts and Mitigation – Vutcani**

Resource	Mitigation
Ecology	<p>Biodiversity monitoring is required to be undertaken for the first 12 months of operation of the wind farm and the results submitted to the Vaslui EPA.</p> <p>Focused mitigation and monitoring measures will be implemented to confirm the findings of the Vutcani EIA Report.</p> <p>The mitigation for the site will include managing the habitat at the site as grassland. This would limit the habitats' suitability to certain species and reduce the attractiveness of the site to species that may be vulnerable to turbine collisions.</p> <p>Specially designed nest boxes for birds will be installed in appropriate locations on the poles along the overhead power line grid connection.</p> <p>It is recommended that ecological monitoring activities will take place and be focused on performing vantage point and mortality bird and bat surveys. , the frequency of the surveys, seasons in which they are to be carried out and the methods used will be in accordance with the Ecological Monitoring Plan that has been agreed for the sites.</p> <p>EDP will appoint an IOE to carry out the bird and bat surveys.. The IOE will be responsible for undertaking surveys and monitoring bird movements in the immediate area and instigating appropriate mitigation measures as required.</p> <p>The IOE will also be responsible for implementing a shutdown procedure based on visual observations. At certain times of the year during spring and autumn migration periods in particular the rotor speed of the turbines could be reduced and/or they could temporarily turned-off during bird migration periods, should it be required.</p> <p>A Collision Risk Assessment will be completed within two years of the Vutcani wind farm becoming operational. The results of the assessment will be made available to the Lenders, regulators, local community and published on the website. The results of the Collision Risk Assessment will be used to further define site specific mitigation measures which will be included within the Environmental and Social Action Plan for the site.</p>

Resource	Mitigation
Landscape and Visual Impacts	No mitigation required as effects were considered to be positive.
Geology and Water Resources	No issues. No mitigation required.
Noise & Vibration	Noise level monitoring at nearest noise-sensitive receptors is required to demonstrate compliance with IFC EHS Guidelines. Hearing protection should be provided for work required within the nacelle if the wind turbine is in operation.
Air Quality	No issues. No mitigation required.
Cultural Heritage	No issues. No mitigation required.
Waste Management	Disposal of any hazardous substances in accordance with Romanian legislation. Development and implementation of a waste management plan for the operational phase.
Electromagnetic Interference	No issues. No mitigation required.
Access	No issues. No mitigation required.
Shadow Flicker	No issues. No mitigation required.
Decommissioning	Preparation of a decommissioning plan.
Cumulative Effects	Should further wind farm developments be proposed in the vicinity of the Vutcani site, consideration should be given by the City Halls, the Environmental Protection Agency and the developer of the future sites to the further assessment of potential cumulative impacts on local ecology and the potential for cumulative landscape impacts.

## 5.7 EBRD Compliance Assessment

- 5.7.1. A review of the project has also been undertaken to determine the applicability of EBRD's Performance Requirements (PRs) to this project. All PRs are considered to be applicable with the exception of PR 7: Indigenous People and PR 9: Financial Intermediaries.
- 5.7.2. A detailed assessment and summary of compliance against the PR requirements for each site is provided in Tables 5.3 and 5.4 that follow.

**Table 5.3: Compliance of the Wind Farm Scheme with EBRD Performance Requirements - Sarichioi**

EBRD Performance Requirements	Key requirements	Summary of Findings
PR 1: Environmental and Social Appraisal and Management	<p>To identify and assess environmental and social impacts and issues, both adverse and beneficial, associated with the project.</p> <p>To adopt measures to avoid, or where avoidance is not possible, minimize, mitigate, or offset/ compensate for adverse impacts on workers, affected communities, and the environment.</p> <p>To identify and, where feasible, adopt opportunities to improve environmental and social performance.</p> <p>To promote improved environmental and social performance through a dynamic process of performance monitoring and evaluation.</p>	<p>The key benefit of this project is the use of reliable renewable wind power technology which will achieve significant greenhouse gas emissions (GHG) savings as opposed to the use of power generation plant using fossil fuels. The project has provided benefits in terms of local employment. Potential impacts both negative and positive are discussed in this report.</p> <p>A review of environmental and social impacts has been undertaken to identify both adverse and beneficial impacts. From an environmental perspective, there are not considered to be any major adverse impacts relating to Landscape &amp; Visual, Geology and Water Resources, Air Quality, Cultural Heritage, Noise and Vibration and others considerations such as Electromagnetic Interference and Access and Shadow Flicker issues. However there are areas for monitoring and /or potentially improvement that should be considered that include protection of ecology, specifically migratory birds, development of a waste management plan, noise monitoring, the development of a decommissioning plan.</p> <p>No major social impacts have also been identified. However, the wind farm has recently become operational and some of the site-specific health and safety policies and procedures in place require completion. Site-specific social, labour, environmental protection and health and safety policies and procedures will be further developed. EDPR is working towards OHSAS 18001:2008 accreditation.</p> <p>The necessary permits have been obtained and the wind farm is operational. Monitoring is required as part of the Environmental Agreement and other monitoring has been agreed between EDPR, the SOR, the ABRDD and EcoPontica and will be implemented as part of an Ecological Monitoring Plan in order to provide additional mitigation to bird species due to the proximity of the wind farm to a protected area.</p>
PR 2: Labour and Working Conditions	Management of worker relationship; working conditions and terms of employment; retrenchment; grievance	The wages for the employees of the contractor firms involved in developing the wind farms were high according to Romanian standards. In Sarichioi, local businesses are well developed, with other major investors present and several small and medium investors active,

EBRD Performance Requirements	Key requirements	Summary of Findings
	mechanism; non-employee workers; supply chain.	<p>and several types of income sources, agriculture, fishing and cement industry. Thus, employment associated with construction of the wind farm added an earning opportunity to the existing opportunities.</p> <p>EDPR is working towards OHSAS 18001:2008 accreditation. At the time of preparing this report the health and safety and emergency situation documents have been prepared according to legal requirements but are not complete.</p>
PR 3: Pollution Prevention and Abatement	Pollution prevention, resource conservation and energy efficiency; wastes; safe use and management of hazardous substances and materials; emergency preparedness and response; Industrial production; ambient conditions; greenhouse gas emissions; pesticide use and management.	<p>There are no major pollution risks that have been identified. However there are areas for monitoring and /or potentially improvement that will be considered that include the development of a waste management plan and noise monitoring to verify that noise levels are acceptable at sensitive receptors i.e. nearby residential properties. Given the distances to the nearest residential areas, noise and vibration impacts are considered unlikely to be a significant concern.</p> <p>It has been estimated that there will be greenhouse gas savings potential of up to 44.51kt CO<sub>2</sub>-e/yr from the wind farm savings as opposed to the use of power generation plant using fossil fuels.</p> <p>An area for improvement that has been identified is the development of a decommission plan.</p>
PR 4: Community Health, Safety and Security	Community health and safety requirements; security personnel requirements.	<p>Each wind farm has a first aid kit. EDPR need to ensure, through contracts to the companies performing operation and maintenance of the wind farm, that contractors appoint personal to be in charge of administering first aid and ensure they are appropriately trained.</p> <p>EDPR is working towards OHSAS 18001:2008 accreditation.</p> <p>The wind farm is provided with 24 hour security.</p>
PR5: Land acquisition, involuntary resettlement and	General requirements; Resettlement Action Plan (RAP); Livelihood restoration framework; compensation and benefits for	The land required for the Sarichioi wind farm has been purchased from individual land owners by EDPR and the areas outside the operational footprint of the turbines and supporting infrastructure will be leased to local residents for continued agricultural use

EBRD Performance Requirements	Key requirements	Summary of Findings
economic displacement	displaced persons; displacement; loss of public amenities; private sector responsibilities under government-managed resettlement.	<p>during operation of the wind farm.</p> <p>No compulsory purchase was required for the development and there will be no loss of livelihood or attendant economic losses associated with the Project. No residential properties were located on the areas to be occupied by the wind farm and therefore no involuntary resettlement was associated with the land purchase.</p>
PR6: Biodiversity conservation and sustainable management of living natural resources	Appraisal of issues and impacts; habitat protection and conservation; sustainable management and use of living resources; biodiversity and tourism.	<p>The Sarichioi wind farm is located adjacent to a SCI and one of the turbines is located on agricultural land within the SCI. This has been discussed with Tulcea EPA and the Danube Delta Biosphere Associated (ABRDD) and permit conditions have been specified, including quarterly monitoring of bird activity, which are being implemented. In addition approximately 600m of overhead transmission lines and three pylons are located within the Deniz Tepe SPA. This has been discussed with Tulcea EPA, SOR, the ABRDD and EcoPontica and appropriate mitigation measures are being implemented as a result.</p> <p>There is the potential for migratory birds to collide with wind turbines and therefore an ecological monitoring plan has been implemented to assess the impacts to birds and bats that may be occurring during the operational phase of the wind farm. The results of the monitoring will inform the need for additional mitigation measures.</p> <p>EDPR have appointed an independent ornithological Expert (IOE) to carry out the bird surveys. The IOE is responsible for undertaking surveys and monitoring bird movements in the immediate area and instigating appropriate mitigation measures as required.</p> <p>The IOE will also be responsible for implementing a shutdown procedure based on visual observations. At certain times of the year during spring and autumn migration periods in particular the rotor speed of the turbines could be reduced and/or they could temporarily turned-off during bird migration periods, should it be required.</p>
PR7: Indigenous people	Assessment; avoidance of adverse effects; Preparation of an indigenous development plan; information disclosure,	<p>There are no indigenous people located in the area of the wind farm which should be considered.</p> <p>The Stakeholder Engagement Plan (SEP) prepared by EDPR for this wind farm includes a</p>

EBRD Performance Requirements	Key requirements	Summary of Findings
	meaningful consultation and informed participation; grievance mechanism and prevention of ethnically based discrimination; compensation and benefit sharing.	grievance mechanism.
PR8: Cultural heritage	Appraisal; managing impacts on cultural heritage; chance find procedures; consultation with affected communities; project's use of cultural heritage.	No cultural heritage sites are located on or close to the site.
PR9: Financial intermediaries	Environmental and social due diligence and monitoring procedures; requirements for sub projects; organisational capacity within the FI; stakeholder engagement.	Not applicable.
PR10: Information disclosure and stakeholder engagement	<p>To identify people or communities that are or could be affected by the project, as well as other interested parties.</p> <p>To ensure that such stakeholders are appropriately engaged on environmental and social issues that could potentially affect them through a process of information disclosure and meaningful consultation.</p> <p>To maintain a constructive relationship with stakeholders on an on-going basis through meaningful engagement during project implementation.</p>	Information Disclosure & Stakeholder Engagement is covered in the Stakeholder Engagement Plan (SEP), a separate report prepared by EDPR. The SEP identifies stakeholders and describes communication and consultation strategies. In addition a Non-Technical Summary report has been prepared for public disclosure.



**Table 5.4 Compliance of the Wind Farm Scheme with EBRD Performance Requirements - Vutcani**

EBRD Performance Requirements	Key requirements	Summary of Findings
PR 1: Environmental and Social Appraisal and Management	<p>To identify and assess environmental and social impacts and issues, both adverse and beneficial, associated with the project.</p> <p>To adopt measures to avoid, or where avoidance is not possible, minimize, mitigate, or offset/ compensate for adverse impacts on workers, affected communities, and the environment.</p> <p>To identify and, where feasible, adopt opportunities to improve environmental and social performance.</p> <p>To promote improved environmental and social performance through a dynamic process of performance monitoring and evaluation.</p>	<p>The key benefit of this project is the use of reliable renewable wind power technology which will achieve significant greenhouse gas emissions (GHG) savings as opposed to the use of power generation plant using fossil fuels. The project has provided benefits in terms of local employment. Potential impacts both negative and positive are discussed in this report.</p> <p>A review of environmental and social impacts has been undertaken to identify both adverse and beneficial impacts. From an environmental perspective, there are not considered to be any major adverse impacts relating to Landscape &amp; Visual, Geology and Water Resources, Air Quality, Cultural Heritage, Noise and Vibration and others considerations such as Electromagnetic Interference and Access and Shadow Flicker issues. However there are further areas for monitoring and /or potentially improvement that will be considered that include protection of ecology, specifically migratory birds, development of a waste management plan, noise monitoring, the development of a decommissioning plan.</p> <p>No major social impacts have also been identified. However, the wind farm has recently become operational and some of the site-specific health and safety policies and procedures in place require completion. Site-specific social, labour, environmental protection and health and safety policies and procedures will be further developed. EDPR is working towards OHSAS 18001:2008 accreditation.</p> <p>The necessary permits have been obtained and the wind farm is operational. Site-specific bird surveys will be undertaken in accordance with the Environmental Monitoring Plan for the site.</p>
PR 2: Labour and Working Conditions	Management of worker relationship; working conditions and terms of employment; retrenchment; grievance mechanism; non-employee workers;	<p>The wages for the employees of the constructor firms are high according to Romanian standards. The wind farm contractor was the only important employer in the area at the time of the construction works.</p> <p>EDPR is working towards OHSAS 18001:2008 accreditation. At the time of preparing this</p>

EBRD Performance Requirements	Key requirements	Summary of Findings
	supply chain.	report the health and safety and emergency situation documents have been prepared according to legal requirements but are not complete.
PR 3: Pollution Prevention and Abatement	Pollution prevention, resource conservation and energy efficiency; wastes; safe use and management of hazardous substances and materials; emergency preparedness and response; Industrial production; ambient conditions; greenhouse gas emissions; pesticide use and management.	<p>There are no major pollution risks that have been identified. However there are further areas for monitoring and /or potentially improvement that will be considered that include the development of a waste management plan and noise monitoring to verify that noise levels are acceptable at sensitive receptors i.e. nearby residential properties. Given the distances to the nearest residential areas, noise and vibration impacts are considered unlikely to be a significant concern.</p> <p>It has been estimated that there will be greenhouse gas savings potential of up to 30.96t CO<sub>2</sub>-e/yr from the wind farm savings as opposed to the use of power generation plant using fossil fuels.</p> <p>An area for improvement that has been identified is the development of a decommission plan.</p>
PR 4: Community Health, Safety and Security	Community health and safety requirements; security personnel requirements.	<p>Each wind farm has first aid kit. EDPR need to ensure, through contracts to the companies performing operation and maintenance of the wind farm, that contractors appoint personal to be in charge of administering first aid and ensure they are appropriately trained.</p> <p>As indicated above EDPR is working towards OHSAS 18001:2008 accreditation.</p> <p>The wind farm is provided with 24 hour security.</p>
PR5: Land acquisition, involuntary resettlement and economic displacement	General requirements; Resettlement Action Plan (RAP); Livelihood restoration framework; compensation and benefits for displaced persons; displacement; loss of public amenities; private sector responsibilities under government-managed resettlement.	<p>The land required for the Sarichioi wind farm has been purchased from individual land owners by EDPR and the areas outside the operational footprint of the turbines and supporting infrastructure will be leased to local residents for continued agricultural use during operation of the wind farm.</p> <p>No compulsory purchase was required for the development and there will be no loss of livelihood or attendant economic losses associated with the Project. No residential properties were located on the areas to be occupied by the wind farm and therefore no involun-</p>

EBRD Performance Requirements	Key requirements	Summary of Findings
		tary resettlement was associated with the land purchase.
PR6: Biodiversity conservation and sustainable management of living natural resources	Appraisal of issues and impacts; habitat protection and conservation; sustainable management and use of living resources; biodiversity and tourism.	<p>The Vutcani wind farm is located approximately 5km from the nearest protected area and is not situated on or near a known bird migratory route.</p> <p>However there is the potential for migratory birds to collide with wind turbines and therefore it has been recommended that a monitoring programme is implemented to assess the impacts to birds and bats that may be occurring during the operational phase of the wind farm. The results of the monitoring will inform the need for additional mitigation measures.</p> <p>EDP will appoint an IOE to carry out the bird and bat surveys.. The IOE will be responsible for undertaking surveys and monitoring bird movements in the immediate area and instigating appropriate mitigation measures as required.</p> <p>The IOE will also be responsible for implementing a shutdown procedure based on visual observations. At certain times of the year during spring and autumn migration periods in particular the rotor speed of the turbines could be reduced and/or they could temporarily turned-off during bird migration periods, should it be required.</p>
PR7: Indigenous people	Assessment; avoidance of adverse effects; Preparation of an indigenous development plan; information disclosure, meaningful consultation and informed participation; grievance mechanism and prevention of ethnically based discrimination; compensation and benefit sharing.	<p>There are no indigenous people located in the area of the wind farm which should be considered.</p> <p>The Stakeholder Engagement Plan (SEP) prepared by EDPR for this wind farm includes a grievance mechanism.</p>
PR8: Cultural heritage	Appraisal; managing impacts on cultural heritage; chance find procedures; consultation with affected communities; project's use of cultural heritage.	No cultural heritage sites are located on or within close to the site.

EBRD Performance Requirements	Key requirements	Summary of Findings
PR9: Financial intermediaries	Environmental and social due diligence and monitoring procedures; requirements for sub projects; organisational capacity within the FI; stakeholder engagement.	Not applicable.
PR10: Information disclosure and stakeholder engagement	<p>To identify people or communities that are or could be affected by the project, as well as other interested parties.</p> <p>To ensure that such stakeholders are appropriately engaged on environmental and social issues that could potentially affect them through a process of information disclosure and meaningful consultation.</p> <p>To maintain a constructive relationship with stakeholders on an on-going basis through meaningful engagement during project implementation.</p>	Information Disclosure & Stakeholder Engagement is covered in the SEP, a separate report prepared by EDPR. The SEP identifies stakeholders and describes communication and consultation strategies. In addition a Non-Technical Summary report has been prepared for public disclosure.

## 5.8 Compliance Assessment – Other Requirements

5.8.1. A review of the project has also been undertaken to determine compliance against the following:

- The Equator Principles;
- EBRD Environmental and Social Policy;
- EBRD Public Information Policy;
- EBRD Performance Requirements;
- IFC Environmental, Health and Safety (EHS) Guidelines (including in respect of Wind Energy projects);
- Romanian legislation and EU directives relating to EIA; and
- International best practice (such as IFC EHS Guidelines on wind farm projects, draft EU Guidelines for wind farm development and Natural England technical information notes).

5.8.2. The results of the review are presented within a series of compliance matrices provided as Appendix B and are summarised below. The matrices presented in Appendix B are as follows, separate matrices are provided for each of the two sites:

- Table 1 Equator Principles;
- Table 2 IFC EHS Guidelines for Wind Energy and IFC General EHS Guidelines;
- Table 3 EU EIA Directive and Romanian EIA Legislation Requirements; and
- A Summary Compliance Table covering both sites is also provided in below.

5.8.3. A summary of the findings of the review undertaken as part of this Compliance Assessment / Gap Analysis is provided in Table 5.1 below. The findings are similar for each wind farm project and are therefore combined in the following table. The table is colour coded as follows to indicate the compliance status.

Key to compliance status in following table:

Significant non-compliance / significant risk of breach of EBRD / IFC requirements or EU or national legislation
Potential non-compliance / potential risk of breach of EBRD / IFC requirements or EU or national legislation
In compliance although some further information required
In compliance no further information or studies required
Compliance status undefined at this stage, further information required

**Table 5.1 Summary of Compliance – Sarichioi and Vutcani Wind Farms**

<b>Legislative or Regulatory Requirement</b>	<b>Compliance Status<sup>1</sup></b>	<b>Reference / Source</b>	<b>Compliance Assessment/Gap Analysis</b>	<b>Key Recommendation</b>
Romanian Legislation on Health and Safety		<ul style="list-style-type: none"> <li>Review of documentation available at the sites (including Health and Safety Plans for construction works and operational stage)</li> </ul>	<p>A health and safety co-ordinator has been appointed for the sites during construction period.</p> <p>EDPR has in Plan to hire in the following months a H&amp;S Coordinator for all wind farms that are currently operated in Romania.</p> <p>A Health and Safety Plan has been developed for the operational stage and is being completed (wind turbines and substations operation and Maintenance)</p> <p>At the time of this audit health and safety and emergency documents have been prepared according to legal requirements but are not currently complete.</p>	<p>Operational health and safety and emergency documents for the wind farms should be completed and fully implemented</p> <p>EDPR is working toward OHSAS 18001:2008 accreditation and this should be progressed</p>

Legislative or Regulatory Requirement	Compliance Status <sup>1</sup>	Reference / Source	Compliance Assessment/Gap Analysis	Key Recommendation
Other EU Directives and other Romanian Legislation		<ul style="list-style-type: none"> <li>Interviews with EDPR, City Halls and County Councils, EPA</li> <li>Review of documentation available at the sites (including Health and Safety Plans for construction works and operational stage)</li> <li>Review of documentation including EIA Reports, Environmental Permits and Monitoring Plans</li> </ul>	The Projects obtained Building Permits and other approvals required prior to commencement of construction and are now operational	No further recommendations are proposed



Legislative or Regulatory Requirement	Compliance Status <sup>1</sup>	Reference / Source	Compliance Assessment/Gap Analysis	Key Recommendation
EU EIA Directive and Romanian EIA Legislation		<ul style="list-style-type: none"> <li>Review of documentation including EIA Reports, Environmental Permits and Monitoring Plans</li> <li>Interviews and meetings with key members of the project team, regulatory authorities and SOR</li> <li>Consultation with SOR and the Bat Protection Society for Romania (data requests are awaited at the time of compiling this report)</li> </ul>	<p>The EIA Report for Sarichioi obtained approval from the Tulcea EPA (a statutory EIA Report was not required for the Vutcani site)</p> <p>No site-specific survey data is provided within the EIA Reports</p> <p>Insufficient information is provided in respect of landscape and visual impacts and ecological impacts</p> <p>Details of assessment methodology are not provided within the EIA Reports</p> <p>No assessment of potential cumulative effects associated with other wind farm projects is included in the EIA Reports</p> <p>The Non-Technical Summary included in the EIA Reports is incomplete and is not easily understood</p>	<p>Additional information (relating to landscape and visual and ecological impacts and potential cumulative impacts) has been provided in the Supplementary Information Report</p> <p>A Non-Technical Summary of each Project has been produced</p>

Legislative or Regulatory Requirement	Compliance Status <sup>1</sup>	Reference / Source	Compliance Assessment/Gap Analysis	Key Recommendation
IFC EHS Guidelines for Wind Energy and IFC General EHS Guidelines		<ul style="list-style-type: none"> <li>Interviews with EDPR</li> <li>Review of documentation available at the sites (including Health and Safety Plans for construction works and operational stage)</li> <li>Review of documentation including EIA Reports, Environmental Permits and Monitoring Plans</li> </ul>	<p>A health and safety co-ordinator has been appointed for the sites during construction period.</p> <p>EDPR has in Plan to hire in the following months a H&amp;S Coordinator for all wind farms that are currently operated in Romania.</p> <p>An independent environmental expert will be employed by EDPR to monitoring compliance with respect to environmental matters during operation</p> <p>A Health and Safety Plan has been developed for the operational stage and will be completed.</p>	<p>Implementation of the Stakeholder Engagement Plan (SEP) and Environmental and Social Action Plan (ESAP)</p> <p>On-going consultation with local communities as detailed in the SEP and ESAP</p> <p>Further information (relating to landscape and visual and ecological impacts and potential cumulative impacts) has been provided in the Supplementary Information Report and this has been made available to the public</p>

Legislative or Regulatory Requirement	Compliance Status <sup>1</sup>	Reference / Source	Compliance Assessment/Gap Analysis	Key Recommendation
EBRD Performance Requirements		<ul style="list-style-type: none"> <li>Interviews with EDPR</li> <li>Review of documentation including EIA Reports, Environmental Permits and Monitoring Plans</li> </ul>	An independent environmental expert will be employed by EDPR to monitoring compliance with respect to environmental matters during operation.	<p>EDPR is working toward OHSAS 18001:2008 accreditation and this should be progressed</p> <p>Implementation of the SEP and ESAP</p> <p>On-going consultation with local communities as detailed in the SEP and ESAP</p> <p>Further information (relating to landscape and visual and ecological impacts and potential cumulative impacts) has been provided in the Supplementary Information Report which has been made available to the public</p>
Equator Principles		<ul style="list-style-type: none"> <li>Interviews with EDPR and contractors involved in construction works</li> <li>Review of documentation including EIA Reports, Public Debate Reports, Environmental Permits and Monitoring Plans</li> </ul>	An independent environmental expert will be employed by EDPR to monitoring compliance with respect to environmental matters during construction and operation	<p>Implementation of the SEP and ESAP</p> <p>Further consultation with local communities as detailed in the SEP and ESAP</p> <p>Further information (relating to landscape and visual and ecological impacts and potential cumulative impacts) has been provided in the Supplementary Information Report which has been disclosed to the public</p>

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## 6 Conclusions and Recommendations

### 6.1 Overall Conclusions

- 6.1.1. The key benefit of this project is the use of reliable renewable wind power technology which will achieve significant greenhouse gas emissions (GHG) savings as opposed to the use of power generation plant using fossil fuels.
- 6.1.2. The Environmental and Social Due Diligence undertaken identified a number of potential environmental and social impacts that could result from the project. Mitigation measures have been recommended. The recommendations proposed are based on our current understanding of the project in light of the EBRD's Performance Requirements, applicable EU standards and best practice.

### 6.2 Environmental and Social Action Plan

- 6.2.1. The recommendations are provided in the Environmental and Social Action Plan (ESAP) for each site which has been developed to set out specific environmental and social actions required to minimise impacts during both the construction and operational phases of the wind farm scheme. The ESAP also identifies the investment / resource needs and the target date for implementation. In some cases, the investment costs of these actions are based on initial review actions and not the follow on implementation action cost. Target and evaluation criteria are also provided to ensure successful implementation for monitoring by EBRD. Reference standards are provided based on EBRD performance standards, Romanian legislative requirements, EU legislative requirements or best practice.

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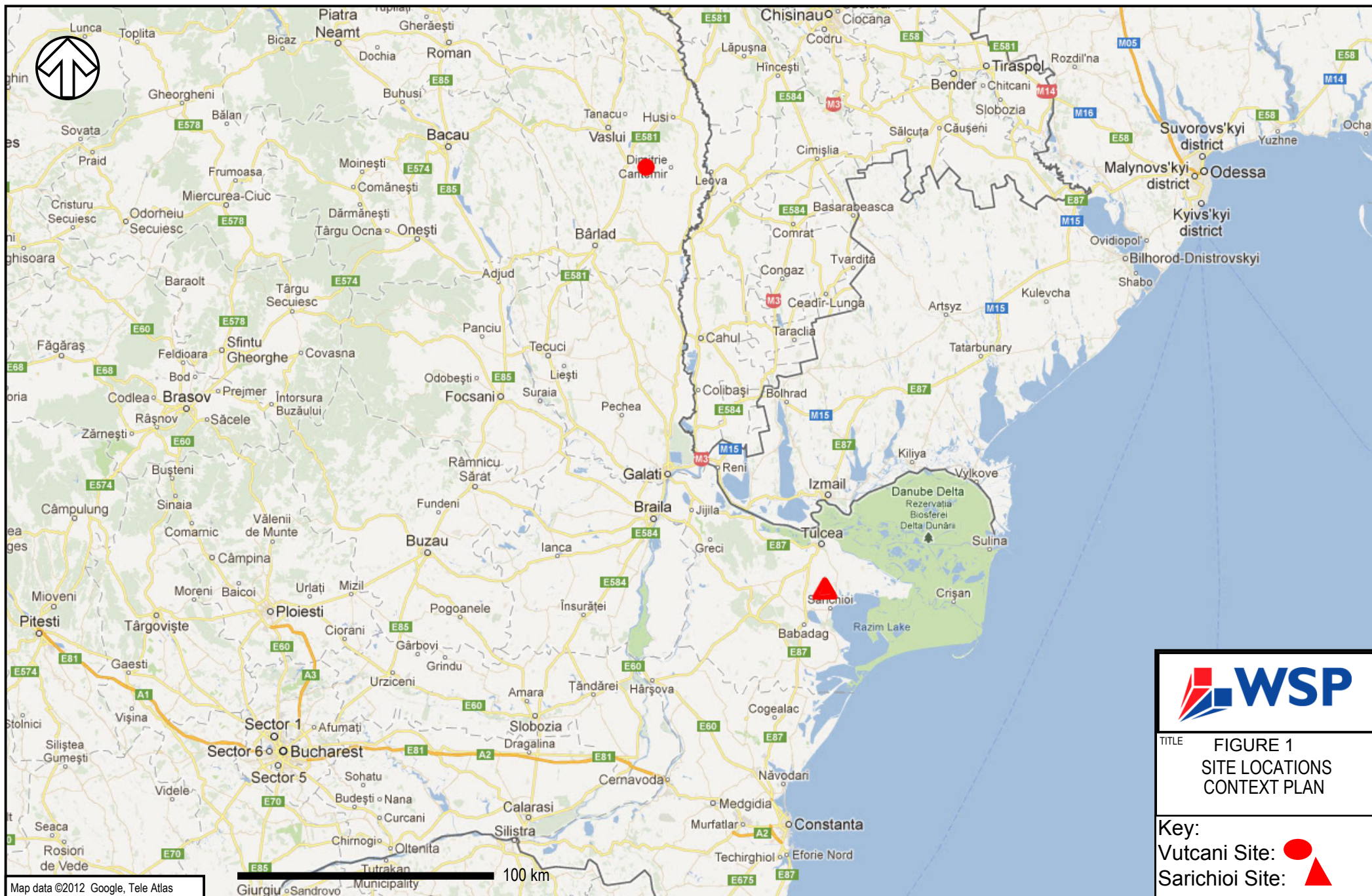
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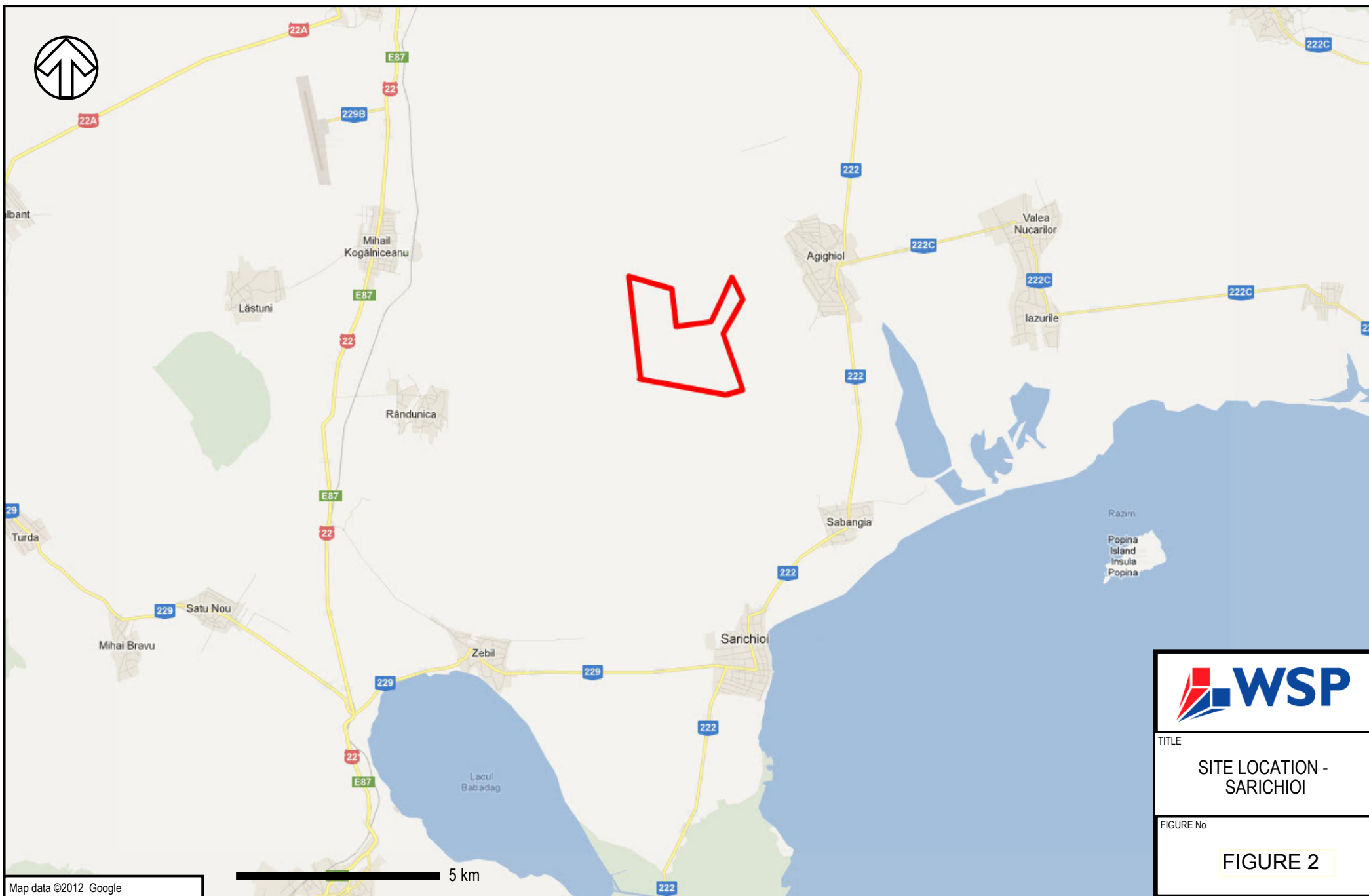
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## 8 Figures

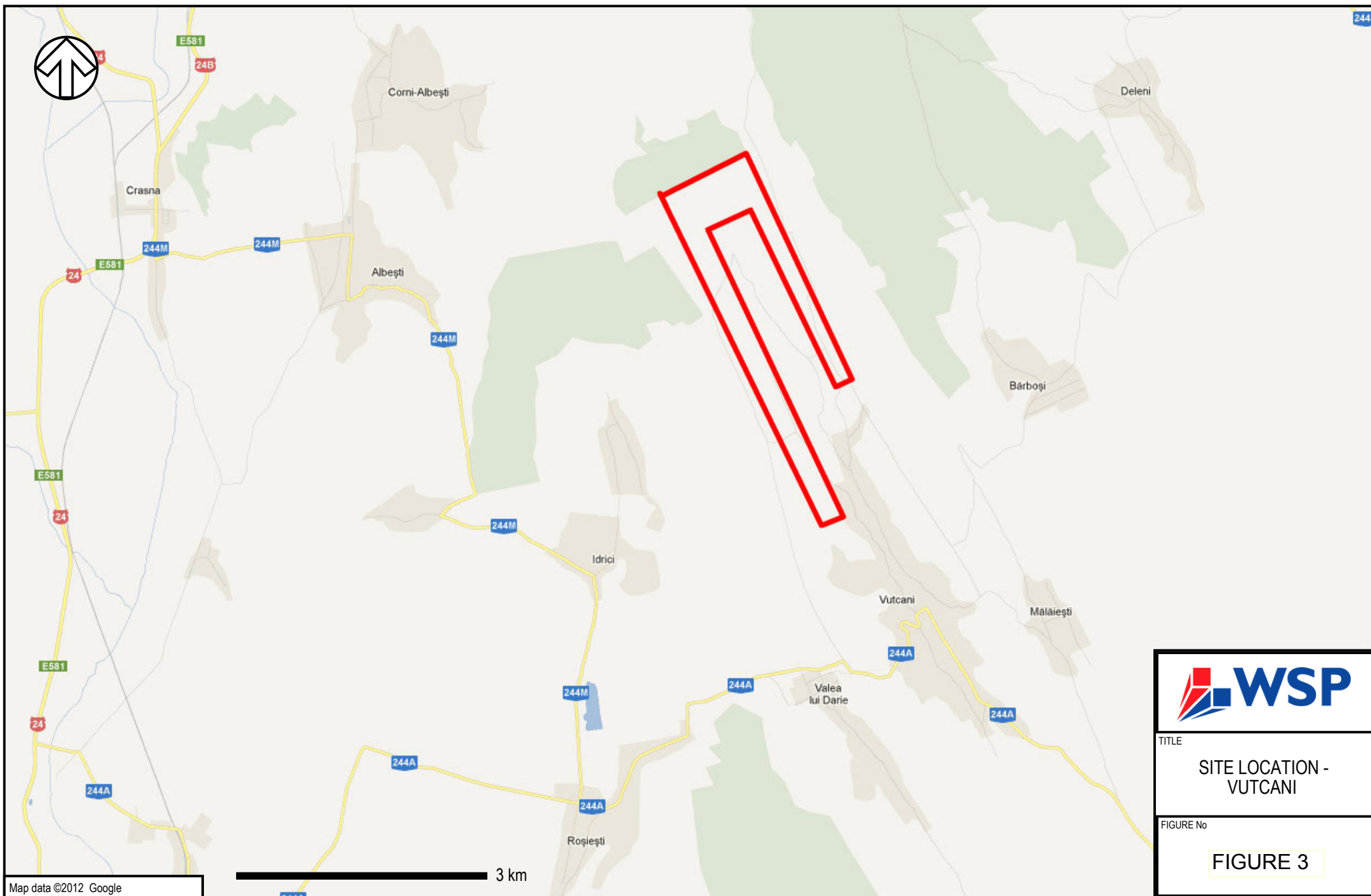






	
TITLE	
SITE LOCATION - SARICHIOI	
FIGURE No	
FIGURE 2	



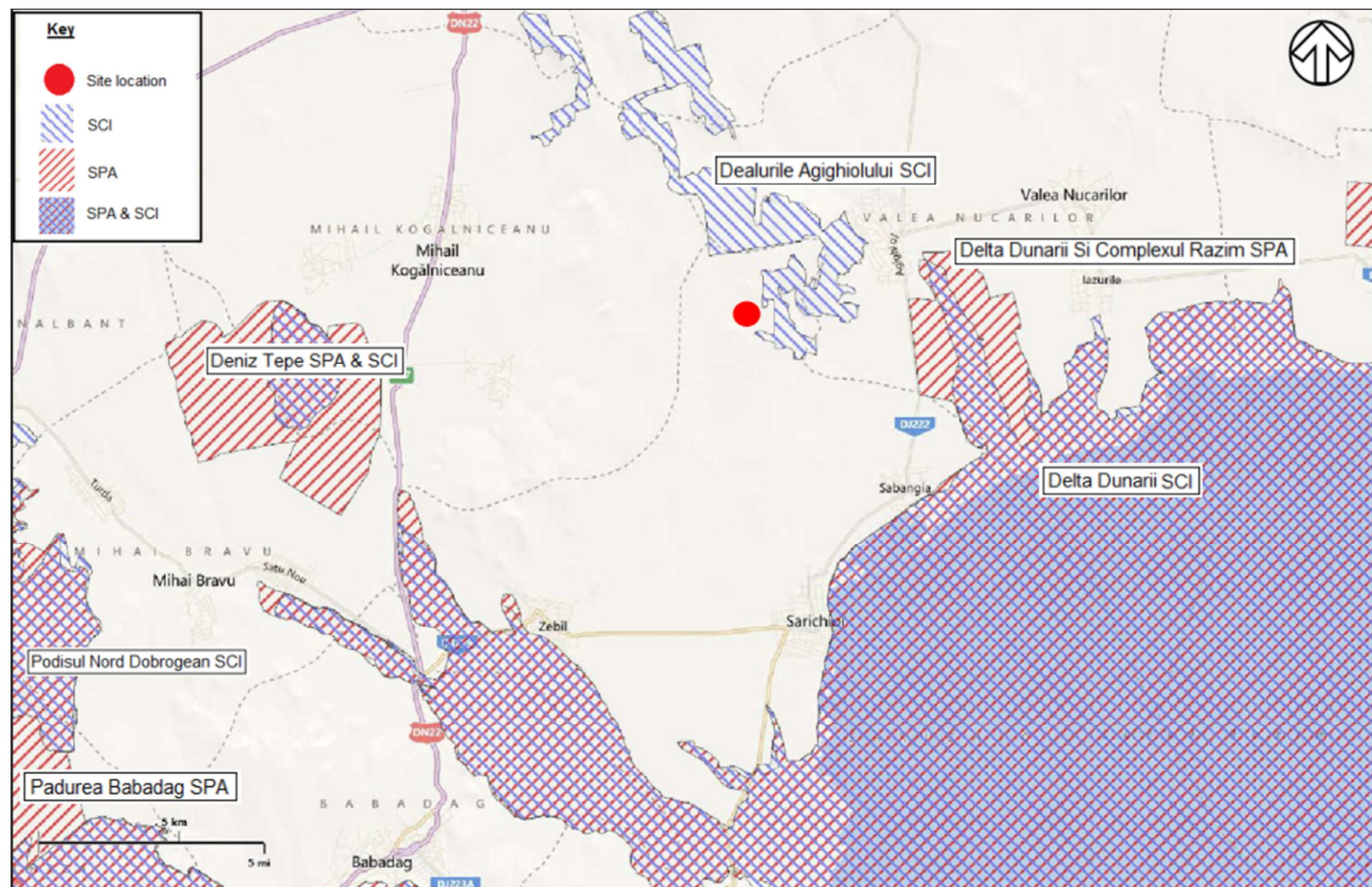


TITLE

SITE LOCATION -  
VUTCANI

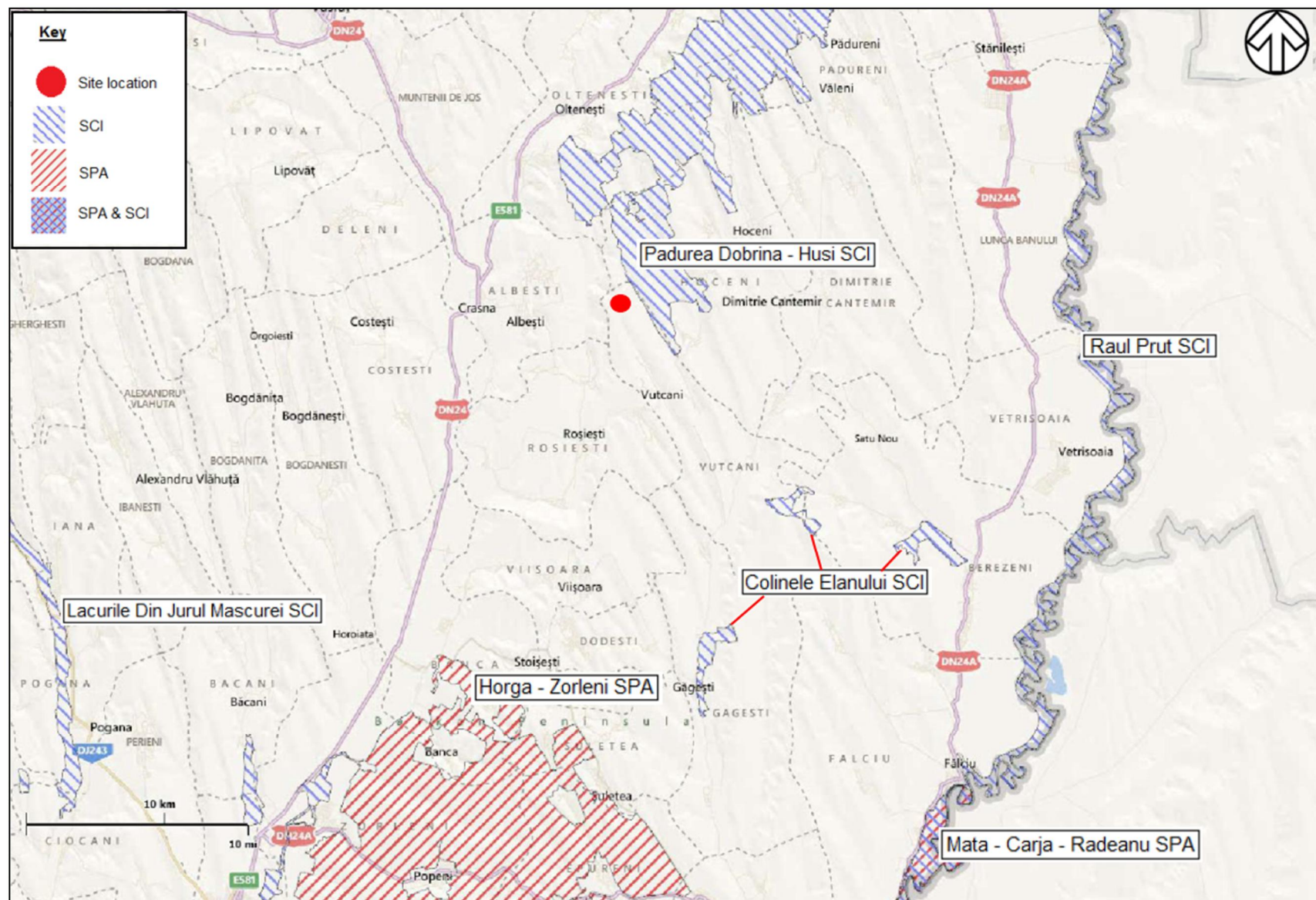
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FIGURE 3

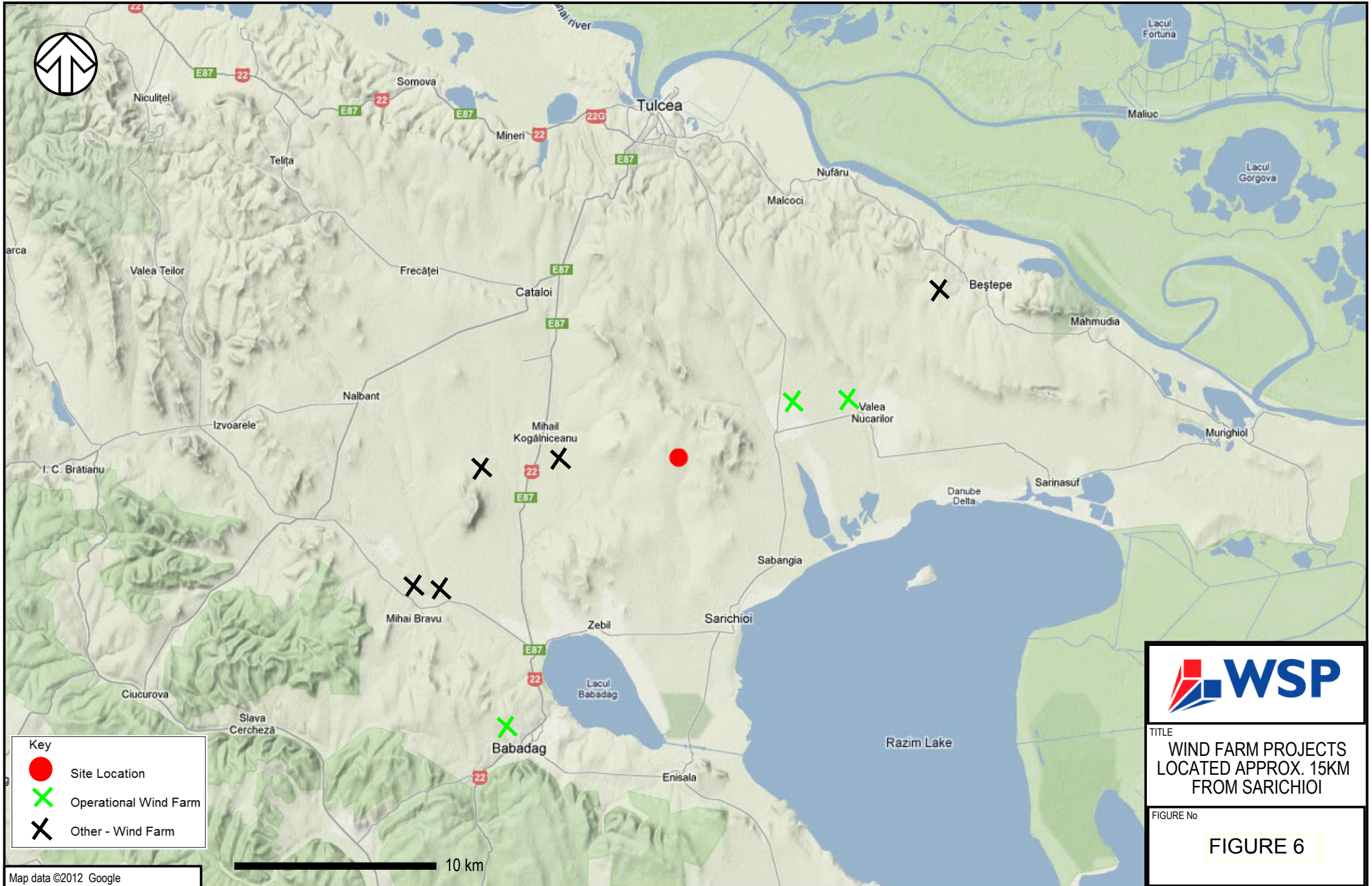


**Figure 4:** Sarichioi Natura 2000 Sites

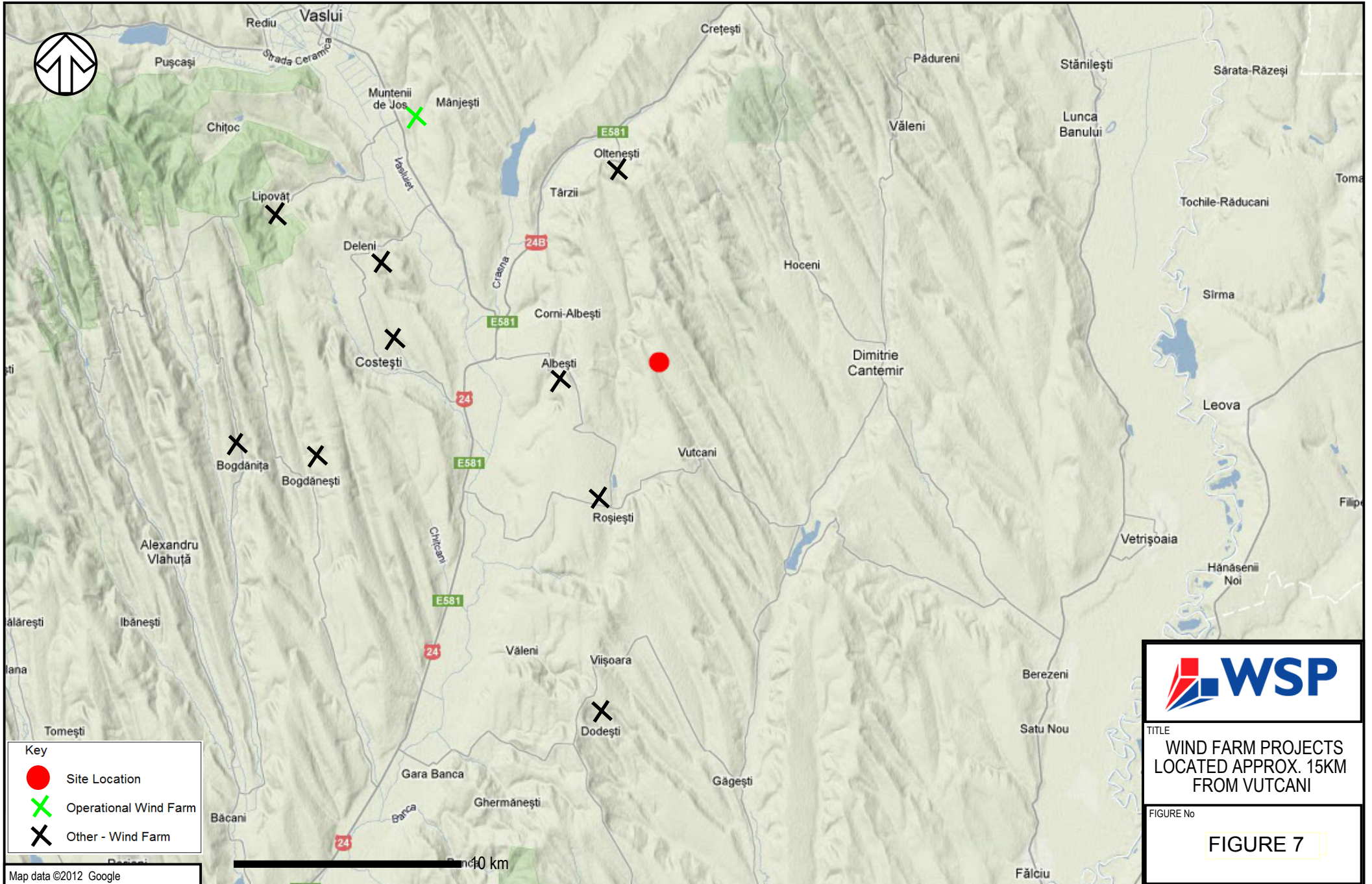




**Figure 5:** Vutcani Natura 2000 Sites









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## 9 Appendices

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## Appendix A – Overview of the Equator Principles, EBRD, Romanian Legislative Requirements and Other Applicable Guidelines

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## THE NEED FOR ESIA

The EBRD seek to ensure through their environmental and social appraisal and monitoring processes that the projects they finance:

- Are socially and environmentally sustainable;
- Respect the rights of affected workers and communities; and
- Are designed and operated in compliance with applicable regulatory requirements and good international practice.

The wind farm developments at Sarichioi and Vutcani are classified as a Category A projects (EBRD, 2008) due to their size and location nature and location of the proposed developments. EBRD classifies Category A projects as those which could result in potentially significant and diverse future environmental and/or social impacts which, at the time of categorisation, cannot readily be identified or assessed and which require a formalised and participatory assessment process carried out by independent third party specialists in accordance with the Performance Requirements.

Projects that require an EIA in Romania are referred to the Environmental Protection Agency (EPA). The EPA Tulcea and EPA Vaslui were consulted as part of the application process for seeking approval to construct the wind farms. The EPA Tucea confirmed that an EIA was required for the Sarichioi wind farm and the EPA Valsui confirmed that the Vutcani wind farm did not require an EIA. EIA Reports were prepared for both sites, with the report for Vutcani being completed as good practice.

## EQUATOR PRINCIPLES

Various financial institutions, including EBRD have adopted the Equator Principles to ensure that the projects they finance are developed in a manner which *“is socially responsible and reflects sound environmental management practices”*.

The Equator Principles include the requirement for a social and environmental assessment to be undertaken for Category A or B projects. An independent social or environmental expert is required to review the assessment, consultation process, documentation and Action Plan in order to assist the due diligence of the Equator Principles Financial Institution (EPFI) and assess compliance with the Equator Principles.

*The Equator Principles guidance states that Category A projects are typically those “Projects with potential significant adverse social or environmental impacts which are diverse, irreversible or unprecedented.”*

## APPLICABLE EBRD PERFORMANCE STANDARDS

### EBRD PERFORMANCE STANDARDS

While the EBRD Performance Requirements (PRs) are applicable to the Project, the environmental and social due diligence and monitoring procedure indicates that the Project will have impacts which must be managed in a manner which is consistent with the following specific criteria:

- EBRD PR1: Environmental and Social Appraisal and Management;
- EBRD PR2: Labour and Working Conditions;
- EBRD PR3: Pollution Prevention and Abatement;
- EBRD PR4: Community, Health, Safety and Security;
- EBRD PR5: Land Acquisition, Involuntary Resettlement and Economic Development;

- EBRD PR6: Biodiversity Conservation and Sustainable Management of Living Resources;
- EBRD PR8: Cultural Heritage; and
- EBRD PR10: Information Disclosure and Stakeholder Engagement.

The Gap Analysis also considered the applicability of PR7 on Indigenous People and has concluded that there are no known indigenous communities within the area affected by the Projects. In addition, PR 9 on Financial Intermediaries has not been considered.

## APPLICABLE LEGISLATION, INTERNATIONAL CONVENTIONS AND GUIDANCE

### RELEVANT EC DIRECTIVES

#### *EIA Directive (85/337/EEC, as amended by 97/11/EC, 2003/35/EC and 2009/31/EC)*

The EU Directive 85/337/EEC on the Environmental Impact Assessment of the effects of projects on the environment (known as the EIA Directive) was introduced in 1985 and amended in 1997. The EIA Directive was amended in May 2003 by Directive 2003/35/EC following signature of the Aarhus Convention in June 1998. This Directive seeks to align the provisions on public participation in accordance with the Aarhus Convention on public participation in decision-making and access to justice in environmental matters. Annexes I and II of the EIA Directive were also amended in 2009 by adding projects related to the transport, capture and storage of carbon dioxide (CO<sub>2</sub>). In December 2011 the initial EIA Directive and its three amendments were codified (systematically arranged) by Directive 2011/92/EU.

The EIA Directive outlines which project categories shall be subject to an EIA, the procedure that shall be followed in completion of an EIA and the content of the assessment (including the EIA Report).

The EIA procedure which is implemented by the EIA Directive ensures that the environmental consequences of a project are identified and assessed before authorisation for a project is given. The public can give its opinion on the project and all views are taken into account in the authorisation procedure of the project. The public is informed of the decision that has been taken.

In line with the EIA Directive it is considered that the project falls within Annex II 3. Energy Industry (i) Installations for the harnessing of wind power for energy production (wind farms). The EIA directive identifies that "Member states shall determine whether the project shall be made subject to an assessment".

#### *Wild Birds Directive (79/409/EEC)*

Article 4 of the Wild Birds Directive 79/409/EEC requires the designation of Special Protection Areas (SPAs) for the conservation of bird species, and states:

*"Member States shall classify the most suitable territories in number and size as Special Protection Areas for the Conservation of Annex 1 species. Member States shall take similar measures for regularly occurring migratory species not listed in Annex 1, bearing in mind the need for protection in the geographical sea and land area where this Directive implies (including staging posts and migration routes). Member States shall take appropriate steps to avoid pollution or deterioration of habitats or any disturbances affecting the birds, in so far as these would be significant."*

Article 3 (b) of the same Directive states:

*"Member states shall undertake upkeep and management in accordance with the ecological needs of habitats inside and outside the protected zones (i.e. SPAs)."*

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### *Habitats Directive (92/43/EEC)*

Council Directive 92/43/EEC on the Conservation of natural habitats and of wild fauna and flora (known as the EC Habitats Directive) is similar in format to the Wild Birds Directive and relates to the protection of biodiversity through habitat conservation. The main aim of the Directive is to promote the maintenance of biodiversity by requiring Member States to take measures to maintain or restore natural habitats and wild species at a favourable conservation status by introducing robust protection for habitats and species of European importance. In applying these measures Member States are required to take account of economic, social and cultural requirements and regional and local characteristics. The Directive also states that SPAs are part of the Natura 2000 site network.

The designation of sites to be protected under the Habitats Directive takes place in two stages and is subject to the criteria set out in Article 4 and Annex III of the Habitats Directive and determined by the species and habitat types listed in the Directive's Annexes I and II. Sites suitable for inclusion in the Natura 2000 network include those which contribute significantly to the maintenance or restoration at a favourable conservation status of natural habitat types or species listed in the Habitats Directive. Natura 2000 sites are also intended to contribute significantly to the coherence of the protected area network and to biodiversity in the biogeographic regions within the European Union. For animal species ranging over wide areas, Sites of Community Importance (SCIs) correspond to the places within the natural range of such species that present the necessary physical and biological factors essential to their survival and reproduction.

The procedure for site selection involves two defined stages:

- The EU member states identify proposed Sites of Community Importance (pSCIs) for inclusion in the Natura 2000 network and forward them to the European Commission together with supplementary data and maps.
- The sites are assessed at EU level for their importance to the Community, following which a List of Sites of Community Importance is then drawn up by the EU Commission in conjunction with the member states (Article 4 (2) of the Habitats Directive).

Once the lists are complete, the member states are required to comply with the provisions of national legislation to place their respective sites under protection as Special Areas of Conservation (SACs) within a period of six years.

Article 3 states that a coherent ecological network of SACs shall be set up under the title of Natura 2000. This network will comprise sites hosting the natural habitat types listed in Annex 1 and habitats of the species listed in Annex 2 and will therefore enable the natural habitat types and the species' habitats concerned to be maintained or, where appropriate, restored at a favourable conservation status.

Section 3 of Article 6 of the Habitats Directive states:

*“Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be the subject of an Appropriate Assessment.”*

### *The Agreement on the Conservation of Populations of European Bats (EUROBATS)*

The Agreement on the Conservation of Populations of European Bats, which came into force in 1994, presently numbers thirty European states among its Parties, from North, South, East and West. The Ukraine became a signatory of the agreement on the 30th September 1999.

The Agreement was set up under the Convention on the Conservation of Migratory Species of Wild Animals (also known as the Bonn Convention), which recognises that endangered migratory-species can be properly protected only if activities are carried out over the entire migratory range of the species.

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The Agreement aims to protect all 52 species of bats identified in Europe, through legislation, education, conservation measures and international co-operation with agreement members and with those who have not yet joined.

In 1995, the First Session of the Meeting of Parties to the Agreement formed an Action Plan, which was to be translated into international action. They established an Advisory Committee to carry forward this plan between the Meetings of Parties.

The most significant items for the Advisory Committee are monitoring and international activities. A pan-European observation study is to identify population trends and then to facilitate the timely introduction of measures to address any problems which the study's results might throw up. The study is based upon representative species, and consistent methods for observing them are to be used.

International-protection measures for bats have, above all, to concentrate on those species which migrate the furthest across Europe, in order to identify and address possible dangers caused by bottle-neck situations in their migratory routes. Therefore, the Advisory Committee is also to examine the available data about the migratory behaviour of representative bat-species.

The results of these studies are intended to lead to a comprehensive international programme for the conservation of the most endangered bat-species in Europe.

## INTERNATIONAL CONVENTIONS

Romania is a signatory to and has ratified the following international conventions which are of particular relevance to the Projects. These include some conventions related to environmental protection, public access to environmental information and bird conservation:

- The Convention on Biological Diversity, Rio de Janeiro (1992);
- The Convention on Environmental Impact Assessment in a Trans boundary Context (Espoo) (1991);
- The UNECE Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters, the Aarhus Convention (1998);
- The Convention on Wetlands of International Importance, the Ramsar Convention (1971);
- The Convention on the Conservation of European Wildlife and Natural Habitats, the Berne Convention (1979);
- The Convention on the Conservation of Migratory Species of Wild Animals, the Bonn Convention (1979);
- The Convention on the Protection of the Black Sea Against Pollution, the Bucharest Convention (1992); and
- The African-Eurasian Waterbird Agreement (AEWA) (1995).

## RELEVANT INTERNATIONAL GUIDANCE

Where relevant, consideration has been given to a number of international guidance documents, these include:

- Policy and Performance Standards on Social and Environmental Sustainability and Policy on Disclosure of Information, IFC, April 2006;
- General Environmental, Health and Safety (EHS) Guidelines, IFC World Bank Group, April 30 2007; and
- Environmental, Health and Safety Guidelines for Wind Energy, IFC World Bank Group, April 30 2007.

- UNDP's 2010 Guidelines on the Environmental Impact Assessment for Wind Farms;
- EU's 2010 guidance on Wind Energy Developments and Natura 2000;
- European Wind Energy Association's 2009 Wind Energy – The Facts;
- EUROBATS Publication Series 3 “Guidelines for consideration of bats in wind farm projects”;
- EC Guidance Document “Wind energy developments and Natura 2000”;
- Natural England Technical Information Note 51 “Bats and Onshore Wind farms”; and
- Natural England Technical Information Note 69 “Assessing the Impacts of Onshore Wind farms on Birds”.

These and other documents including other guidance of wind energy that have been used in this assessment are fully listed in Appendix A.

## APPLICABLE ROMANIAN LEGISLATION

### 1) *Environmental Permitting Requirements*

According to the provisions of Governmental Emergency Ordinance 195/2005, approved by Law 265/2006, Article. 11, it is necessary to apply for and obtain an environmental agreement for new investments including wind farms.

According to Article. 11(2) *“for obtaining the environmental agreement, public or private projects which may have a significant environmental impact, by the nature of the investment, dimension or location, are subject to environmental authority decision on development of environmental assessment”*.

The screening stage for these investments is performed following the provisions of:

- Governmental Decision no. 445/2009 on establishing the framework procedure for the environmental impact assessment for certain public and private projects.

According to the provisions of this Governmental Decision, the projects' objects can be subject to Annex 1: List of projects subject to EIA and / or Adequate Assessment to assess the potential impact on Natura 2000 areas, or Annex 2: List of projects to undergo EIA screening procedure and / or Adequate Assessment to assess the potential impact on Natura 2000 areas.

Thus, the screening procedure is developed by the environmental authorities and the decision is taken whether the full EIA procedure, with or without Adequate Assessment, or the simplified EIA procedure, with or without Adequate Assessment, is to be completed for the project.

- Order no. 135/2010 on the approval of the methodology to apply EIA procedure on public and private projects

The criteria used by the environmental authorities during the screening stage, as provisioned in the GD 445/2009, are listed in Annex 3 of the GD. They are used for the case by case examination of each application for environmental agreement.

The environmental agreement and the application for this permit are part of a set of permits to be obtained before the commissioning of the project. Thus, the GEO 195/2005, Art 11(4), allows that the application and issuance of the environmental agreement be done in parallel with other authorisation permits, as issued by competent authorities.

The initial application documents for the environmental agreement are:

- Notification – according to Ministerial Order 135/2010, Annex 1;



- Copy of the Urban Certificate, including the site location and site layout;

After this stage should it be decided that the EIA procedure with or without Adequate assessment must be followed, a third document shall be developed and submitted to the environmental authorities, namely:

- Presentation Report, according to Ministerial Order 135/2010, Annex 5;

After the screening stage, should it be decided that the full EIA procedure must be followed, a third document shall be developed and submitted to the environmental authorities, namely:

- Environmental Impact Assessment Report – according to Order 863/2002, Annex 2 – Methodological Guideline for the scoping stage on EIA and for the development of EIA report, Part II – EIA report structure

Should the environmental impact be considered insignificant, at this stage, the project can be developed without further environmental permitting requirements. Otherwise, the projects are required to have an Environmental Agreement included in the Construction Authorisation documentation.

A summary of the environmental permitting procedure is presented in the diagram below.

## *2) Construction Permitting / Development Activities*

The legal procedure for development follows a set of steps which are clearly defined. The main obligation is for the Construction Authorisation (CA, also known as the building permit) to be obtained before any construction works are commenced. In order to obtain the environmental authorisation, certain other permits and endorsements are needed from various authorities. The specific permit requirements are detailed in the Urban Certificate (UC).

The UC is the first document to be issued when the intention for a new construction is initially forwarded to the City Hall, under whose jurisdiction the site which is to be developed is located, whilst the CA is the last permit to be issued before the construction works start.

The UC is an informal document issued by the City Hall which states the following information:

- The legal and economic status of the land;
- The historical data on the site; and
- The necessary permits and approvals to be obtained in view of further development (including those to obtain Construction Authorisation).

The permits may be obtained in one or two phases:

- In principle / location endorsement (not permit), which states what is required for the application in order to obtain the permit; and
- The technical memo specific to each permit.

The permits obtained are to be included in the Construction Authorisation file (known as the DTAC, formerly known as the PAC) which is submitted to the City Hall in order to obtain the final permit. Obtaining the required permits is compulsory; application with an incomplete file leads to rejection of the entire application.

The CA allows the construction works to commence and is generally valid for 2 years from issue. Most of the permits are valid for 1 year before obtaining the CA, with possibility of an extension being granted.

Following completion of the construction works it is necessary to obtain the operating permits. The Environmental Authorisation is obtained following its own specific procedure – including submission of specific technical documentation, a site visit by the environmental authorities and a compliance check based on the permitted conditions for construction and operation.

### 3) Public Consultation

The main stages where the public is consulted during the environmental permitting procedure (as set out in GD445 and MO 135/2010), either directly or by means of the disclosure of documents and information, are as follows:

- The application stage - the applicant (developer, owner of the project) makes a public announcement on the intention to develop a certain project and the application for the Environmental Agreement;
- The screening stage – where the EPA (or Regional Environmental Protection Agency) makes public the screening decision and the public has the opportunity to object;
- The EIA Report submission – the EIA Report is submitted to the environmental authority for review and at the same time is also made available to the public for consultation;
- The Public Debate – the public is invited, together with other institutions and authorities, to make direct comments and to request specific clarifications on the EIA report; and
- The environmental agreement granting decision – both the environmental authority and the developer are to make public announcements when the environmental agreement is granted.

### 4) Environmental Protection and Conservation

The main Romanian statutes relating to environmental protection are summarised in Table B.1 below.

**Table B.1 Summary of Applicable Romanian Legislation Relating to Environmental Protection**

Legal Act	Overview of Content
GEO 195/2005, approved with modifications by Law 265/2006	Framework environmental law
Law 104/2011	The quality of surrounding air, including prevention and mitigation of atmospheric pollution in order to avoid negative effects on human health and on the environment  Standards for establishing the limit values, threshold values and criteria and methodologies for assessment of atmospheric pollutants (SO <sub>2</sub> , NO <sub>2</sub> , NO, suspended solids, CO, O <sub>3</sub> )
Law 107/1996, modified and completed by Law 310/2004	Conservation, development and protection of water resources and protection against pollution of surface and underground water
Governmental Decision (GD) 188/2002, modified and completed by GD 352/2005	Standards for wastewater discharges into sewerage networks or to surface waters
Standard (STAS)12574/1987	Relates to air quality in protected areas and includes maximum admissible concentrations of certain pollutants in the ambient air in order to protect the population against the negative effects of pollution, amended by Law 104/2011
STAS 10009/1988	Noise limits within urban and industrial areas

Legal Act	Overview of Content
GEO 78/2000, approved by law 426/2001, modified and completed by GEO 61/2006, approved by Law 27/2007	Framework waste management law
GEO 856/2002	Requirement for waste records and approval of waste list, including hazardous wastes
Ministerial Order no. 536/1997	Public Health Ministry – regarding noise limits in residential areas
SR 12025/1-94	Effects of vibration generated by road traffic on buildings or parts of buildings
SR 12025/2-94	Noise during construction works and effects of vibration on buildings or parts of buildings

#### 5) Protected and Designated Areas

European legislation and the requirements of international environmental conventions (to which Romania is a signatory) have been transposed into Romanian legislation via the Law of Protected Areas (462/2001). In addition to this law, several other legal statutes relate to birds, including the Hunting and Game Management Law (407/2006) which identifies 38 species on the list of game species and 182 species as “protected species for which hunting is forbidden”.

The provisions of the Habitats Directive (92/43/EEC) and Wild Bird Directive (79/409/EEC) are transposed in Romanian legislation through GEO no. 57/2007.

At the end of October 2007 the Romanian Government adopted GD No. 1284/2007, amended by GD 971/2011, adding 40 Special Protection Areas (SPAs) for the conservation of wild birds, some of which occur within the Dobrogea region, to the 108 designated areas set in 2007.

The key Romanian legislation on Protected Areas (including Natura 2000 sites - Special Protection Areas, Sites of Community Importance - as well as Important Bird Areas) and on Appropriate Assessment (as transposed from the EU Habitats Directive into Romanian legislation) is summarised in Table B.2 below:

**Table B.2 Summary of Romanian Legislation on Protected Areas**

Legal Act	Overview of Content
Law 5/2000	Relates to the management of the country's natural resources - Section III refers to protected areas
Law 462/2001	Law of Protected Areas
GEO 57/2007, approved and modify by Law 49/2011	Relates to the natural protected areas regime, conservation of natural habitats, wild flora and fauna
GD 1284/2007, amended by GD 971/2011	Declares the Special Protected Areas for birds as part of Natura 2000 ecological area network in Romania
MO 776/2007	Declares the Sites of Community Importance as part of the Natura 2000 ecological area network in Romania
MO 19/2010	Approving the Methodology on the Appropriate Assessment of plans and projects with potential effects on natural protected areas of Community interest (Natura 2000 sites)

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## Appendix B – Compliance Matrices

**Table 1: Equator Principles High Level Gap Analysis - Sarichioi**

Equator Principles	Requirement	Review of Available Information / Content / High Level Comment Regarding Compliance
<b>Principle 1: Review and Categorisation</b>	EPFI will categorise a project based on the magnitude of its potential impacts and risks in accordance with the IFC environmental and social screening criteria.	<p>Due to the size and location of the project an ESIA is required in line with EBRD and IFC requirements for Category A projects.</p> <p>An EIA was completed for the project in 2009 by Cabinet Expert Mediu (the environmental agreement was issued on 11<sup>th</sup> August 2009).</p>
<b>Principle 2: Social and Environmental Assessment</b>	<p>Social and Environmental Assessment process to be undertaken to address the relevant social and environmental impacts and risks of the proposed project.</p> <p>Assessment should propose appropriate mitigation and management measures.</p>	<p>The available information (including the EIA Report) has been reviewed against existing National and European Union environmental legislation, IFC Environmental, Health and Safety Guidelines for Wind Energy and EBRD environmental and social performance standards and requirements (see Tables 2 and 3 in Appendix B of this Gap Analysis Report).</p> <p>Based on the findings of this review consideration has been given within the Supplementary Information Report to the potential ecological, landscape and cumulative effects of the project together with other wind farm projects which are planned or under development in the area.</p>
<b>Principle 3: Applicable Social and Environmental Standards</b>	<p>The Assessment will refer to the applicable IFC Performance Standards and applicable Industry Specific EHS Guidelines.</p> <p>The Assessment will establish the project's overall compliance with or justified deviation from, the respective Performance Standards and EHS Guidelines.</p>	<p>The available information has been reviewed against EBRD performance requirements and the IFC Environmental, Health and Safety (EHS) Guidelines for Wind Energy and IFC EHS General Guidelines.</p> <p>The results of the review, including the project's overall compliance, are presented within Tables 2 and 3 in Appendix B and are discussed within Section 5 of this Gap Analysis report.</p>
<b>Principle 4: Action Plan and Management System</b>	<p>Action Plan (AP) to be prepared which addresses the relevant findings and drawings on the conclusions of the Assessment.</p> <p>The AP will describe and prioritise the actions needed to implement mitigation measures, corrective actions and monitoring measures necessary to manage the impacts</p>	<p>An Environmental and Social Action Plan (ESAP) has been prepared as part of the ESIA due diligence process and is provided in Appendix C of this Gap Analysis report.</p> <p>The ISO 14001 certification procedure for Sarichioi started in January 2012 and an internal audit was carried out on 19th June. The certification audit will be in September 2012.</p>

Equator Principles	Requirement	Review of Available Information / Content / High Level Comment Regarding Compliance
	<p>and risks identified in the Assessment.</p> <p>A Social and Environmental Management System to be established that addresses the management of these impacts, risks and corrective actions required to comply with applicable county social and environmental laws and regulations and requirements of the applicable Performance Standards and EHS Guidelines as defined in the AP.</p>	
<b>Principle 5: Consultation and Disclosure</b>	<p>Consultation to be held with affected communities in a structured and culturally appropriate manner.</p> <p>Project to adequately incorporate affected communities' concerns by ensuring their free, prior and informed consultation and facilitating their informed participation.</p> <p>Assessment documentation and AP, or NTS, to be made available to the public in the relevant local language.</p> <p>For Category A projects disclosure to occur early in the Assessment process and before the project construction commences, and on an ongoing basis.</p>	<p>In Sarichioi, there was a public debate on the EIA, with local residents attending. Information on the project was available at the City Council headquarters in both locations, at the Environmental Protection Agency and in local mass-media.</p> <p>An ESAP has been prepared for this project as part of the ESIA due diligence process. A Non-Technical Summary for the project is provided as a separate document.</p> <p>The project was completed and commissioned in May 2012.</p>
<b>Principle 6: Grievance Mechanism</b>	<p>For Category A projects to ensure that consultation, disclosure and community engagement continues through construction and operation of the project.</p> <p>Affected communities to be informed about the grievance mechanism in the course of community engagement process and ensure that the mechanism addresses concerns promptly and transparently in a culturally appropriate manner, and is readily accessible to all segments of the affected communities.</p>	<p>A Grievance Mechanism was implemented during the construction works, for all employees and local inhabitants by which complaints could be filed to the City Hall, to the Environmental Protection Agency or directly at the construction sites. No complaints were recorded during the construction works.</p> <p>It is recommended that further consultation is undertaken during operation of the project. A Stakeholder Engagement Plan has been prepared which describes the key stakeholders and the information and communications</p>

Equator Principles	Requirement	Review of Available Information / Content / High Level Comment Regarding Compliance
		plans relating to the project.  A grievance mechanism will be implemented for this Project, as detailed in the Stakeholder Engagement Plan.
<b>Principle 7: Independent Review</b>	For all Category A projects an independent environmental and/or social expert not directly associated with the borrower will review the Assessment, AP and consultation process documentation in order to assist EPFI's due diligence, and assess Equator Principles compliance.	WSP has undertaken an independent review of the available information, including the consultation process, and has assessed compliance with the Equator Principles. The findings of the review are presented within the main text of this Gap Analysis report (see Section 5).
<b>Principle 8: Covenants</b>	For Category A and B projects the borrower will covenant in financing documentation: <ul style="list-style-type: none"> <li>a) to comply with all relevant host country social and environmental laws, regulations and permits in all material respects</li> <li>b) to comply with the AP (where applicable) during the construction and operation of the project in all material respects</li> <li>c) to provide periodic reports that document compliance with the AP and provide representation of compliance with relevant local, state and host country social and environmental laws, regulations and permits</li> <li>d) To decommission the facilities, where applicable and appropriate, in accordance with an agreed decommissioning plan.</li> </ul>	EDPR will provide the appropriate covenants in financing documentation, including compliance with relevant legal requirements, the Environmental and Social Action Plan and a decommissioning plan. In addition, EDPR will provide annual environmental performance reports.
<b>Principle 9: Independent Monitoring and Reporting</b>	For all Category A projects EPFIs will require appointment of an independent environmental and/or social expert, or require that the borrower retain qualified and experienced external experts to verify its monitoring	Monitoring and mitigation measures are described in the Supplementary Information Report and will be implemented through the ESAP.  An independent environmental expert will be employed by EDPR to monitor



Equator Principles	Requirement	Review of Available Information / Content / High Level Comment Regarding Compliance
	information.	compliance with respect to environmental matters during operation and make recommendations for corrective actions if required. In addition, an independent ornithological expert has been appointed who is responsible for undertaking bird surveys and monitoring bird movements in the immediate area and instigating a turbine shut-down process based on visual observations as required, such as during spring and autumn migration periods.
<b>Principle 10: EPFI Reporting</b>	EPFI to report publicly at least annually about its Equator Principles implementation processes and experience.	EDPR will provide annual reports to the EBRD on the environmental performance of the project

Source documents: The Equator Principles (July 2006), [www.equator-principles.com](http://www.equator-principles.com)

**Table 1: Equator Principles High Level Gap Analysis - Vutcani**

Equator Principles	Requirement	Review of Available Information / Content / High Level Comment Regarding Compliance
<b>Principle 1: Review and Categorisation</b>	EPFI will categorise a project based on the magnitude of its potential impacts and risks in accordance with the IFC environmental and social screening criteria.	<p>Due to the size and location of the project an ESIA is required in line with EBRD requirements for Category A projects.</p> <p>In accordance with Romanian National Law, a screening assessment was undertaken the project. It was confirmed by the screening that an EIA was not required for the Vutcani site. However, an EIA was undertaken for the project in 2008 by Environscopy and Search IT project for completeness (the environmental agreement was issued in 2007).</p>
<b>Principle 2: Social and Environmental Assessment</b>	<p>Social and Environmental Assessment process to be undertaken to address the relevant social and environmental impacts and risks of the proposed project.</p> <p>Assessment should propose appropriate mitigation and management measures.</p>	<p>The available information (including the EIA Report) has been reviewed against existing National and European Union environmental legislation, IFC Environmental, Health and Safety Guidelines for Wind Energy and EBRD environmental and social performance standards and requirements (see Tables 2 and 3 in Appendix B of this Gap Analysis Report).</p> <p>Based on the findings of this review consideration has been given within the Supplementary Information Report to the potential ecological, landscape and cumulative effects of the project together with other wind farm projects which are planned or under development in the area.</p>
<b>Principle 3: Applicable Social and Environmental Standards</b>	<p>The Assessment will refer to the applicable IFC Performance Standards and applicable Industry Specific EHS Guidelines.</p> <p>The Assessment will establish the project's overall compliance with or justified deviation from, the respective Performance Standards and EHS Guidelines.</p>	<p>The available information has been reviewed against EBRD performance requirements and the IFC Environmental, Health and Safety (EHS) Guidelines for Wind Energy and IFC EHS General Guidelines.</p> <p>The results of the review, including the project's overall compliance, are presented within Tables 2 and 3 in Appendix B and are discussed within Section 5 of this Gap Analysis report.</p>
<b>Principle 4: Action Plan and Management System</b>	Action Plan (AP) to be prepared which addresses the relevant findings and drawings on the conclusions of the Assessment.	An Environmental and Social Action Plan (ESAP) has been prepared as part of the ESIA due diligence process and is provided in Appendix C of this Gap Analysis Report.

Equator Principles	Requirement	Review of Available Information / Content / High Level Comment Regarding Compliance
	<p>The AP will describe and prioritise the actions needed to implement mitigation measures, corrective actions and monitoring measures necessary to manage the impacts and risks identified in the Assessment.</p> <p>A Social and Environmental Management System to be established that addresses the management of these impacts, risks and corrective actions required to comply with applicable county social and environmental laws and regulations and requirements of the applicable Performance Standards and EHS Guidelines as defined in the AP.</p>	
<b>Principle 5: Consultation and Disclosure</b>	<p>Consultation to be held with affected communities in a structured and culturally appropriate manner.</p> <p>Project to adequately incorporate affected communities' concerns by ensuring their free, prior and informed consultation and facilitating their informed participation.</p> <p>Assessment documentation and AP, or NTS, to be made available to the public in the relevant local language.</p> <p>For Category A projects disclosure to occur early in the Assessment process and before the project construction commences, and on an ongoing basis.</p>	<p>A public debate was not required by law provisions and thus no formal public meeting was held. Information on the project was available at the City Council headquarters, at the Environmental Protection Agency and in local mass-media. Local residents are aware about the project through informal networks and direct contact with employees of the contracting firms during the construction works and the general perception seems to be highly positive.</p> <p>An ESAP has been prepared for this project as part of the ESIA due diligence process. A Non-Technical Summary for the project is provided as a separate document.</p> <p>The project was completed and commissioned in March 2012.</p>
<b>Principle 6: Grievance Mechanism</b>	<p>For Category A projects to ensure that consultation, disclosure and community engagement continues through construction and operation of the project.</p> <p>Affected communities to be informed about the grievance mechanism in the course of community engagement process and ensure that the mechanism</p>	<p>A Grievance Mechanism was implemented during the construction works, for all employees and local inhabitants by which complaints could be filed to the City Hall, to the Environmental Protection Agency or directly at the construction sites. No complaints were recorded during the construction works.</p>

Equator Principles	Requirement	Review of Available Information / Content / High Level Comment Regarding Compliance
	addresses concerns promptly and transparently in a culturally appropriate manner, and is readily accessible to all segments of the affected communities.	<p>It is recommended that further consultation is undertaken during operation of the project. A Stakeholder Engagement Plan has been prepared which describes the key stakeholders and the information and communications plans relating to the project.</p> <p>A grievance mechanism will be implemented for this Project, as detailed in the Stakeholder Engagement Plan.</p>
<b>Principle 7: Independent Review</b>	For all Category A projects an independent environmental and/or social expert not directly associated with the borrower will review the Assessment, AP and consultation process documentation in order to assist EPFI's due diligence, and assess Equator Principles compliance.	WSP has undertaken an independent review of the available information, including the consultation process, and has assessed compliance with the Equator Principles. The findings of the review are presented within the main text of this Gap Analysis report (see Section 5).
<b>Principle 8: Covenants</b>	<p>For Category A and B projects the borrower will covenant in financing documentation:</p> <ul style="list-style-type: none"> <li>a) to comply with all relevant host country social and environmental laws, regulations and permits in all material respects</li> <li>b) to comply with the AP (where applicable) during the construction and operation of the project in all material respects</li> <li>c) to provide periodic reports that document compliance with the AP and provide representation of compliance with relevant local, state and host country social and environmental laws, regulations and permits</li> <li>d) To decommission the facilities, where applicable and appropriate, in accordance with an agreed decommissioning plan.</li> </ul>	EDPR will provide the appropriate covenants in financing documentation, including compliance with relevant legal requirements, the Environmental and Social Action Plan and a decommissioning plan. In addition, EDPR will provide annual environmental performance reports.
<b>Principle 9:</b>	For all Category A projects EPFIs will require	Monitoring and mitigation measures are described in the Supplementary

Equator Principles	Requirement	Review of Available Information / Content / High Level Comment Regarding Compliance
<b>Independent Monitoring and Reporting</b>	appointment of an independent environmental and/or social expert, or require that the borrower retain qualified and experienced external experts to verify its monitoring information.	Information Report and will be implemented through the ESAP.  An independent environmental expert will be employed by EDPR to monitor compliance with respect to environmental matters during operation and make recommendations for corrective actions if required. In addition, an independent ornithological expert will be appointed who is responsible for undertaking bird surveys and monitoring bird movements in the immediate area and instigating a turbine shut-down process based on visual observations as required, such as during spring and autumn migration periods.
<b>Principle 10: EPFI Reporting</b>	EPFI to report publicly at least annually about its Equator Principles implementation processes and experience.	EDPR will provide annual reports to the EBRD on the environmental performance of the project

Source documents: The Equator Principles (July 2006), [www.equator-principles.com](http://www.equator-principles.com)

**Table 2 – IFC EHS Guidelines for Wind Energy and IFC EHS General Guidelines Gap Analysis – Sarichioi**

**Table 2a) IFC EHS Guidelines for Wind Energy**

IFC EHS Guidelines on Wind Energy	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
<b>1.0 Industry-Specific Impacts and Management</b>			
<b>1.1 Environment</b>			
<b>Visual Impacts</b>	<p>When considering location:</p> <ul style="list-style-type: none"> <li>• Consultation with local community to incorporate community values into design.</li> <li>• Consider landscape and visual impacts from all relevant viewing angles.</li> </ul> <p>When considering design:</p> <ul style="list-style-type: none"> <li>• Minimise presence of ancillary structures.</li> <li>• Implement erosion measures such as native only planting.</li> <li>• Maintain uniform size and design of turbines.</li> <li>• Uniform sky colour turbines, while observing marine and navigational marking regulations.</li> <li>• Avoid lettering, insignia, graphics or advertising on turbines.</li> </ul>	<p>The site was selected based on a series of wind surveys and through discussions with the Environmental Protection Agency (EPA) in Tulcea regarding the number of turbines. Part of this wind farm is located within the Agighiol Hills Site of Community Importance (SCI) for wildlife. Results of the discussions reduced the number of turbines from 20 to 11.</p> <p>Section 4.6 of the EIA Report addresses the potential impacts of the proposed development on the existing landscape. The site is not located within a sensitive landscape designated area. The EIA reports that the wind turbines will have a positive impact on the landscape. Therefore the EIA Report does not consider measures to minimise visual impacts.</p>	Further consideration of visual and landscape impacts of the wind turbines is provided in the Supplementary Information Report.
<b>Noise</b>	<ul style="list-style-type: none"> <li>• Turbine design standards should limit noise generation</li> </ul>	The turbines incorporate a variable rotor speed and blade angle function to ensure optimum	Noise monitoring should be undertaken to demonstrate compliance with EHS

IFC EHS Guidelines on Wind Energy	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<p>though measures such as limiting blade speed in higher winds to limit noise generation.</p> <ul style="list-style-type: none"> <li>• Siting of wind farm should avoid locations close to sensitive receptors such as residences, hospitals and schools.</li> <li>• Adherence to national and international acoustic design standards for wind turbines (e.g. International Energy Agency, International Electrotechnical Commission [IEC], and the American National Standards Institute).</li> </ul>	<p>RPM and pitch angle, thus minimising extraneous noise generated by off-angle prevailing wind turbulence.</p> <p>The wind turbines are located more than 500m away from noise-sensitive receptors.</p> <p>The likelihood of compliance with Romanian legislation, EBRD, IFC and World Health Organisation requirements is high. Low noise impact is predicted.</p>	Guidelines.
<p><b>Species mortality and Injury and Disturbance</b></p>	<ul style="list-style-type: none"> <li>• Site selection should account for known migratory pathways or areas where birds and bats are highly concentrated</li> <li>• Turbine arrays should be configured to avoid potential avian mortality</li> <li>• Appropriate storm water management measures to avoid creating attractions such as small ponds.</li> </ul>	<p>The EIA Report includes consideration of impacts on birds and the wind farm site has been selected where possible to avoid impacts on nearby protected areas, although it is noted that one turbine is located in the Agighiol Hills SCI and approximately 600m of the overhead electricity lines and three pylons are located within the Deniz Tepe SPA. Consultation has been held with the relevant authorities and the required permits have been obtained from the organisations which are the custodians of these protected areas.</p> <p>The wind turbines are located approximately</p>	Mitigation and monitoring measures relating to birds and bats are detailed in the Supplementary Information Report.



IFC EHS Guidelines on Wind Energy	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
<b>Shadow Flicker and Blade Glint</b>	<ul style="list-style-type: none"> <li>Site and orientation of wind turbines should avoid residences located within the narrow bands, general southwest and southeast of the turbines, where flicker has a high frequency</li> <li>Paint used on turbines should have non-reflective coating to avoid reflections from towers.</li> </ul>	<p>500m apart.</p> <p>The EIA has considered the impact of shadowing on nearby areas and states that there is likely to be a beneficial impact during the summer months, due to the arid conditions in the area.</p> <p>Since the nearest residential property is more than 500m away no impacts associated with possible shadowing effects are anticipated at nearby dwellings.</p> <p>Shadow simulations are provided in the EIA in Section 1.4.73 (page 49).</p> <p>No information is provided in the EIA on the amount of calculated hours of shadow at dwellings. As a guideline 8 hours per day is considered a standard guideline value in Sweden and Germany.</p> <p>Blade glint is prevented through the use of non-reflective paint on the selected Vestas turbines.</p>	No further action is recommended
<b>Habitat Alteration -</b>	<ul style="list-style-type: none"> <li>Construction of access roads in remote locations may result in additional risks for the alteration of terrestrial habitats. EHS Guidelines for Roads provides more information on this.</li> </ul>	Local roads have been upgraded and new access roads have been created within the wind farm. The extent of habitat affected by these roads and also the footprints of the turbines and the substation is limited. The remainder of the site has been returned to its previous agricultural use.	No further action is recommended
<b>Water Quality</b>	<ul style="list-style-type: none"> <li>Measures to control erosion</li> </ul>	There are no significant water courses/bodies on	No further action is recommended

IFC EHS Guidelines on Wind Energy	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<p>and sedimentation are discussed in the General EHS Guidelines and in the EHS Guidelines for Roads.</p>	<p>or near the site. Groundwater is present at more than 32m below ground level.</p> <p>Section 4.1 of the EIA Report sets out mitigation measures to prevent water pollution from potential pollution events during the construction works.</p> <p>No soil erosion or water system management approaches are considered to be required at the site.</p>	
<b>1.2 Occupational Health and Safety</b>			
<b>Working at Heights</b>	<p>Contractor should comply with the following guidelines:</p> <ul style="list-style-type: none"> <li>• Prior to undertaking work, test structure for integrity</li> <li>• Implementation of a fall protection program that includes training in climbing techniques and use of fall protection measures; inspection, maintenance, and replacement of fall protection equipment; and rescue of fall-arrested workers;</li> <li>• Establish a criteria for use of 100% fall protection (typically when working over 2m above the working surface but sometimes extended to 7m, depending on the activity).</li> </ul>	<p>According to the provisions of the Law 319/2006 and Governmental Decision (GD) 955/2010 a specific health and safety instruction for working at height has to be prepared.</p> <p>According with the provisions of the Law 319/2006 and GD 1425/2006 amended by GD 955/2010 an internal Standards book has to be prepared, stating the allocation of the personal protective equipment (PPE) which includes the PPE for working at height.</p> <p>A Health and Safety Plan will be implemented during operation of the wind farm. The Health and Safety Plan will cover all relevant aspects to ensure compliance with health and safety legislation and international good practice relating to occupational and community health and safety and will include the following aspects:</p>	

IFC EHS Guidelines on Wind Energy	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<p>The fall-protection system should be appropriate for the tower structure and movements to be undertaken including ascent descent, and moving from point to point;</p> <ul style="list-style-type: none"> <li>• Installation of fixtures on tower components to facilitate the use of fall protection systems;</li> <li>• Provide workers with an adequate working position device system. Connectors on positioning systems must be compatible with tower components to which they are attached;</li> <li>• Ensure that hoisting equipment is properly rated and maintained and that hoist operators are properly trained;</li> <li>• Safety belts should not be less than 15.8mm (5/8 inch) two in one nylon or material of equivalent strength. Rope safety belts should be replaced before signs of aging or fraying of fibres becomes evident</li> <li>• When operating power tools</li> </ul>	<ul style="list-style-type: none"> <li>• Working at heights</li> <li>• Electrical safety</li> <li>• Emergency and evacuation procedures (e.g. in the event of a fire)</li> <li>• General health and safety measures</li> <li>• Access and security.</li> </ul> <p>The exact operational provisions and procedures are not available at this stage and will be set at the time the client will be tendering for the operational contract.</p> <p>EDPR's "General Contracting Conditions" are mandatory and are attached to every contract to be signed by Contractors. These include provisions relating to the occupational health and safety and employment and social obligations.</p> <p>A maintenance contract has been awarded to Vestas for maintenance of the wind turbines.</p>	

IFC EHS Guidelines on Wind Energy	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<p>at height, workers should use a second (backup) safety strap;</p> <ul style="list-style-type: none"> <li>• Signs or other obstructions should be removed from poles or structures prior to undertaking work;</li> <li>• An approved tool bag should be used for raising or lowering tools or materials to workers on elevated structures; and</li> <li>• Avoid conducting tower installation or maintenance work during poor weather conditions and especially where there is a risk of lightning strikes.</li> </ul>		
<b>1.3 Community health and Safety</b>			
<b>Aircraft Safety</b>	<ul style="list-style-type: none"> <li>• Consult with air regulatory authorities before installation, in accordance with air traffic safety regulations</li> <li>• When feasible, avoid siting wind farms close to airports and within known flight path envelopes.</li> <li>• Use anti-collision lighting and marking systems on towers and blades.</li> </ul>	<p>The project has been implemented according to the requirements of EN ISO 17050-1:2004 and Directive 2006/42/CE</p> <p>Beacon lights have been installed in accordance with ICAO and FAA standards.</p> <p>A permit for the wind farm has been issued by the Romanian Civil Aviation Authority (Authorization 16773/861 from 11.08.2009).</p>	No further action is recommended
<b>Blade / Ice Throw</b>	Blade throw:	The project has been implemented according	No further action is recommended

IFC EHS Guidelines on Wind Energy	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<ul style="list-style-type: none"> <li>Establish safety setbacks, and design / site wind farms such that no building or populated areas lie within the possible trajectory range of the blade, unlikely to exceed 300m although range and can vary with size/shape/weight/speed of the rotor blades/height of the turbine.</li> <li>Equip wind turbines with vibration sensors that can detect and react to any imbalance in the rotor blades and shutdown if necessary.</li> <li>Regularly maintain the wind turbine;</li> <li>Use public warning signs to alert the public to risk.</li> </ul> <p>Ice throw:</p> <ul style="list-style-type: none"> <li>Curtail wind turbine operations during periods of ice accretion.</li> <li>Post signs at least 150 metres from the wind turbine in all directions.</li> <li>Equip turbines with heaters and ice sensors.</li> <li>Use cold-resistant steel for the turbine tower.</li> </ul>	with EN ISO 17050-1:2004 and Directive 2006/42/CE.	

IFC EHS Guidelines on Wind Energy	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<ul style="list-style-type: none"> <li>• Use synthetic lubricants rated for cold temperatures.</li> <li>• Use black fluoroethane-coated blades.</li> <li>• Provide full-surface blade heating, if available, or otherwise use leading-edge heaters at least 0.3m wide.</li> </ul>		
<b>Electromagnetic Interference</b>	<p>Aviation Radar:</p> <ul style="list-style-type: none"> <li>• Consider wind energy equipment designs that minimise radar interference, including the shape of the turbine tower, the shape and materials of the nacelle, and use of radar-absorbent surface treatments (e.g. Blades made of glass-reinforced epoxy or polyester) which should not generate electrical disturbance.</li> <li>• Consider design options, including geometric layout of turbines and changes to air traffic routes.</li> <li>• Consider radar design alterations including relocation of the affected radar, radar blanking of the affected area, or use of alternative radar systems to</li> </ul>	<p>The project has been implemented in accordance with EN ISO 17050-1:2004 and Directive 2006/42/CE.</p> <p>Health and safety warning signs are placed at the wind farm entrance and on the access doors of each turbine.</p>	No further action is recommended



IFC EHS Guidelines on Wind Energy	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<p>cover the affected area.</p> <p>Telecommunication Systems</p> <ul style="list-style-type: none"> <li>• Modify the position of wind turbines to avoid direct physical interference of point-to-point communication systems.</li> <li>• Install a directional antenna</li> <li>• Modify the existing aerial</li> <li>• Install an amplifier to boost the system</li> </ul> <p>Television:</p> <ul style="list-style-type: none"> <li>• Site the turbine away from the line-of-site of the broadcast transmitter.</li> <li>• Use non-metallic turbine blades.</li> <li>• If interference is detected during operation: <ul style="list-style-type: none"> <li>- install higher quality or directional antenna</li> <li>- Direct the antenna toward an alternative broadcast transmitter</li> <li>- Install an amplifier</li> <li>- Relocate the antenna</li> <li>- If a wide area is affected, consider the construction of a new repeater station.</li> </ul> </li> </ul> <p>Public Access</p> <ul style="list-style-type: none"> <li>• Use gates on access roads</li> </ul>		

IFC EHS Guidelines on Wind Energy	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<ul style="list-style-type: none"> <li>• Fence wind farm site, or individual turbines, to prohibit public access close to the turbine.</li> <li>• Prevent access to turbine tower ladders</li> <li>• Post information boards about public safety hazards and emergency contact information.</li> </ul>		
<b>2.0 Performance Indicators and Monitoring</b>			
<b>2.1 Environment</b>			
<b>Emissions and Effluent Guidelines</b>	<ul style="list-style-type: none"> <li>• Air emissions, wastewater discharges, and solid wastes related to construction and decommissioning activities are discussed in the General EHS Guidelines.</li> </ul>	<p>The wind farm will not generate process emissions and effluents during operation.</p> <p>Water requirements for the wind farm will be limited to toilets and kitchen facilities in the substation on-site.</p> <p>Waste water will be collected in a septic tank and emptied by a specialist contractor for off-site disposal.</p> <p>The EIA report Section 4.3 considers the potential impact to soil from leakages of lubricants and oils. This is for both construction and operation. Measures to protect the ground from spillages and hazardous substances are provided within this section of the report.</p> <p>During operation the wind farm is not predicted</p>	<p>A waste management plan should be prepared. The plan should identify methods to reduce waste generation and re-use and recycle wastes in preference to disposal.</p>

IFC EHS Guidelines on Wind Energy	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
		<p>to generate emissions to air.</p> <p>The EIA also considers the potential impacts on air quality and recommends measures to limit air pollution relating to dust during construction.</p> <p>The CEMP used during construction considered waste generation and aimed to separate waste into streams to maximise recycling / reuse to minimise waste sent to landfill.</p>	
<b>Noise Guidelines</b>	<ul style="list-style-type: none"> <li>Impacts should not exceed those laid out in the General EHS Guidelines</li> </ul>	<p>The likelihood of compliance with the EHS Guidelines for noise is high. Low noise impact is predicted.</p>	<p>Noise monitoring should be undertaken at the nearest noise sensitive property to demonstrate compliance with EHS Guidelines.</p>
<b>Environmental Monitoring</b>	<ul style="list-style-type: none"> <li>Environmental monitoring programmes should be implemented to address all activities that have been identified to have potentially significant impacts on the environment, during normal and upset conditions. These monitoring activities should be based on direct or indirect indicators of emissions, effluents, and resource use applicable to the particular project.</li> <li>Monitoring of bird and bat injury and mortality. This</li> </ul>	<p>The EIA Report states that continuous surveillance of the perimeter of the wind farm will be undertaken to ensure any incidents that might influence population, fauna or flora are identified and reported immediately, and to take corrective and preventative measures.</p> <p>The EIA Report does not suggest any species specific monitoring but it is recommended that post construction monitoring is carried out for birds and bats, involving both 'activity surveys' and carcass searching. Best practice guidance (e.g. the Natural England publication, TIN069) in terms of birds stipulates that post-construction monitoring should be carried out. The CEMP included information in relation to environmental</p>	<p>Monitoring will be undertaken during the operation of the wind farm to ensure that the Optispeed system is adequately calibrated and maintained in order to limit noise levels through adjustments to the rotation speed of the turbines.</p> <p>An Independent Ornithological Expert (IOE) is to be appointed by EDPR. The IOE will have responsibility for bird and bat monitoring and surveys and for the implementation of appropriate mitigation measures as required.</p> <p>A Collision Risk Assessment is to be completed within two years of the wind</p>

IFC EHS Guidelines on Wind Energy	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<p>includes dead bird searches.</p> <ul style="list-style-type: none"> <li>• All monitoring should be carried out by qualified individuals and equipment should be properly maintained and calibrated</li> <li>• Monitoring data should be analysed and reviewed at regular intervals</li> <li>• Additional guidance on applicable sampling and analytical methods for emissions and effluents is provided in the General EHS Guidelines</li> </ul>	<p>monitoring to evaluate the effectiveness of environmental mitigation and to identify problems.</p> <p>Biodiversity monitoring has been completed at the site in 2011, from April to September and October to December 2011. The results of this monitoring are published in separate reports.</p>	<p>farm becoming operational.</p> <p>Development and implementation by the IOE of a detailed shut down procedure for the wind farm in accordance with EBRD and IFC standards. The IOE will have the authority to implement appropriate mitigation measures based on an agreed protocol, including reducing the speed of the turbines or, potentially, for the turbines to be temporarily turned off should a migrant flock be observed to be approaching.</p> <p>Monitoring should be undertaken for 5 years and completed in accordance with the conditions of the various environmental permits and authorisations. The monitoring results should be sent to the appropriate authorities and will inform future monitoring and survey techniques.</p> <p>Details of the biodiversity monitoring completed to date are provided in the Supplementary Information Report.</p>
<b>2.2 Occupational Health and Safety</b>			
<b>Occupational Health and Safety Guidelines</b>	<ul style="list-style-type: none"> <li>• Health and Safety performance should be evaluated against internationally published guidelines such as:</li> </ul>	According to the provisions of the Law 319/2006 and GD 1425/2006 amended by GD 955/2010 a Health and Safety Prevention and Protection Plan must be prepared	No further action is recommended.

IFC EHS Guidelines on Wind Energy	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<ul style="list-style-type: none"> <li>- Threshold Limit Value (TLV<sup>®</sup>)</li> <li>- Biological Exposure Indices (BIEs<sup>®</sup>)</li> <li>- American Conference of Governmental Industrial Hygienists (ACGIH)</li> <li>- Pocket Guide to Chemical Hazards published by the United States National institute for Occupational Health and Safety (NIOSH)</li> <li>- Permissible Exposure Limits (PELs) published by the Occupational Safety and health Administration of the united States (OSHA)</li> <li>- Indicative Occupational Exposure Limit Values published by European Union member states,</li> <li>- OR other similar sources</li> </ul>	<p>EDPR is working towards OHSAS 18001:2008 accreditation, according to which a yearly management plan for H&amp;S has to be prepared.</p> <p>Health and safety and Fire intervention contracts have been established with SC EUROFIN CONSULT SRL Bucuresti (no 189/14.01.2010, respectively nr. 273Bis from 01.07.2011)</p> <p>For the wind farm the ISO 14001 certification procedure started in January 2012 and an internal audit was carried out on 19th June. The certification audit will be in September 2012.</p>	
<b>Accident and Fatality Rates</b>	<ul style="list-style-type: none"> <li>• Projects should try to reduce the number of accidents among project workers (whether directly employed or subcontracted) to a rate of zero.</li> <li>• Facility rates may be</li> </ul>	<p>According to the provisions of the Law 319/2006 and GD 1425/2006 amended by GD 955/2010 all activities within the wind farm require specific H&amp;S instructions to be prepared.</p> <p>A Health and Safety Plan will be implemented during operation of the wind farm. The Health</p>	<p>OHSAS 18001:2008 standard is to be implemented and certified, according to which a yearly monitoring plan for H&amp;S has to be prepared (this includes inspections plan, trainings, air quality measurements etc.)</p>

IFC EHS Guidelines on Wind Energy	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<p>benchmarked against the performance of facilities in this sector in developed counties through consultation with published sources (e.g. US Bureau of Labour Statistics and UK Health and Safety Executive)</p>	<p>and Safety Plan will cover all relevant aspects to ensure compliance with health and safety legislation and international good practice relating to occupational and community health and safety and will include the following aspects:</p> <ul style="list-style-type: none"> <li>• Working at heights</li> <li>• Electrical safety</li> <li>• Emergency and evacuation procedures (e.g. in the event of a fire)</li> <li>• General health and safety measures</li> <li>• Access and security.</li> </ul> <p>The exact operational provisions and procedures are not available at this stage and will be set at the time the client will be tendering for the operational contract.</p>	
<b>Occupational Health and Safety Monitoring</b>	<ul style="list-style-type: none"> <li>• Monitoring should be designed and implemented by accredited professionals as part of a health and safety monitoring program.</li> <li>• Additional Guidance on health and Safety Guidance is provided in the General EHS Guidelines.</li> </ul>	<p>A Health and Safety Plan will be implemented during operation of the wind farm. The Health and Safety Plan will cover all relevant aspects to ensure compliance with health and safety legislation and international good practice relating to occupational and community health and safety and will include the following aspects:</p> <ul style="list-style-type: none"> <li>• Working at heights</li> <li>• Electrical safety</li> <li>• Emergency and evacuation procedures (e.g. in the event of a fire)</li> <li>• General health and safety measures</li> </ul>	<p>OHSAS 18001:2008 standard is to be implemented and certified, according to which a yearly monitoring plan for H&amp;S has to be prepared (this includes inspections plan, trainings, air quality measurements etc.)</p>

IFC EHS Guidelines on Wind Energy	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
		<ul style="list-style-type: none"> <li>Access and security.</li> </ul> <p>The exact operational provisions and procedures are not available at this stage and will be set at the time the client will be tendering for the operational contract.</p>	



**Table 2b) IFC EHS General Guidelines**

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
<b>1.0 Environmental</b>			
<b>1.1 Air Emissions and Ambient Air Quality</b>			
<b>General Approach</b>	<ul style="list-style-type: none"> <li>Impacts should be estimated through qualitative or quantitative assessment by baseline air quality assessments and atmospheric dispersion models.</li> <li>Local atmospheric, climatic and air quality data should be applied when modelling dispersion.</li> <li>The dispersion model applied should be internationally recognised or comparable. Model selection is dependent on the complexity and geo-morphology of the project site.</li> </ul>	<p>Due to the nature of the project, there will be no atmospheric emissions during the operational period of the wind farm.</p> <p>Section 4.2 of the EIA Report considers the potential impacts on air quality during the construction works; measures were suggested to limit pollution by dust.</p> <p>The EIA Report compares emission against the legal limits.</p> <p>No quantitative information on existing air quality conditions at the site or in the local area, or information on the approach used to determine the air quality impacts is provided within the EIA Report. It has therefore not been possible to assess the methodology which has been followed in respect of air quality impacts. However, given the nature of the Project and since the nearest residential receptor is more than 500m away, air quality impacts are not considered to be a significant concern.</p> <p>It understood that any impact occurring</p>	No further action is recommended.

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
		construction would have been minimal and mitigation measures according to environmental permits would have been implemented.	
<b>Projects Located in Degraded Airsheds or Ecologically Sensitive Areas</b>	<ul style="list-style-type: none"> <li>• Airsheds are defined as poor quality if national air quality standards or WHO Air Quality Guidelines are exceeded.</li> <li>• Projects in poor quality airsheds or ecologically sensitive area should ensure that any increase in pollution levels is as small as feasible.</li> <li>• Suitable mitigation measures should be implemented e.g. pollution control measures, or offset activities at installations controlled by the project sponsors or within the same airshed.</li> </ul>	<p>The EIA Report does not refer to the site being within an Airshed and therefore it is assumed that air quality is currently within the WHO air quality guidelines.</p> <p>One wind turbine is located on agricultural land within the Agighiol Hills SCI and 600m of overhead electricity lines and three pylons are located on agricultural land within the Deniz Tepe SPA. Discussions with the appropriate authorities have been held and mitigation measures have been identified.</p> <p>EDPR has confirmed that the mitigation measures required are in the process of being implemented. In terms of the mitigation measures identified for the Sarichioi site by EcoPontica and in the Environmental Agreement these measures are in the process of being implemented at the time of compiling this report. Mitigation measures which have been implemented to date by EDPR include installation of the artificial falcon nests, installation of flashing beacons on the turbines and painting of the turbine blades. These measures will be</p>	<p>Biodiversity monitoring should be implemented (including surveys for birds and bats) in accordance with permitting requirements, in particular those issued by EcoPontica and the Danube Delta Biosphere Reserve Authority (ABRDD).</p> <p>Details of the monitoring and mitigation requirements are provided in the Supplementary Information Report.</p>

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
		<p>implanted on a phased basis as the project progresses.</p> <p>Given the nature of the Project and since the nearest residential receptor is more than 500m away, air quality impacts are not considered to be a significant concern.</p>	
<b>Point Sources</b>	<ul style="list-style-type: none"> <li>Emissions from point sources should be avoided and controlled according to good international industry practice applicable to the relevant industry sector, depending on ambient conditions, through the combined application of process modifications and emission controls.</li> </ul>	There are no point sources of emissions within the development.	No further action is recommended.
<b>Stack Height</b>	<ul style="list-style-type: none"> <li>The stack height for all point sources of emissions, whether 'significant' or not, should be designed according to GIIP to avoid excessive groundlevel concentrations due to downwash, wakes and eddy effects and to ensure reasonable diffusion to minimise impacts.</li> <li>Non-significant sources of emissions, including small combustion sources, should also use GIIP in stack design.</li> </ul>	There are no point sources of emissions within the development.	No further action is recommended.
<b>Small Combustion Facilities Emissions Guidelines</b>	<ul style="list-style-type: none"> <li>These guidelines relate to facilities with a total, rated heat input capacity of between 3 Megawatt thermal (MWth) and 50 MWth. The emissions guidelines are applicable to installations operating more than 500 hours per year and with an annual capacity utilisation of more than 30%.</li> </ul>	Not applicable to the project.	No further action is recommended.

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<ul style="list-style-type: none"> <li>Lower emission values may apply if the proposed facility is located in an ecologically sensitive airshed or airshed with poor air quality and in order to address potential cumulative impacts from installation of more than one combustion plant.</li> <li>Emission guidelines are provided in Table 1.1.2, page 7 of the EHS General Guidelines.</li> </ul>		
<b>Fugitive Sources</b>	<ul style="list-style-type: none"> <li>Refers to emissions that are distributed spatially over a wide area and not confined to a discharge point. Examples include volatile organic compounds and particulate matter.</li> <li>Projects with potentially significant fugitive sources of emissions should establish the need for ambient air quality assessment and monitoring processes.</li> <li>Open burning of solid wastes is not considered good practice and should be avoided.</li> <li>Prevention and control techniques for VOC emissions associated with equipment leaks and handling of chemicals are provided.</li> <li>Prevention and control measures are recommended to control sources of dust emissions.</li> <li>Ozone depleting substances – no new systems or processes should be installed</li> </ul>	<p>The EIA Report specifies the sources of potential pollutants during the construction phase: soil sources (due to the specific construction activities) – excavations, backfilling, infrastructure. All measures suggested to mitigate these are in accordance with environmental permits and were carried out during this phase.</p> <p>Any atmospheric emissions, such as dust, during construction are expected to have been small-scale, localised and temporary.</p>	No further action is recommended.

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<p>using CFCs, halons, 1,1,1-trichloroethane, carbon tetrachloride, methyl bromide or HBFCs. HCFCs should only be considered as interim alternatives as determined by the host country commitments and regulations.</p>		
<b>Mobile Sources Land-Based</b>	<ul style="list-style-type: none"> <li>Emissions from on-road and off-road vehicles should comply with national or regional programs.</li> <li>In the absence of these certain approaches should be considered, e.g. fleet owners / operator should implement the manufacturer recommended maintenance programs, driver training, fleet management to reduce potential impacts.</li> </ul>	<p>The EIA Report considers emissions from plant associated with the construction of the wind farm.</p> <p>A Construction Environmental Management Plan (CEMP) was prepared to control emissions during construction activities, including emissions from construction equipment and dust from construction works.</p> <p>No mobile sources of emissions are anticipated during operation of the wind farm.</p>	<p>No further action is recommended.</p>
<b>Greenhouse Gases (GHG)</b>	<ul style="list-style-type: none"> <li>GHGs may be generated from direct emissions within the project boundary and indirect emissions associated with off-site production of power used by the project.</li> <li>Recommendations for reduction and control of GHG include: <ul style="list-style-type: none"> <li>- Carbon financing</li> <li>- Enhancement of energy efficiency</li> <li>- Protection and enhancement of sinks and reservoirs of GHG</li> <li>- Promotion, development and</li> </ul> </li> </ul>	<p>Given the nature of the project it is anticipated that direct and indirect GHG emissions from the project will be minimal.</p> <p>The greenhouse gas savings potential for the wind farm is provided in the Gap Analysis Report.</p>	<p>No further action is recommended.</p>

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<p>increased use of renewable forms of energy</p> <ul style="list-style-type: none"> <li>- Carbon capture and storage technologies</li> </ul>		
<b>Monitoring</b>	<ul style="list-style-type: none"> <li>• A systematic process is recommended to ensure that data collected are adequate for their intended purpose. The air quality monitoring program should consider the following elements: <ul style="list-style-type: none"> <li>- Monitoring parameters</li> <li>- Baseline calculations</li> <li>- Monitoring type and frequency</li> <li>- Monitoring locations</li> <li>- Sampling and analysis methods – apply national or international methods for sampling collection and analysis</li> </ul> </li> <li>• Additional monitoring approaches are recommended for boilers of various sizes, turbines and engines – in relation to annual stack emission testing and emission monitoring requirements</li> </ul>	<p>The EIA Report does not recommend any air quality or dust monitoring.</p> <p>Due to the nature of the project and since the nearest residential property is more than 500m from the perimeter of the site this is not likely to be a significant issue.</p>	<p>No further action is recommended.</p>
<b>1.2 Energy Conservation</b>			
<b>Applicability and Approach</b>	<ul style="list-style-type: none"> <li>• Applies to facilities or projects that consume energy in process heating and cooling; process and auxiliary systems (such as motors, pumps and fans); compressed air systems and heating, ventilation and air conditioning systems (HVAC); and lighting systems.</li> </ul>	<p>The operation of the wind farm will produce, rather than consume, energy. Therefore this is not considered significant.</p>	<p>No further action is recommended.</p>

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<ul style="list-style-type: none"> <li>• Energy management programs should include: identification and regular measurement and reporting of principal energy flows, preparation of mass and energy balance, review of energy performance targets, monitoring of energy flows with performance targets, review of targets.</li> <li>• For any energy-using system a systematic analysis of energy efficiency improvements and cost reduction opportunities should include a hierarchical examination of opportunities to:</li> <li>• Demand/load side management by reducing loads on the energy system</li> <li>• Supply side management by e.g. reducing losses in energy distribution, improve energy conversion efficiency, exploit energy purchasing opportunities, use lower-carbon fuels</li> </ul>		
<b>Process Heating</b>	<ul style="list-style-type: none"> <li>• Process heating is vital to many manufacturing processes, including heating for fluids, calcining, drying, heat treating, metal heating, melting agglomeration, curing and forming.</li> <li>• Examination of savings opportunities should be directed by the results of heat and mass balance, e.g.               <ul style="list-style-type: none"> <li>- heating load reduction – ensure adequate insulation, recover heat, control process temperature and other</li> </ul> </li> </ul>	There are no process heating requirements for the project.	No further action is recommended.



IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<ul style="list-style-type: none"> <li>parameters accurately</li> <li>- heat distribution systems – repair distribution system leaks, avoid steam leaks, insulate distribution system vessels and pipework</li> <li>- energy conversion system efficiency improvements – regular monitoring of CO, oxygen or CO2 content of flue gases, minimise the number of boilers to meet loads, use flue dampers</li> </ul>		
<b>Process Cooling</b>	<ul style="list-style-type: none"> <li>Commonly used and cost-effective measures to improve process cooling efficiency include in respect of:               <ul style="list-style-type: none"> <li>- Load reduction – ensure adequate insulation, control process temperature accurately to avoid overcooling</li> <li>- Energy conversion – consider system design, minimising temperature differences, elevating evaporating temperature, reducing condensing temperature</li> <li>- Refrigerant compression efficiency</li> <li>- Refrigeration system auxiliaries (e.g. evaporator fans and chilled water pumps)</li> </ul> </li> </ul>	There are no process cooling requirements for the project.	No further action is recommended.
<b>Compressed Air Systems</b>	<ul style="list-style-type: none"> <li>In many compressed air systems the energy contained in compressed air delivered to the user is often 10% or less of energy used in air compression. Savings are often possibly through:</li> </ul>	It is assumed that there are no compressed air systems within the project.	No further action is recommended.

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<ul style="list-style-type: none"> <li>- Load reduction – review air use reduction opportunities</li> <li>- Distribution – monitor pressure losses, use adequately sized distribution pipework</li> </ul>		
<b>1.3 Wastewater and Ambient Water Quality</b>			
<b>Applicability and Approach</b>	<ul style="list-style-type: none"> <li>• Applies to projects that have either direct or indirect discharge of process wastewater, waste from utility operations or stormwater to the environment. Also applicable to industrial discharges to sanitary sewers that discharge to the environment without any treatment.</li> <li>• Projects with the potential to generate process wastewater, sanitary (domestic) sewage or stormwater should incorporate the necessary precautions to avoid, minimise and control adverse impacts to human health, safety or the environment.</li> <li>• Facilities should:               <ul style="list-style-type: none"> <li>- Understand the quality, quantity, frequency and sources of liquid effluents</li> <li>- Plan and implement the segregation of liquid effluents to industrial, utility, sanitary and stormwater categories</li> <li>- Identify opportunities to prevent or reduce wastewater pollution</li> <li>- Assess compliance of wastewater discharges with applicable discharge standard or water quality standard</li> </ul> </li> </ul>	<p>Section 4.1.4 states that construction and operation wastewater will be collected in special containers and transported off-site for disposal.</p> <p>A CEMP was prepared and implemented, this included measures relating to the control of wastewater during construction.</p>	No further action is recommended.

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<ul style="list-style-type: none"> <li>- Use water efficiently to reduce the amount of wastewater generation</li> <li>- Process modification</li> <li>- Apply wastewater treatment techniques</li> <li>- Provide appropriate level of wastewater treatment required prior to discharge according to national and local standards, assimilative capacity of the receiving water, use of the receiving water body, presence of sensitive receptors.</li> </ul>		

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
<b>General Liquid Effluent Quality</b>	<ul style="list-style-type: none"> <li>Discharges of process wastewater, sanitary wastewater, wastewater from utility operations or stormwater to surface water should not result in contaminant concentrations in excess of local ambient water quality criteria.</li> <li>Receiving water use and assimilative capacity, taking other sources of discharges to the receiving water into consideration, should also influence the acceptable pollution loadings and effluent discharge quality.</li> <li>When setting project-specific performance levels of wastewater effluent additional considerations include:</li> <li>Process wastewater treatment standards consistent with applicable industry sector EHS Guidelines</li> <li>Compliance with national or local standards for sanitary wastewater discharges</li> <li>Temperature of wastewater prior to discharge does not result in an increase greater than 3oC of ambient temperature at the edge of a scientifically established mixing zone which takes into account ambient water quality, receiving water use and assimilative capacity among other considerations.</li> </ul>	<p>Section 4.1.4 of the EIA Report states that waste water generated during construction and operation will be collected in special containers and transported off-site for disposal.</p> <p>There will be no connection to the site for water supply or sewerage.</p> <p>A CEMP was prepared and implemented, this included measures relating to the control of wastewater during construction.</p>	<p>No further action is recommended.</p>

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<ul style="list-style-type: none"> <li>Discharges of industrial wastewater, sanitary wastewater, wastewater from utility operations or stormwater to sanitary sewer systems should:               <ul style="list-style-type: none"> <li>Meet the pre-treatment and monitoring requirements of the sewer system into which it discharges</li> <li>Not interfere, directly or indirectly, with the operation and maintenance of the collection and treatment systems, or pose a risk to worker health and safety or adversely impact characteristics of residuals from wastewater treatment operations</li> <li>Be discharged into municipal or centralised wastewater treatment systems that have adequate capacity to meet regulatory requirements.</li> </ul> </li> <li>Pre-treatment of wastewater is required to meet regulatory requirements before discharge from the project site if the receiving wastewater treatment system does not have adequate capacity to maintain regulatory compliance.</li> </ul>	<p>Section 4.1.4 of the EIA Report states that waste water generated during construction and operation will be collected in special containers and transported off-site for disposal.</p> <p>There will be no connection to the site for water supply or sewerage.</p> <p>A CEMP was prepared and implemented, this included measures relating to the control of wastewater during construction.</p>	<p>No further action is recommended.</p>

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<ul style="list-style-type: none"> <li>Land application of treated effluent, quality of treated process wastewater, wastewater from utility operations or stormwater discharged on land should be established based on local regulatory requirements.</li> <li>Where land is used as part of the treatment system and the ultimate receptor is surface water, water quality guidelines for surface water discharges specific to the industry sector process should apply.</li> <li>Potential impact on soil, groundwater and surface water, in the context of protection, conservation and long-term sustainability of water and land resources, should be assessed when land is used as part of any wastewater treatment system.</li> </ul>	This is not applicable to the wind farm project.	No further action is recommended.

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<ul style="list-style-type: none"> <li>• Septic systems, should only be used for treatment of sanitary sewage and are unsuitable for industrial wastewater treatment.</li> <li>• Where septic systems are used they should be:               <ul style="list-style-type: none"> <li>- Properly designed and installed in accordance with local regulations</li> <li>- Well maintained to allow effective operation</li> <li>- Installed in areas with sufficient soil percolation for the design wastewater loading rate</li> <li>- Installed in areas of stable soils that are nearly level, well drained and permeable with enough separation between the field drain and groundwater table or other receiving waters</li> </ul> </li> </ul>	This is not applicable to the wind farm project.	No further action is recommended.



IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
<b>Wastewater Management</b>	<ul style="list-style-type: none"> <li>Industrial wastewater, includes process wastewater, wastewater from utility operations, runoff from process and material staging areas and miscellaneous activities (including from laboratories, maintenance shops etc.)</li> <li>Process wastewater – choice of treatment is driven by wastewater characteristics. One or more treatment technologies may be required to maintain compliance with regulatory requirements</li> <li>Wastewater from utilities operations – include cooling systems and demineralisation systems. Recommended strategies include               <ul style="list-style-type: none"> <li>- adoption of water conservation opportunities</li> <li>- use of heat recovery methods or other cooling methods to reduce the temperature of heated water prior to discharge to ensure the discharge water temperature does not result in an increase greater than 3oC of ambient temperature at the edge of a scientifically established mixing zone</li> <li>- minimising use of antifouling and corrosion inhibiting chemicals</li> <li>- testing for residual biocides and other pollutants of concern</li> </ul> </li> </ul>	<p>Section 4.1.4 of the EIA Report states that waste water generated during construction and operation will be collected in special containers and transported off-site for disposal.</p> <p>Water requirements for the wind farm will be limited to toilets and kitchen facilities in the substation on-site.</p> <p>Waste water will be collected in a septic tank and emptied by a specialist contractor for off-site disposal.</p> <p>A CEMP was prepared and implemented, this included measures relating to the control of wastewater during construction.</p>	<p>No further action is recommended.</p>

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<ul style="list-style-type: none"> <li>Stormwater management, reduce the need for stormwater treatment by for example:               <ul style="list-style-type: none"> <li>Separate stormwater from process and sanitary wastewater</li> <li>Prevent surface runoff from process areas or segregate areas from potentially less contaminated runoff</li> <li>Where water quality criteria allow, stormwater should be managed as a resource</li> <li>Install and maintain oil water separators and grease traps at refuelling facilities, workshops, fuel storage areas</li> </ul> </li> <li>Dispose of sludge in compliance with local regulatory requirements</li> </ul>	This is not applicable to the wind farm project.	No further action is recommended.

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<ul style="list-style-type: none"> <li>Sanitary wastewater includes effluents from domestic sewage, food service and laundry facilities, laboratories etc.</li> <li>Sanitary wastewater management strategies include: <ul style="list-style-type: none"> <li>Segregation of wastewater streams to ensure compatibility with selected treatment option</li> <li>Pre-treatment of oil and grease containing effluents</li> <li>Treatment to meet national or local standards for sanitary wastewater discharges to surface water or discharge to a septic system or land</li> <li>Disposal of sludge in compliance with local regulatory requirements</li> </ul> </li> </ul>	Wastewater from operation of the wind farm is limited to toilets and kitchen facilities in the substation on-site will be collected in a septic tank and emptied by a specialist contractor for off-site disposal.	No further action is recommended.
	<ul style="list-style-type: none"> <li>Emissions from wastewater treatment operations: <ul style="list-style-type: none"> <li>Air emissions may include hydrogen sulphide, methane, ozone, VOCs and bioaerosols</li> <li>Odour emissions can be a nuisance to workers and the local community</li> </ul> </li> </ul>	This is not applicable to the wind farm project.	No further action is recommended.
	<ul style="list-style-type: none"> <li>Residuals from wastewater treatment operations – sludge is to be evaluated on a case-by-case basis to establish whether it constitutes a hazard or non-hazardous waste and managed accordingly (see waste management section below)s.</li> </ul>	This is not applicable to the wind farm project.	No further action is recommended.

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<ul style="list-style-type: none"> <li>Occupational health and safety issues in wastewater treatment operations, include physical, chemical and biological hazards e.g. inhalation of VOCs, trips and falls into tanks, confined spaces, contact with pathogens, hazardous chemicals.</li> </ul>	This is not applicable to the wind farm project.	No further action is recommended.
<b>Monitoring</b>	<ul style="list-style-type: none"> <li>The wastewater and water quality monitoring program should consider the following:               <ul style="list-style-type: none"> <li>Monitoring parameters</li> <li>Monitoring type and frequency</li> <li>Monitoring locations</li> <li>Data quality</li> </ul> </li> </ul>	No wastewater and/or water quality monitoring is required.	No further action is recommended.
<b>1.4 Water Conservation</b>			
<b>Applicability and Approach</b>	<ul style="list-style-type: none"> <li>Water conservation programs should be implemented commensurate with the magnitude and cost of water use and should promote the continuous reduction in water consumption and achieve savings in water costs.</li> <li>Water conservation measures may include:               <ul style="list-style-type: none"> <li>Storm/rainwater harvesting and use</li> <li>Zero discharge design /use of treated wastewater in project design processes</li> <li>Use of localised recirculation systems</li> <li>Use of dry processes</li> <li>Process water system pressure management</li> <li>Project design to have measures for</li> </ul> </li> </ul>	<p>It is understood that bottled water will be provided for drinking purposes and other water required for domestic uses will be supplied by a contractor. An underground tank will be used for the storage of non-potable domestic water.</p> <p>Groundwater is present at a depth of 32m below ground level and will not be affected during operation of the wind farm.</p>	No further action is recommended.

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	adequate water collection, spill control and leakage control system		
<b>Water Monitoring and Management</b>	<ul style="list-style-type: none"> <li>The essential elements of a water management program involve:               <ul style="list-style-type: none"> <li>- Identification, regular measurement and recording of principal flows within a facility</li> <li>- Definition and regular review of performance targets</li> <li>- Regular comparison of water flows with performance targets to identify where action should be taken to reduce water use.</li> </ul> </li> </ul>	As indicated above the water supply requirements of the wind farm will be minimal. Therefore, no water monitoring is required at the site.	No further action is recommended.
<b>Process Water Reuse and Recycling</b>	<ul style="list-style-type: none"> <li>Opportunities for water savings in industrial processes are highly industry-specific. The following should be considered in conjunction with a metering system:               <ul style="list-style-type: none"> <li>- Water reuse e.g. reusing wastewater from one process for another with less exacting water requirements</li> <li>- Flow control optimisation.</li> </ul> </li> </ul>	As indicated above the water supply requirements of the wind farm will be minimal and will be limited to domestic requirements for security personnel based at the site.	No further action is recommended.
<b>Building Facility Operations</b>	<ul style="list-style-type: none"> <li>Savings in sanitary water can be identified as follows:               <ul style="list-style-type: none"> <li>- Set targets for daily water use per employee</li> <li>- Regularly maintain plumbing</li> <li>- Install self-closing taps, automatic shut-off valves, spray nozzles, pressure reducing valves and water conserving fixtures</li> </ul> </li> </ul>	There will be no connection to the site for water supply or sewerage.	No further action is recommended.

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<ul style="list-style-type: none"> <li>- Operate dishwashers and laundries on full loads</li> <li>- Install water-saving equipment in lavatories</li> </ul>		
<b>Cooling Systems</b>	<ul style="list-style-type: none"> <li>• Water conservation opportunities include:               <ul style="list-style-type: none"> <li>- Use of closed circuit cooling systems</li> <li>- Limit condenser or cooling tower blowdown to the minimum required</li> <li>- Use of air cooling rather than evaporative cooling</li> <li>- Use of treated wastewater for cooling towers</li> <li>- Reusing / recycling cooling tower blowdown.</li> </ul> </li> </ul>	The project will not have any cooling systems.	No further action is recommended.
<b>Heating Systems</b>	<ul style="list-style-type: none"> <li>• Heating systems based on the circulation of hot water (which do not consume water) should be closed.</li> <li>• Large quantities of water may be used by steam systems and this can be reduced by:               <ul style="list-style-type: none"> <li>- Repair of steam and condensate leaks</li> <li>- Return of condensate to the boilerhouse and use of heat exchangers rather than direct steam injection</li> <li>- Flash steam recovery</li> <li>- Minimising boiler blowdown</li> <li>- Minimising deaerator heating</li> </ul> </li> </ul>	Facilities will be provided locally for heating and hot water for the welfare facilities on site.	No further action is recommended.
<b>1.5 Hazardous Materials Management</b>			
<b>Applicability and Approach</b>	<ul style="list-style-type: none"> <li>• Apply to projects that use, store or handle any quantity of hazardous materials –</li> </ul>	The only hazardous substances stored on the site are anticipated to be new and	A waste management plan will be implemented and records

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<p>defined as materials that represent a risk to human health, property or the environment due to their physical or chemical characteristics.</p> <ul style="list-style-type: none"> <li>Refer to guidance on Occupational Health and Safety Management (Section 2), Emergency Preparedness and Response (Section 3.7) and on the Transport of Hazardous Materials (Section 3.5).</li> <li>The overall objective is to avoid or, when avoidance is not feasible, minimise uncontrolled releases of hazardous materials or accidents during their production, handling, storage and use. This can be achieved by: <ul style="list-style-type: none"> <li>Establishing hazardous materials management priorities based on hazard analysis of risk operations</li> <li>Where practicable, avoiding or minimising the use of hazardous materials.</li> <li>Preventing uncontrolled releases of hazardous materials to the environment</li> <li>Using engineering controls</li> <li>Implementing management controls to address residual risks.</li> </ul> </li> </ul>	<p>waste oils from maintenance of the equipment.</p> <p>Waste materials generated as part of the project are likely to be minimal. Waste (including waste oil) generated during routine maintenance activities will be removed from site by the contractor and disposed of in an appropriate manner in accordance with applicable legislation.</p>	<p>maintained.</p>
<b>General Hazardous Materials Management</b>	<ul style="list-style-type: none"> <li>Projects which manufacture, handle, use or store hazardous materials should establish management programs that are commensurate with the potential risks</li> </ul>	<p>As indicated above, hazardous materials will be limited to oils associated with maintenance of the wind turbines and will be managed by the specialist maintenance</p>	<p>No further action is recommended.</p>



IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<p>present.</p> <ul style="list-style-type: none"> <li>• The main objectives should be the protection of the workforce and prevention and control of releases and accidents.</li> <li>• Potentially applicable elements of a management program include: <ul style="list-style-type: none"> <li>- Hazard Assessment – establish the level of risk through an on-going assessment process based on types and amounts of hazardous materials present, potential spill and release scenarios, potential for uncontrolled reactions, potential consequences based on the physical-geographical characteristics of the project site.</li> <li>- Management Actions – to be detailed in a Hazardous Materials Management Plan, including release prevention and control planning, essential elements of occupational health and safety management (see Section 2.0), integration with other elements of the facility management systems.</li> <li>- Preventative Measures, such as to prevent hazardous material releases from processes, overfill protection, reaction, fire and explosion prevention</li> <li>- Control Measures, such as secondary containment, storage tank and piping leak detection, controls relating to underground storage tanks</li> </ul> </li> </ul>	<p>contractor.</p>	

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
<b>Management of Major Hazards</b>	<ul style="list-style-type: none"> <li>• Project involving production, handling and storage of hazardous materials at or above threshold limits (established for emergency planning by the US EPA in Protection of Environment) should prepare a Hazardous Materials Risk Management Plan.</li> <li>• The objective of this guidance is the prevention and control of catastrophic releases of toxic, reactive, flammable or explosive chemicals that may result in toxic, fire or explosion hazards.</li> <li>• The Hazardous Materials Risk Management Plan shall contain the following: <ul style="list-style-type: none"> <li>- Management Actions – including compliance audit, incident investigation, employee participation, contractor control and training</li> <li>- Preventative Measures to ensure that safety-related aspects of the process and equipment are considered, limits implemented and accepted standards and codes are adopted where applicable – including process safety information, operating procedures and other procedures</li> <li>- Emergency Preparedness and Response Plan, including planning co-ordination, emergency equipment, training;</li> <li>- Community Involvement and</li> </ul> </li> </ul>	This is not applicable to this wind farm project.	No further action is recommended.

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	Awareness, including potential for effects to human health or the environment following an incident, safety measures to be adopted, access to information and opportunity to contribute effectively to decisions		
<b>1.6 Waste Management</b>			
<b>Applicability and Approach</b>	<ul style="list-style-type: none"> <li>• Apply to projects that generate, store or handle any quantity of waste (separate EHS guidance is provided for Waste Management Facilities), both hazardous and non-hazardous waste.</li> <li>• Facilities that generate and store wastes should practice the following:               <ul style="list-style-type: none"> <li>- Establishing waste management priorities at the outset of activities based on an understanding of potential EHS risks and impacts and considering waste generation and its consequences</li> <li>- Establishing a waste management hierarchy that considers prevention, reduction, reuse, recovery, recycling, removal and finally disposal of wastes</li> <li>- Avoiding or minimising the generation of waste materials as far as practicable</li> <li>- Where waste cannot be avoided but has been minimised, recovering and reusing waste</li> <li>- Where waste cannot be recovered or</li> </ul> </li> </ul>	<p>The EIA Report identifies stages of the project where wastes may be generated, i.e. site preparation, commissioning, operation. Waste may be disposed of at the closest landfill.</p> <p>During operation waste hydraulic oil will be produced. This will be managed and disposed of off-site by the specialist maintenance contractor.</p> <p>When the turbines are decommissioned various materials resulting will be suitable for recycling or disposal.</p> <p>A construction waste management plan was developed. This identified methods to reduce waste generation and re-use and recycle wastes in preference to disposal.</p>	A waste management plan will be implemented and records maintained.

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	reused, treating, destroying and disposing of it in an environmentally sound manner.		
<b>General Waste Management</b>	<ul style="list-style-type: none"> <li>Waste management should be addressed through a Waste Management System that addresses issues linked to waste minimisation, generation, transport, disposal and monitoring.</li> </ul>	The EIA Report provides a general assessment of waste management (the operation of the scheme will result in limited amounts of waste).	A waste management plan will be implemented and records maintained.
	<p>Waste management planning:</p> <ul style="list-style-type: none"> <li>Facilities should characterise their waste according to composition, source, types of waste, generation rates, or according to local regulatory requirements.</li> <li>Effective planning should include:               <ul style="list-style-type: none"> <li>Review of new waste sources during planning, siting and design,</li> <li>Collection of data and information about the process and waste streams,</li> <li>Establishment of priorities based on a risk analysis that takes into account the potential EHS risks and availability of infrastructure to manage the waste in an environmentally sound manner</li> <li>Definition of opportunities for source reduction as well as reuse and recycling</li> <li>Definition of procedures and controls for on-site storage</li> <li>Definition of options, procedures, controls for treatment and final disposal</li> </ul> </li> </ul>	The operation of the scheme will only produce minimal waste (e.g. waste oil) from maintenance activities and small amounts of domestic waste.	A waste management plan will be implemented and records maintained.

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<p>Waste Prevention:</p> <ul style="list-style-type: none"> <li>Processes should be designed and operated to prevent, or minimise, the quantities of waste generated and hazards associated with the wastes generated in accordance with the following strategy: <ul style="list-style-type: none"> <li>- Substituting raw materials or inputs with less hazardous materials or with those where processing generates lower waste volumes</li> <li>- Applying manufacturing processes that convert materials efficiently, providing higher product output yields</li> <li>- Instituting good housekeeping and operating practices</li> <li>- Instituting procurement measures that recognise opportunities to return usable materials such as containers and which prevents over ordering of materials</li> <li>- Minimising hazardous waste generation by implementing stringent waste segregation to prevent co-mingling of non-hazardous and hazardous waste.</li> </ul> </li> </ul>	<p>The operation of the scheme will only produce minimal waste (e.g. waste oil) from maintenance activities and small amounts of domestic waste.</p>	<p>A waste management plan will be implemented and records maintained.</p>

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	<p>Recycling and Re-use:</p> <ul style="list-style-type: none"> <li>• The total amount of waste may be significantly reduced through the implementation of recycling plans, which should consider the following: <ul style="list-style-type: none"> <li>- Evaluation of waste production processes and identification of potentially recyclable materials</li> <li>- Identification and recycling of products that can be reintroduced into the manufacturing process or activity at the site</li> <li>- Investigation of external markets for recycling by other industrial processing operations located in the neighbourhood or region</li> <li>- Establishing recycling objectives and formal tracking of waste generation and recycling rates</li> <li>- Providing training and incentives to employees in order to meet objectives</li> </ul> </li> </ul>	<p>The operation of the scheme will only produce minimal waste (e.g. waste oil) from maintenance activities and small amounts of domestic waste.</p>	<p>A waste management plan will be implemented and records maintained.</p>

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	<p>Treatment and Disposal:</p> <ul style="list-style-type: none"> <li>• If waste materials are still generated after the implementation of feasible waste prevention, reduction, reuse, recovery and recycling measures, waste materials should be treated and disposed of and all measures should be taken to avoid potential impacts to human health and the environment.</li> <li>• Selected management approaches should be consistent with the characteristics of the waste and local regulations and many include one or more of the following: <ul style="list-style-type: none"> <li>- On-site or off-site biological, chemical or physical treatment of the waste material to render it non-hazardous prior to final disposal</li> <li>- Treatment or disposal at permitted facilities designed to receive the waste, e.g. composting for organic non-hazardous wastes, properly designed, permitted and operated landfills or incinerators, or other methods known to be effective such as bioremediation.</li> </ul> </li> </ul>	<p>The operation of the scheme will only produce minimal waste (e.g. waste oil) from maintenance activities and small amounts of domestic waste.</p>	<p>A waste management plan will be implemented and records maintained.</p>



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<b>Hazardous Waste Management</b>	<ul style="list-style-type: none"> <li>• Hazardous wastes must always be segregated from non-hazardous wastes</li> <li>• If the generation of hazardous waste cannot be prevented through implementation of the above general waste management practices, its management should focus on the prevention of harm to health, safety and the environment, according to the following principles:               <ul style="list-style-type: none"> <li>- Understanding potential impacts and risks associated with management of the waste during its complete life cycle</li> <li>- Ensuring that contractors handling, treating and disposing of hazardous waste are reputable and licensed appropriately, following GIIP for the waste being handled.</li> <li>- Ensuring compliance with applicable local and international regulations</li> </ul> </li> </ul>	The operation of the scheme will only produce minimal waste (e.g. waste oil) from maintenance activities and small amounts of domestic waste.	A waste management plan will be implemented and records maintained.

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	<p>Waste Storage</p> <ul style="list-style-type: none"> <li>Hazardous waste must be stored so as to prevent or control accidental releases to air, soil and water resources, including: <ul style="list-style-type: none"> <li>To prevent co-mingling or contact between incompatible wastes, allows for inspection between containers to monitor leaks or spills</li> <li>Stored in closed containers away from direct sunlight, wind and rain</li> <li>Provided with secondary containment systems to prevent loss to the environment</li> <li>Secondary containment to be provided where liquid wastes are stored in volumes greater than 220 litres, volume of secondary containment to be at least 110% of the largest storage container or 25% of the total storage capacity (whichever is greater)</li> <li>Provide adequate ventilation where volatile wastes are stored.</li> <li>Special management actions are also required, including labelling of containers, limiting access to hazardous waste storage areas to employees who have received proper training, clearly identifying the storage area, periodic inspections of waste storage areas, preparing and implementing spill response and emergency plans, avoiding underground storage tanks and underground piping of hazardous waste.</li> </ul> </li> </ul>	<p>The operation of the scheme will only produce minimal waste (e.g. waste oil) from maintenance activities and small amounts of domestic waste.</p>	<p>A waste management plan will be implemented and records maintained.</p>

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<p>Transportation:</p> <ul style="list-style-type: none"> <li>• To be conducted so as to prevent or minimise spills, releases and exposures to employees and the public</li> <li>• All waste containers for off-site shipment to be secured and labelled with contents and associated hazardous and properly loaded on the transport vehicle before leaving the site and accompanied by a shipping paper that describes the load and its associated hazards, consistent with guidance provided in Section 3.4 Transport of Hazardous Materials.</li> </ul>	<p>The operation of the scheme will only produce minimal waste (e.g. waste oil) from maintenance activities and small amounts of domestic waste.</p>	<p>A waste management plan will be implemented and records maintained.</p>

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	<p>Treatment and Disposal</p> <ul style="list-style-type: none"> <li>In addition to recommendations applicable for general wastes, issues specific to hazardous wastes should be considered: <ul style="list-style-type: none"> <li>Commercial or government waste contractors – do they have the technical capability to reduce the immediate and future impact to the environment, have all the required permits etc., been secured through use of formal procurement agreements</li> <li>In the absence of qualified waste disposal operators project sponsors should consider installing on-site waste treatment or recycling processes or as a final option constructing facilities that will provide for the environmental sound long-term storage of wastes on-site or off-site until external options become available</li> </ul> </li> </ul>	<p>The operation of the scheme will only produce minimal waste (e.g. waste oil) from maintenance activities and small amounts of domestic waste.</p>	<p>A waste management plan will be implemented and records maintained.</p>

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
00030824	<ul style="list-style-type: none"> <li>Monitoring activities associated with the management of hazardous and non-hazardous waste should include:               <ul style="list-style-type: none"> <li>Regular inspection of waste storage collection and storage areas for evidence of accidental releases and to verify that wastes are properly labelled and stored</li> <li>(additional monitoring requirements apply when significant quantities of hazardous wastes are generated and stored on-site)</li> <li>Regular audits of waste segregation and collection practices</li> <li>Tracking of waste generation trends by type and amount</li> <li>Keeping manifests or other records that document the amount of waste generated and its destination</li> <li>Periodic auditing of third party treatment, and disposal services including re-use and recycling facilities when significant quantities of hazardous wastes are managed by third parties.</li> <li>Regular monitoring of groundwater quality where hazardous waste is stored and/or pre-treated on-site</li> <li>Monitoring records for hazardous waste collected, stored or shipped to include physical state, quantity, tracking documentation, method and date of storing, treating or disposing, location of each hazardous waste within the facility and quantity at each location.</li> </ul> </li> </ul>	<p>The operation of the scheme will only produce minimal waste (e.g. waste oil) from maintenance activities and small amounts of domestic waste.</p>	<p>A waste management plan will be implemented and records maintained.</p>

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<b>1.7 Noise</b>			
<b>Prevention and control</b>	<ul style="list-style-type: none"> <li>Noise prevention and mitigation measures should be applied where predicted or measured noise impacts from a project facility exceed the applicable noise level guideline at the most sensitive point of reception.</li> <li>The preferred method for control noise from stationary sources is to implement noise control measures at source.</li> <li>Methods for prevention and control of noise emissions depend on the source and proximity of receptors.</li> <li>Noise reduction options that should be considered include: <ul style="list-style-type: none"> <li>Installing silencers or suitable mufflers on engine exhausts, installing acoustic enclosures</li> <li>Improving the acoustic performance of constructed buildings through sound insulation</li> <li>Limiting the hours of operation</li> <li>Installing acoustic barriers without gaps</li> <li>Siting facilities away from community areas if possible</li> <li>Developing a mechanism to record and respond to complaints.</li> </ul> </li> </ul>	The predicted noise impact is low. The likelihood of compliance with the EHS Guidelines is high.	Noise monitoring at the nearest noise sensitive receptor is recommended to demonstrate compliance with the applicable standards and EHS Guidelines.
<b>Noise Guidelines Level</b>	<ul style="list-style-type: none"> <li>Noise impacts should not exceed the levels presented in Table 1.7.7 of the EHS General Guidelines or result in a maximum</li> </ul>	Predicted noise levels comply with the absolute criteria outlined in the EHS Guidelines. Existing ambient noise levels	Noise monitoring at the nearest noise sensitive receptor is recommended to demonstrate

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	increase in background levels of 3dB at the nearest receptor location off-site.	are unknown.	compliance with the applicable standards and EHS Guidelines.
<b>Monitoring</b>	<ul style="list-style-type: none"> <li>Noise monitoring may be carried out to establish the existing ambient noise levels in the area of the facility or for verifying operational phase noise levels</li> <li>Noise monitoring programs should be designed and conducted by trained specialists. Monitoring periods should be sufficient for statistical analysis, monitors should be located approximately 1.5m above the ground no closer than 3m to any reflecting surface.</li> <li>The noise limit is generally represented by the background or ambient noise levels that would be present in the absence of the facility.</li> </ul>	Noise monitoring has not been undertaken as part of the EIA. Noise monitoring is required to demonstrate compliance with EHS Guidelines.	Noise monitoring at the nearest noise sensitive receptor is recommended to demonstrate compliance with the applicable standards and EHS Guidelines.
<b>1.8 Contaminated Land</b>			
<b>Applicability and Approach</b>	<ul style="list-style-type: none"> <li>Land is considered contaminated when it contains hazardous materials or oil concentrations above background or naturally occurring levels.</li> <li>Contamination of land should be avoided by preventing or controlling the release of hazardous materials, hazardous wastes or oil to the environment.</li> <li>Contaminated lands should be managed to avoid the risk to human health and ecological receptors.</li> <li>To determine whether risk management options are warranted an assessment</li> </ul>	<p>The EIA Report lists the other pollutants that might be present in the excavated dust (including hazardous substances). Measures to protect the ground from spillages and hazardous substances are provided. The measures identified appear to be appropriate to control the risk of contamination from the use and storage of hazardous substances on the site.</p> <p>During operation of the wind farm measures have been put in place to reduce the risk of oil spillage and effective containment of oil</p>	No further action is recommended.



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	<p>should be undertaken to establish whether three risk factors (contaminants, receptors and exposure pathways) co-exist or are likely to co-exist.</p> <ul style="list-style-type: none"> <li>When the three risk factors are considered to be present the following steps should be taken: <ul style="list-style-type: none"> <li>- Risk screening</li> <li>- Interim risk management</li> <li>- Detailed quantitative risk assessment</li> <li>- Permanent risk reduction measures</li> </ul> </li> </ul>	(including waste oil).	
<b>Risk Screening</b>	<ul style="list-style-type: none"> <li>Where there is evidence of contamination at site the following steps are recommended:</li> <li>Identification of the location of contamination</li> <li>Sampling and testing according to established technical methods</li> <li>Evaluation of the analytical results against local and national regulations</li> <li>Verification of the potential human and/or ecological receptors and exposure pathways relevant to the site.</li> <li>The result may indicate there is no overlap between the three risk factors as the levels of contamination are below those considered to pose a risk to human health or the environment.</li> <li>Alternatively, interim or permanent risk reduction measures may need to be taken with or without more detailed risk</li> </ul>	<p>Measures to protect the ground from spillages and hazardous substances are provided in the EIA Report. The measures identified appear to be appropriate to control the risk of contamination from the use and storage of hazardous substances on the site.</p> <p>During operation of the wind farm measures have been put in place to reduce the risk of oil spillage and effective containment of oil (including waste oil).</p>	No further action is recommended.

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<b>Interim Management Risk</b>	<p>assessment (see below).</p> <ul style="list-style-type: none"> <li>Interim risk management actions should be implemented if the presence of land contamination poses an “imminent hazard”, i.e. an immediate risk to human health and the environment if allowed to continue, e.g. presence of an explosive atmosphere, excessive contamination which could result in acute toxicity, irreversible long term effects.</li> <li>Appropriate risk reduction should be implemented as soon as practicable to remove the condition posing the imminent hazard.</li> </ul>	<p>Measures to protect the ground from spillages and hazardous substances are provided in the EIA Report. The measures identified appear to be appropriate to control the risk of contamination from the use and storage of hazardous substances on the site.</p> <p>During operation of the wind farm measures have been put in place to reduce the risk of oil spillage and effective containment of oil (including waste oil).</p>	<p>No further action is recommended.</p>
<b>Detailed Management Risk</b>	<ul style="list-style-type: none"> <li>A detailed site-specific environmental risk assessment may be used to develop strategies that yield acceptable health risks while achieving low level contamination on-site. An assessment of contaminant risk needs to be considered in the context of current and future land use, and development scenarios (e.g. residential, commercial, parkland use etc.).</li> <li>A detailed risk assessment involves a detailed site investigation using quality assurance/quality control measures to ensure that data quality is adequate for the intended data use.</li> <li>The site investigation should be used to develop a conceptual site model of how and where contaminants exist, how they</li> </ul>	<p>Measures to protect the ground from spillages and hazardous substances are provided in the EIA Report.</p>	<p>No further action is recommended.</p>

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	<p>are transported and where routes of exposure occur to organisms and humans, including quantifying the potential environmental and/or human health risks, determining if the risk is likely to remain stable, increase or decrease with time in the absence of any remediation.</p> <ul style="list-style-type: none"> <li>If risk reduction measures are required its necessary to determine where risk reduction measures should be implemented, the preferred technologies needed to implement these measures, a monitoring plan should be developed to determine whether risk reduction measures are effective. The need and appropriateness for institutional controls (e.g. land use restrictions, deed restriction) should be considered as part of a comprehensive approach.</li> </ul>		
<b>Permanent Risk Reduction Measures</b>	<ul style="list-style-type: none"> <li>The underlying principle is to reduce, eliminate or control any or all of the three risk factors.</li> <li>Risk mitigation strategies should be developed based on site-specific conditions and site constraints.</li> <li>Regardless of the management option selected, the action plan should include wherever possible contaminant source reduction.</li> <li>Risk mitigation strategies can be adopted</li> </ul>	Measures to protect the ground from spillages and hazardous substances are provided in the EIA Report.	No further action is recommended.

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<p>for contaminant source and exposure concentrations.</p> <ul style="list-style-type: none"> <li>Containment measures should also be considered for immediate implementation where source reduction measures are expected to take time.</li> </ul>		
<b>Occupational Health and Safety Considerations</b>	<p>Investigation and remediation of contaminated land:</p> <ul style="list-style-type: none"> <li>Occupational health and safety precautions should be exercised to minimise exposure, as described in Section 2 Occupational Health and Safety.</li> <li>Workers on contaminated sites should receive special health and safety training specific to contaminated site investigation and remediation.</li> </ul>	<p>No special control measures are required in respect of the risk to human health during construction and/or operation from contaminated land as there is no known contaminated land on the sites.</p>	<p>No further action is recommended.</p>
<b>2.0 Occupational Health and Safety</b>			

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
<b>Applicability and Approach</b>	<ul style="list-style-type: none"> <li>Guidance applies to construction, operation and decommissioning.</li> <li>Companies should hire contractors that have the technical capability to manage the occupational health and safety issues of their employees.</li> <li>Preventative and protective measures should be introduced according to the following order of priority: <ul style="list-style-type: none"> <li>Eliminating the hazard by removing the activity from the work process</li> <li>Controlling the hazard at its source through use of engineering controls</li> <li>Minimise the hazard through design of safe work systems and administrative or institutional control measures</li> <li>Providing appropriate personal protective equipment (PPE) in conjunction with training, use and maintenance of PPE.</li> <li>Application of prevention and control measures to occupational hazards should be based on comprehensive job safety or job hazard analyses. The results of these analyses should be prioritised as part of an action plan based on the likelihood and severity of the consequence of exposure to the identified hazards.</li> </ul> </li> </ul>	<p>The wind farm is operational. A Health and Safety Plan will be implemented during operation of the wind farm. The Health and Safety Plan will cover all relevant aspects to ensure compliance with health and safety legislation and international good practice relating to occupational and community health and safety and will include the following aspects:</p> <ul style="list-style-type: none"> <li>Working at heights</li> <li>Electrical safety</li> <li>Emergency and evacuation procedures (e.g. in the event of a fire)</li> <li>General health and safety measures</li> <li>Access and security.</li> </ul> <p>The exact operational provisions and procedures are not available at this stage and will be set at the time the client will be tendering for the operational contract.</p> <p>EDPR's "General Contracting Conditions" are mandatory and are attached to every contract to be signed by Contractors. These include provisions relating to the occupational health and safety and employment and social obligations.</p> <p>A maintenance contract has been awarded to Vestas for maintenance of the wind turbines.</p>	<p>OHSAS 18001:2008 standard is to be implemented and certified, according to which a yearly management plan for H&amp;S has to be prepared and the company management must keep records of management audits and meetings.</p>

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<b>2.1 General Facility Design and Operation</b>			
<b>Integrity of Workplace Structures</b>	<ul style="list-style-type: none"> <li>Permanent and recurrent places of work should be designed and equipped to protect OHS, e.g. easy to clean and maintain, structurally safe, acceptable light and noise conditions, fire resistant, heavy oscillating, rotating or alternating equipment should be located in dedicated buildings or structurally isolated sections.</li> </ul>	The Project has been implemented according to EN ISO 17050-1:2004 and Directive 2006/42/CE	No further action is recommended.
<b>Severe Weather and Facility Shutdown</b>	<ul style="list-style-type: none"> <li>Work place structures should be designed and constructed to withstand the expected elements for the region and have an area designed for safe refuge if appropriate.</li> <li>Standard operating procedures should be development for project shutdown, including an evacuation plan. Drills to practice the procedure and plan should be undertaken annually.</li> </ul>	<p>The Project has been implemented according to EN ISO 17050-1:2004 and Directive 2006/42/CE.</p> <p>According with the provisions of law 319/2006 and GD 1425/2006 amended by GD 955/2010 as well as the provisions of Law 307/2006 and Ministry of Internal Affairs Order 163/2007 twice a year emergency situations simulation exercises have to be done with the participation of staff from the county Emergency situations inspectorate.</p>	No further action is recommended.
<b>Workspace and Exit</b>	<ul style="list-style-type: none"> <li>The space provided for each worker should be adequate for safe execution of all activities.</li> <li>Passages to emergency exits should be unobstructed at all times.</li> <li>Exits should be clearly marked to be visible in total darkness.</li> <li>The number and capacity of exits should</li> </ul>	An emergency situations evacuation plan has been prepared, the evacuation routes must kept unobstructed at all times and the emergency exits are properly marked.	No further action is recommended.

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	<p>be sufficient for safe and orderly evacuation and there should be a minimum of two exits from any work area.</p> <ul style="list-style-type: none"> <li>Facilities should be designed and built taking into account the needs of disabled persons.</li> </ul>		
<b>Fire Precautions</b>	<ul style="list-style-type: none"> <li>The workplace should be designed to prevent the start of fires through the implementation of fire codes applicable to industrial settings.</li> <li>Facilities should be equipped with fire detectors, alarm systems and fire-fighting equipment, which should be maintained in good working order and be readily accessible. It should be adequate for the dimensions and use of the premises, equipment installed, physical and chemical properties of substances present and the maximum number of people present.</li> <li>Manual firefighting equipment that is easy to use should be provided</li> <li>Fire and emergency alarm systems should be both audible and visible.</li> </ul>	<p>The Project has been implemented according to EN ISO 17050-1:2004 and Directive 2006/42/CE</p> <p>Fire extinguishers are placed inside at the turbine entrance.</p>	<p>No further action is recommended.</p>
<b>Lavatories and Showers</b>	<ul style="list-style-type: none"> <li>Adequate lavatory facilities (toilets and washing areas) should be provided for the number of people expected to work in the facility and allowances made for segregated facilities. Toilet facilities should be provided with adequate supplies of hot and cold running water, soap and hand drying devices</li> </ul>	<p>There will be no connection to the site for water supply or sewerage.</p> <p>During operation waste water will be collected in a septic tank and transported off-site for disposal.</p> <p>Ecological toilets will be provided during</p>	<p>No further action is recommended.</p>



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	<ul style="list-style-type: none"> <li>Where workers may be exposed to substances poisonous by ingestion and skin contamination may occur, facilities for showering and changing into and out of street and work clothes should be provided.</li> </ul>	and operation (within the substation). Water will be tankered onto the site and means for the provision of hot and cold water installed within the substation building.	
<b>Potable Water Supply</b>	<ul style="list-style-type: none"> <li>Adequate supplies of potable water should be provided from a fountain or other means</li> <li>Water supplied to areas of food preparation or for the purpose of personal hygiene standards should meet drinking water quality standards</li> </ul>	Potable bottled water will be delivered to the site. There will be no connection to the site for water supply.	No further action is recommended.
<b>Clean Eating Area</b>	<ul style="list-style-type: none"> <li>Where there is the potential for exposure to substances poisonous by ingestion, suitable arrangements are to be made for the provision of clean eating areas</li> </ul>	Clean eating areas will be provided within the substation complex for use by staff based on the site.	No further action is recommended.
<b>Lighting</b>	<ul style="list-style-type: none"> <li>Workplaces should, to the degree flexible, receive natural light and be supplemented with sufficient artificial illumination to promote workers' safety and health and enable safe equipment operation.</li> <li>Emergency lighting of adequate intensity should be installed and automatically activated upon failure of the principle artificial light source to ensure safe shut-down, evacuation etc.</li> </ul>	<p>The towers of the wind turbines will be equipped with lifts and stairs and interior lighting.</p> <p>The towers will have also internal lights. The only external lights permitted are the red flashing lights on top of the turbines. In the case of emergency intervention or maintenance outside the turbine portable lights will be used.</p>	No further action is recommended.
<b>Safe Access</b>	<ul style="list-style-type: none"> <li>Passageways for pedestrians and vehicles within and outside buildings should be segregated</li> </ul>	Maintenance personnel will have access to the wind farm only after having attended specialist training courses: including basic	No further action is recommended.

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	<ul style="list-style-type: none"> <li>Equipment installations requiring servicing, inspection and/or cleaning should have unobstructed, unrestricted and ready access</li> <li>Hand, knee and foot railing should be installed on stairs, fixed ladders, platforms, permanent and interim floor openings, loading bays, ramps etc.</li> <li>Openings should be sealed by gates or removable chains</li> <li>Covers should, if feasible, be installed to protect against falling items</li> <li>Measures should be put in place to prevent access to dangerous areas</li> </ul>	<p>safety training, first aid, fire fighting and fire prevention, protection against fall and rescue at height.</p>	
<b>First Aid</b>	<ul style="list-style-type: none"> <li>The employer should ensure that qualified first-aid can be provided at all times.</li> <li>Appropriately equipped first-aid stations should be easily accessible</li> <li>Eye-wash stations and /or emergency showers should be provided close to all workstations where immediate flushing with water is the recommended first-aid response.</li> <li>Where the scale of work or the type of activity being carried out so requires, a dedicated and appropriately equipped first aid room should be provided. First aid rooms and stations should be equipped with gloves, gowns and masks for protection against direct contact with blood and other body fluids</li> </ul>	<p>Telephone numbers for use in all emergency situations will be cleared posted around the wind farm and in the substation compound.</p> <p>An Emergency Response Plan will be provided for implementation in emergency situations.</p> <p>Staff present on the site and involved in maintenance activities will be nominated and trained in respect of first aid.</p> <p>The Health and Safety Plan implemented during operation of the wind farm will include procedures to be followed in emergency situations (such as a work</p>	<p>No further action is recommended.</p>

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	<ul style="list-style-type: none"> <li>Remote sites should have written emergency procedures for dealing with cases of trauma or serious illness up to the point at which patient care can be transferred to an appropriate medical facility.</li> </ul>	accident, fire, environmental spillage, and lightning) and appropriate emergency equipment will be provided. The area accommodated by security personnel will be equipped with first aid kits.	
<b>Air Supply</b>	<ul style="list-style-type: none"> <li>Sufficient fresh air should be supplied for indoor and confined work spaces.</li> <li>Mechanical ventilation systems should be maintained in good working order.</li> <li>Re-circulation of contaminated air is not acceptable. Air inlet filters should be kept clean and free of dust and micro-organisms. Heating, ventilation and air conditioning systems and evaporative cooling systems should be equipped, maintained and operated so as to prevent growth and spreading of disease agents (e.g. legionella) or breeding of vectors of public health concern (e.g. mosquitoes).</li> </ul>	This is not applicable to the project site.	No further action is recommended.
<b>Work Environment Temperature</b>	<ul style="list-style-type: none"> <li>The temperature in work, rest room and other welfare facilities should, during service times, be maintained at a level appropriate for the purpose of the facility</li> </ul>	The welfare areas within the substation compound which will be occupied by security personnel will be provided with facilities to ensure provision of an appropriate work environment temperature.	No further action is recommended.
<b>2.2. Communication and Training</b>			
<b>OHS Training</b>	<ul style="list-style-type: none"> <li>OHS training to be provided to all new employees.</li> <li>Training should consist of basic hazard awareness, site-specific hazards, safe work practices and emergency</li> </ul>	A health and safety training programme has been prepared including consideration of emergency situations.  Only authorised and appropriately trained	No further action is recommended.

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	procedures.	personnel will be permitted to access the wind turbines and substation and to work at height. Clear signage will be provided indicating that access is prohibited for unauthorised persons. The entrance to the turbine towers will be securely locked.	
<b>Visitor Orientation</b>	<ul style="list-style-type: none"> <li>If visitors can gain access to areas where hazardous conditions or substances may be present a visitor orientation and control program should be established to ensure visitors do not enter hazard areas unescorted.</li> </ul>	<p>Visitors will be accompanied by authorised personnel only and only permitted on-site after receiving preliminary health and safety training.</p> <p>Decision 2 PSI/01.02.2012 relates to the training of visitors / subcontractors.</p> <p>According with the provisions of law 319/2006 and GD 1425/2006 amended by GD 955/2010 have to be prepared; a training procedure for visitors / subcontractors</p>	No further action is recommended.
<b>New Task Employee and Contractor Training</b>	<ul style="list-style-type: none"> <li>Prior to commencement of new assignments workers and contractors should receive adequate training and information enabling them to understand work hazards and to protect their health from hazardous ambient factors that may be present.</li> </ul>	<p>Specialised companies will be responsible for providing health and safety training for employees and subcontractors.</p> <p>According with the provisions of law 319/2006 and GD 1425/2006 amended by GD 955/2010 have to be prepared; a training procedure for visitors / subcontractors.</p>	No further action is recommended.
<b>Basic OHS Training</b>	<ul style="list-style-type: none"> <li>Basic occupational training program and speciality courses should be provided, as needed, to ensure that workers are</li> </ul>	Decision R101465/12.01.2011 relates to granting first aid and Decision R101466/12.01.2011 relates to the need for	No further action is recommended.

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	<p>orientated to the specific hazardous of individual work assignments. Training should generally be provided to management, supervisors, workers and occasional visitors to areas of risks and hazards</p> <ul style="list-style-type: none"> <li>Workers with rescue and first-aid duties should receive dedicated training.</li> <li>Through appropriate contract specifications and monitoring the employer should ensure that service providers, as well as contracted and subcontracted labour, are trained adequately before assignments begin.</li> </ul>	<p>fire extinguishers and staff evacuation.</p> <p>Basic occupational health and safety training will be provided in accordance with current legislation (Law 316/2006 and GD 1425/2006). This includes health and safety induction training, task specific training and refresher or update training. This training will be provided by certified staff</p> <p>Nominated first aid personnel will be provided with dedicated training.</p> <p>EDPR's "General Contracting Conditions" are mandatory and are attached to every contract to be signed by Contractors. These include provisions relating to the occupational health and safety and employment and social obligations.</p>	
<b>Area Signage</b>	<ul style="list-style-type: none"> <li>Hazardous areas, installation, materials, safety measures and emergency exits should be marked appropriately</li> <li>Signage should be in accordance with international standards and be well known to and easily understood by workers, visitors and the general public.</li> </ul>	<p>Health and safety warning signs are placed at the wind farm entrance and on the access doors of each turbine.</p>	<p>No further action is recommended.</p>
<b>Labelling of Equipment</b>	<ul style="list-style-type: none"> <li>All vessels that may contain substances that are hazardous should be labelled as to the contents and hazard or appropriately colour coded.</li> <li>Piping systems that contain hazardous</li> </ul>	<p>All equipment and materials stored will be appropriately labelled regarding safety hazards and risks, generally by the supplier of the equipment</p>	<p>No further action is recommended.</p>

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<b>Communicate Hazard Codes</b>	substances should be labelled with the direction of flow and contents of the pipe		
	<ul style="list-style-type: none"> <li>• Copies of the hazard coding systems should be posted outside the facility at emergency entrance doors</li> <li>• Information regarding the type of hazardous materials stored, handled or used at the facility should be shared with emergency services and security personnel</li> <li>• Representatives of local emergency and security services should be invited to participate in annual orientation tours and site inspections.</li> </ul>	<p>Health and safety warning signs are placed at the wind farm entrance and on the access doors of each turbine.</p> <p>The site has recently become operational and visits from the local emergency and security services should be arranged.</p>	No further action is recommended.
<b>2.3 Physical Hazards</b>			
<b>Rotating and Moving Equipment</b>	<ul style="list-style-type: none"> <li>• Recommended protective measures include: <ul style="list-style-type: none"> <li>- Designing machines to eliminate trap hazards and ensuring that extremities are kept out of harm's way, use of guards which are designed and installed in accordance with appropriate machine safety standards.</li> <li>- Turning off, disconnecting, isolating and de-energising machinery with exposed or guarded moving parts or in which energy can be stored during servicing or maintenance in accordance with appropriate standards.</li> <li>- Designing and installing equipment to</li> </ul> </li> </ul>	The Project has been implemented in accordance with EN ISO 17050-1:2004 and Directive 2006/42/CE.	No further action is recommended.

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	enable routine service without removal of guarding devices or mechanisms.		
<b>Noise</b>	<ul style="list-style-type: none"> <li>No employee should be exposed to a noise level greater than 85 dB(A) for a duration of more than 8 hours per day without hearing protection. No unprotected ear should be exposed to a peak sound pressure level of more than 140dB(C).</li> <li>Use of hearing protection should be enforced actively when the sound level over 8 hours reaches 85 dB(A), peak sound levels reach 140 dB(C) or the average maximum sound level reaches 110dB(A). Hearing protective devices should be capable of reducing sound levels at the ear to at least 85dB(A).</li> <li>Hearing protection is preferred for any period of noise exposure in excess of 85dB(A) although an equivalent level of protection can be obtained by limiting the duration of noise exposure. For every 3dB(A) increase in sound levels, the allowed exposure period or duration should be reduced by 50%.</li> <li>Prior to issuance of hearing protective devices as the final control mechanism, use of acoustic insulating materials, isolation of the noise sources and other engineering controls should be investigated and implemented, where</li> </ul>	<p>A maintenance contract has been awarded to Vestas for maintenance of the wind turbines.</p> <p>Noise levels within the nacelle will be in excess of 80dB(A). Hearing protection is required if the wind turbine is in operation and work is required within the nacelle.</p> <p>Ensure hearing protection compliant with EHS Guidelines is required for work within the nacelle.</p> <p>Noise and vibration measurements have to be done by laboratories certified by the Labour Ministry.</p>	No further action is recommended.

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	feasible. <ul style="list-style-type: none"> <li>Periodic medical hearing checks should be performed on workers exposed to high noise levels.</li> </ul>		
<b>Vibration</b>	<ul style="list-style-type: none"> <li>Exposure to hand-arm vibration from equipment or whole-body vibrations from surfaces should be controlled through choice of equipment, installation of vibration dampening pads or devices and limiting the duration of exposure.</li> <li>Limits for vibration and action values are provided by the ACGIH.</li> <li>Exposure levels should be checked on the basis of daily exposure time and data provided by equipment manufacturers.</li> </ul>	<p>Exposure to high vibration levels is not expected.</p> <p>Appropriate control measures will be implemented in respect of vibration in accordance with the requirements of HG1876/2005.</p> <p>If necessary, vibration exposure measurements shall be completed by the specialised laboratory of ASP Constanta (Authority for Public Health).</p>	<p>No further action is recommended.</p>
<b>Electrical</b>	<ul style="list-style-type: none"> <li>Recommended actions include:               <ul style="list-style-type: none"> <li>- Marking all energised electrical devices and lines with warning signs</li> <li>- Locking out (de-charging and laving open with a controlled locking device) and tagging out (warning sign placed on the lock) devices during service or maintenance</li> <li>- Checking all electrical cords, cables and hand power tools for frayed or exposed cords and following manufacturer recommendations for maximum permitted operating voltage</li> <li>- Double insulating / grounding all</li> </ul> </li> </ul>	<p>A Health and Safety Plan will be implemented during operation of the wind farm. The Health and Safety Plan will cover all relevant aspects to ensure compliance with health and safety legislation and international good practice relating to occupational and community health and safety and will include the following aspects:</p> <ul style="list-style-type: none"> <li>Working at heights</li> <li>Electrical safety</li> <li>Emergency and evacuation procedures (e.g. in the event of a</li> </ul>	<p>A yearly equipment maintenance report has to be prepared.</p>



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	<p>electrical equipment used in environments that are, or may become wet; using equipment with ground fault interrupter protected circuits</p> <ul style="list-style-type: none"> <li>- Protecting power cords and extension cords against damage from traffic by shielding or suspending above traffic areas</li> <li>- Appropriate labelling of service rooms housing high voltage equipment and where entry is controlled or prohibited.</li> <li>- Establishing "No Approach" zones around or under high voltage power lines.</li> <li>- Rubber tired construction or other vehicles that come into direct contact with, or arcing between, high voltage wires may need to be taken out of service and have the tires replaced to prevent tire and wheel assembly failure</li> <li>- Conducting detailed identification and marking of all buried electrical wiring prior to any excavation work.</li> </ul>	<p>fire)</p> <ul style="list-style-type: none"> <li>• General health and safety measures</li> <li>• Access and security.</li> </ul> <p>The exact operational provisions and procedures are not available at this stage and will be set at the time the client will be tendering for the operational contract.</p> <p>EDPR's "General Contracting Conditions" are mandatory and are attached to every contract to be signed by Contractors. These include provisions relating to the occupational health and safety and employment and social obligations.</p>	
<b>Eye Hazards</b>	<ul style="list-style-type: none"> <li>• Recommended measures include: <ul style="list-style-type: none"> <li>- Use of machine guards or splash shields and/or face and eye protection devices, such as safety glasses with side shield, goggles and /or a full face shield.</li> <li>- Moving areas where the discharge of</li> </ul> </li> </ul>	<p>Specific PPE shall be used by construction and maintenance worker (such as goggles or face protection helmets) as required for certain tasks.</p>	<p>No further action is recommended.</p>

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	<p>solid fragments, liquid or gaseous emissions can reasonably be predicted away from places expected to be occupied or transited by workers or visitors.</p> <ul style="list-style-type: none"> <li>- Provisions should be made for people who have to wear prescription glasses either through the use of overglasses or prescription hardened glasses.</li> </ul>		
<b>Welding / Hot Work</b>	<ul style="list-style-type: none"> <li>• Recommended measures include: <ul style="list-style-type: none"> <li>- Provision of proper eye protection</li> <li>- Use of welding barrier screens around the workstation</li> <li>- Special hot work and fire prevention precautions and Standard Operating Procedures should be implemented if welding or hot cutting is to be undertaken outside established welding work stations.</li> </ul> </li> </ul>	<p>Provisions related to welding and hot work are relevant during operation.</p> <p>Protective measures to be used for welding equipment are specified in the operators' instructions and will be integrated within the Health and Safety Plan which will be followed by employees who carry out welding activities.</p> <p>Specific PPE, provided by the employer, shall be used on a compulsory basis.</p> <p>According with the provisions of law 319/2006 and GD 1425/2006 amended by GD 955/2010 as well as the provisions of Law 307/2006 and Ministry of Internal Affairs Order 163/2007 has to be prepared a procedure for the staff actions in case of emergency</p>	No further action is recommended.
<b>Industrial Vehicle Driving and Site</b>	<ul style="list-style-type: none"> <li>• Safety practices include: <ul style="list-style-type: none"> <li>- Training and licensing industrial</li> </ul> </li> </ul>	There is a speed limit sign within the wind farm, indicating that vehicles should not	

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<b>Traffic</b>	<p>vehicle operators in safe operation of specialised vehicles</p> <ul style="list-style-type: none"> <li>- Ensuring drivers undergo medical surveillance</li> <li>- Ensuring moving equipment with restricted rear visibility is outfitted with audible back-up alarms</li> <li>- Establishing rights-of-way, site speed limits, vehicle inspection requirements, operating rules and procedures and control of traffic patterns or direction</li> <li>- Restricting the circulation of delivery and private vehicles to defined routes and areas.</li> </ul>	<p>travel faster than (5km/h).</p> <p>Large vehicles and cranes will be used during construction and potentially during maintenance if the rotors need to be dismantled.</p> <p>During construction appropriate on-site traffic control measures (including use of dedicated routes) will be implemented, as detailed within the Health and Safety Plan.</p> <p>EDPR's "General Contracting Conditions" are mandatory and are attached to every contract to be signed by Contractors. These include provisions relating to the occupational health and safety and employment and social obligations.</p> <p>All staff driving on the site should be suitably licensed and trained in the safe operation of specialised vehicles.</p>	
<b>Working Environment Temperature</b>	<ul style="list-style-type: none"> <li>• Avoid extreme temperatures in permanent work environments through implementation of engineering controls and ventilation.</li> <li>• Where this is not possible management procedures should be implemented, including: <ul style="list-style-type: none"> <li>- Monitoring weather forecasts for outside work to provide advance</li> </ul> </li> </ul>	<p>Protective measures for working at high and low temperatures are set out in Ordinance No.99/2000 which takes into account provisions required during periods of extreme temperatures</p> <p>In case of extreme temperatures during construction, the H&amp;S coordinator shall make provisions for all employers in</p>	No further action is recommended.

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	<p>warning of extreme weather and scheduling work accordingly</p> <ul style="list-style-type: none"> <li>- Adjustment of work and rest periods depending on the temperature and workloads</li> <li>- Providing temporary shelters to protect against the elements during working or for use as rest areas</li> <li>- Use of protective clothing</li> <li>- Providing easy access to adequate hydration and avoiding consumption of alcoholic beverages.</li> </ul>	<p>accordance with legal requirements (including provision of potable water and hot drinks etc.).</p> <p>Provision shall be made for maintenance and security staff during extreme temperatures in accordance with legal requirements.</p>	
<b>Ergonomics, Repetitive Motion, Manual Handling</b>	<p>Controls may include:</p> <ul style="list-style-type: none"> <li>• Use of mechanical assists to eliminate or reduce exertions required to lift materials, hold tools and work objects</li> <li>• Selecting and designing tools that reduce force requirements and holding times and improve postures</li> <li>• Providing user adjustable work stations</li> <li>• Incorporating rest and stretch breaks into work processes and conducting job rotation</li> <li>• Implementing quality control and maintenance programs that reduce unnecessary forces and exertions</li> <li>• Taking into consideration additional special conditions such as left handed persons</li> </ul>	<p>Control measures relating to ergonomics, repetitive actions and manual handling will be implemented to ensure compliance with national legislation.</p> <p>According to the provisions of law 319/2006 and GD 1425/2006 a health and safety procedure is required to be prepared for activities carried out within the wind farm.</p> <p>Staff involved in these activities will receive specialised training prior to undertaking such activities.</p>	No further action is recommended.
<b>Working at Heights</b>	<ul style="list-style-type: none"> <li>• Fall prevention and protection measures should be implemented whenever a</li> </ul>	According to the provisions of law 319/2006 and GD 1425/2006 a health and safety	No further action is recommended.

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<p>worker is exposed to the hazard of falling more than 2 meters; into operating machinery; into water or other liquid; into hazardous substances; or through an opening in a work surface.</p> <ul style="list-style-type: none"> <li>Fall prevention may include: <ul style="list-style-type: none"> <li>Installation of guardrails with mid-rails and toe boards at the edge of any fall hazard area</li> <li>Proper use of ladders and scaffolds by trained employees</li> <li>Use of fall prevention devices, including safety belt and lanyard travel limiting devices to prevent access to fall hazard area or fall protection devices such as full body harnesses used in conjunction with shock absorbing lanyards attached to fixed anchor point or horizontal life-lines.</li> <li>Appropriate training in use, serviceability and integrity of the necessary PPE</li> <li>Inclusion of rescue and/o recovery plans and equipment to respond to workers after an arrested fall.</li> </ul> </li> </ul>	<p>procedure is required to be prepared for activities carried out within the wind farm.</p> <p>Protective measures will be implemented for working at height. The operator will be responsible for implementing these measures.</p> <p>The PPE provided will need to be approved by the Labour Ministry Authority.</p> <p>All workers on site shall be trained with respect to the use of such equipment prior to undertaking work at heights.</p>	
<b>Illumination</b>	<ul style="list-style-type: none"> <li>Work area light intensity should be adequate for the general purpose of the location and type of activity and should be supplemented with dedicated work station illumination as needed.</li> <li>Controls should include:</li> </ul>	<p>The towers of the wind turbines will be equipped with lifts and stairs and interior lighting.</p> <p>The towers will have also internal lights. The only external lights permitted are the</p>	<p>No further action is recommended.</p>

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<ul style="list-style-type: none"> <li>- Use of energy efficient light sources with minimum heat emission</li> <li>- Undertaking measures to eliminate glare/reflections and flickering of lights</li> <li>- Taking precautions to minimise and control optical radiation including direct sunlight</li> <li>- Controlling laser hazards in accordance with equipment specifications, certifications and recognised safety standards. The lowest feasible class laser should be applied to minimise risks.</li> </ul>	<p>red flashing lights on top of the turbines. In the case of emergency intervention or maintenance outside the turbine portable lights will be used.</p>	
<b>2.4 Chemical Hazards</b>			
	<ul style="list-style-type: none"> <li>• Chemical hazards can be most effectively prevented through a hierarchical approach that includes:               <ul style="list-style-type: none"> <li>- Replacement of the hazardous substance with a less hazardous substitute</li> <li>- Implementation of engineering and administrative control measures to avoid or minimise the release of hazardous substances into the work environment</li> <li>- Minimising the number of employees exposed or likely to be exposed</li> <li>- Communicating chemical hazards to workers through labelling and marking according to national and internationally recognised</li> </ul> </li> </ul>	<p>The operation of the project will not require use or on-site storage of hazardous chemicals with the exception of oil which will be used during maintenance. Specific PPE (gloves) shall be provided for use during activities involving the use of oil.</p>	<p>No further action is recommended.</p>

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	requirements and standards - Training workers in the use of available information, safe work practices and appropriate use of PPE.		
<b>Air Quality</b>	<ul style="list-style-type: none"> <li>Employers should take appropriate measures to maintain air quality in the work area, including:               <ul style="list-style-type: none"> <li>Maintaining levels of contaminant dusts, vapours and gases below those recommended by the ACGIH</li> <li>Developing and implementing work practices to minimise release of contaminants into the work environment, such as direct piping of liquid and gaseous materials</li> <li>Enclosed operations</li> <li>Local exhaust ventilation at emission / release points</li> </ul> </li> </ul>	<p>It is recognised in the EHS Guidelines for Wind Energy that these facilities do not generate process emissions and effluents during their operation.</p> <p>No atmospheric pollution sources are anticipated during operation.</p>	No further action is recommended.
<b>Fire and Explosion</b>	<ul style="list-style-type: none"> <li>Prevention and control strategies include:               <ul style="list-style-type: none"> <li>Storing flammables away from ignition sources and oxidising materials. Flammables storage areas should be remote from entry and exit points into buildings, away from facility ventilation intakes or vents, use spark-proof fixtures etc.</li> <li>Providing bonding and grounding of, and between, containers and additional mechanical floor level ventilation if materials are being, or could be, dispensed in the storage</li> </ul> </li> </ul>	<p>Protection measures will be implemented in respect of protection against the risk of fires and explosions. The Emergency Response Plans will include consideration of such situations.</p> <p>Twice a year, organised simulations shall be held to verify the responsiveness capacity in case of emergencies (fire, explosions etc.).</p>	No further action is recommended.

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<p>area</p> <ul style="list-style-type: none"> <li>- Defining and labelling fire hazards areas to warn of special rules</li> <li>- Providing specific worker training in handling of flammable materials, and in fire prevention or suppression.</li> </ul>		
<b>Corrosive, Oxidising and Reactive Chemicals</b>	<ul style="list-style-type: none"> <li>• Controls which should be observed in the work environment when handling such chemicals include:             <ul style="list-style-type: none"> <li>- Segregate corrosive, oxidising and reactive chemicals from flammable materials and from other chemicals of incompatible class, store in ventilated areas and in containers with appropriate secondary containment to minimise intermixing during spills</li> <li>- Workers required to handle corrosive, oxidising or reactive chemicals should be provided with specialised training and provided with, and wear, appropriate PPE.</li> <li>- Qualified first-aid should be ensured at all times where corrosive, oxidising or reactive chemicals are used. Appropriately equipped first-aid stations should be easily accessible throughout the place of work and eye-wash stations and/or emergency showers provided close to all workstations where the recommended first-aid response is immediate</li> </ul> </li> </ul>	<p>Appropriate protective measures will be implemented to ensure safe working with chemicals (this is particularly relevant in terms of oil associated with the turbines). Specific PPE (gloves) shall be provided for use during activities involving such substances.</p>	<p>No further action is recommended.</p>



IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
<b>Asbestos Containing Materials (ACM)</b>	flushing with water.		
	<ul style="list-style-type: none"> <li>• Avoid use of ACM in new buildings or as a new material in remodelling or renovation activities.</li> <li>• Existing facilities with ACM should develop an asbestos management plan which clearly defines the locations where ACM is present, its condition, procedures for monitoring its condition, procedures to access the locations where ACM is present to avoid damage, and training of staff who can potentially come into contact with the material to avoid damage and prevent exposure.</li> <li>• Repair or removal and disposal of existing ACM should only be performed by specially trained personnel following host country requirements or in their absence, internationally recognised procedures.</li> </ul>	<p>Use of ACM is to be avoided within the project</p> <p>There are no existing structures on the site and therefore it is assumed that there is no existing ACM on the project site.</p>	No further action is recommended.
<b>2.5 Biological Hazards</b>			
	<ul style="list-style-type: none"> <li>• Biological hazards can be prevented most effectively by implementing the following measures: <ul style="list-style-type: none"> <li>- If the nature of the activity permits, use of any harmful biological agents should be avoided and replaced with an agent that, under normal conditions of use, is not dangerous or less dangerous to workers.</li> <li>- If use of harmful agents cannot be avoided, precautions should be taken</li> </ul> </li> </ul>	<p>No biological hazards are associated with the site or the project.</p> <p>No local food shall be consumed (such as local mushrooms found in the vicinity of the construction site).</p> <p>A health and safety health monitoring contract has to be arranged and all staff are required to undergo annual checks.</p>	No further action is recommended.

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<p>to keep the risk of exposure as low as possible and maintained below internationally established and recognised exposure limits.</p> <ul style="list-style-type: none"> <li>- Work processes, engineering and administrative controls should be designed, maintained and operated to avoid or minimise release of biological agents into the working environment. The number of employees exposed or likely to become exposed should be kept at a minimum</li> <li>- The employer should review and assess known and suspected presence of biological agents at the place of work and implement appropriate safety measures, monitoring, training and training verification programs.</li> <li>- Measures to eliminate and control hazards from known and suspected biological agents at the place of work should be designed, implemented and maintained in close co-operation with the local health authorities and according to recognised international standards</li> <li>- The employer should at all times encourage and enforce the highest level of hygiene and personal protection, especially for activities employing biological agents of WHO</li> </ul>		

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	<p>Groups 3 and 4 above.</p> <ul style="list-style-type: none"> <li>- Work involving agents in Groups 3 and 4 should be restricted only to those persons who have received specific verifiable training in working with and controlling such materials</li> <li>- Areas used for the handling of Groups 3 and 4 biological agents should be designed to enable their full segregation and isolation in emergency circumstances and be subject to Standard Operating Procedures requiring routine disinfection and sterilisation of the work surfaces</li> </ul>		
<b>2.6 Radiological Hazards</b>			
	<ul style="list-style-type: none"> <li>• Prevention and control strategies include: <ul style="list-style-type: none"> <li>- Places of work involving occupational and/or natural exposure to ionising radiation should be established and operated in accordance with recognised international safety standards and guidelines.</li> <li>- Exposure to non-ionising radiation, should be controlled to internationally recommended limits.</li> <li>- For both ionising and non-ionising radiation the preferred method for controlling exposure is shielding and limiting the radiation source. PPE is supplemental only or for emergency</li> </ul> </li> </ul>	<p>A small amount of electromagnetic radiation from the turbine is generated at hub height. Radiation is considered to decrease with the distance from the source and therefore the radiation generated from the turbines are low.</p> <p>Radiation will also be generated from the transformer/substations at ground level. However compared to other radiation sources in the normal environment (such as mobile telephones, electrical grids) the levels are low.</p> <p>Occupational health and safety monitoring of maintenance staff shall include</p>	<p>No further action is recommended.</p>

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	use.	monitoring of exposure to radiation sources.	
<b>2.7 Personal Protective Equipment (PPE)</b>			
	<ul style="list-style-type: none"> <li>Provide additional protection to workers exposed to workplace hazards in conjunction with other facility controls and safety systems.</li> <li>PPE is considered to be a last resort above and beyond the other facility controls and provides the worker with an extra level of personal protection.</li> </ul>	<p>Appropriate PPE will be provided for use by construction workers and maintenance staff in accordance with legal requirements.</p> <p>Where safe working practices cannot be adopted PPE should be used to manage risks to the health and safety of operatives.</p> <p>The PPE provided will be approved by the Labour Ministry authority.</p> <p>According to the provisions of the Law 319/2006 and GD 1425/2006 amended by GD 955/2010 an internal standards book has to be prepared, stating the allocation of the personal protective equipment.</p>	No further action is recommended.
	<ul style="list-style-type: none"> <li>Recommended measures for use of PPE in the workplace include:               <ul style="list-style-type: none"> <li>Active use of PPE if alternative technologies, work plans or procedures cannot eliminate, or sufficiently reduce, a hazard or exposure.</li> <li>Identification and provision of appropriate PPE that offers adequate protection to the worker, co-workers and occasional visitors, without incurring unnecessary inconvenience to the individual</li> </ul> </li> </ul>	<p>Appropriate PPE will be provided for use by workers and maintenance staff in accordance with legal requirements.</p> <p>The PPE provided will be as approved by the Labour Ministry authority.</p>	No further action is recommended.

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<ul style="list-style-type: none"> <li>- Proper maintenance of PPE, including cleaning and replacement when damaged or worn out.</li> </ul> <p>Selection of PPE should be based on the hazard and risk and selected according to criteria on performance and testing established by recognised organisations.</p>		
<b>2.8 Special Hazard Environments</b>			
	<ul style="list-style-type: none"> <li>• Defined as work situations where the above described hazards may exist under unique or especially hazardous circumstances.</li> </ul>	<p>According to the provisions of the Law 319/2006 and GD 1425/2006 amended by GD 955/2010 procedures for working in special conditions (closed spaces, isolation etc.) have to be prepared.</p>	<p>No further action is recommended.</p>
<b>Confined Spaces</b>	<ul style="list-style-type: none"> <li>• Defined as a wholly or partially enclosed space not designed or intended for human occupancy and in which a hazardous atmosphere could develop as a result of the contents, location or construction of the confined space or due to work done in or around the confined space.</li> </ul>	<p>Staff will be appropriately trained to work in confined spaces and to manage the health and safety risks associated with working in these conditions.</p> <p>The workers to be involved in working in confined spaces shall work in a team with a minimum of two personnel.</p>	<p>No further action is recommended.</p>
	<ul style="list-style-type: none"> <li>• Recommended management approaches include:               <ul style="list-style-type: none"> <li>- Implementation of engineering methods to eliminate, to the degree feasible, the existence and adverse character of the confined space</li> <li>- Confined spaces which contain physical or atmospheric hazards that</li> </ul> </li> </ul>	<p>There will not be any lone working. Maintenance and other activities will be undertaken by a team of at least 2 people.</p>	<p>No further action is recommended.</p>

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<p>could trap or engulf someone (known as a permit-required confined space) should be provided with permanent safety measures for venting, monitoring and rescue operations.</p> <ul style="list-style-type: none"> <li>- Access hatches should accommodate 90% of the worker population with adjustments for tools and protective clothing</li> <li>- Prior to entry into a permit-required confined space: process or feed lines into the space should be disconnected or drained and blanked and locked-out, mechanical equipment in the space should be disconnected, de-energised, locked-out and braced as appropriate, the atmosphere within the confined space should be tested to ensure the oxygen content is between 19.5% and 23% and the presence of any flammable gas or vapour does not exceed 25% of its respective Lower Explosive Limit (LEL).</li> <li>- If atmospheric conditions are not met, the confined space should be ventilated until the safe atmosphere is achieved, or entry is only to be undertaken with appropriate and additional PPE.</li> <li>- Safety precautions should include Self Contained Breathing Apparatus, life lines and safety watch workers</li> </ul>		

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	<p>stationed outside the confined space, with rescue and first-aid equipment readily available.</p> <ul style="list-style-type: none"> <li>- Before workers are required to enter a permit-required confined space, adequate and appropriate training in confined space hazard control, atmospheric testing, use of the necessary PPE and its serviceability, should be verified.</li> </ul>		
<b>Lone and Isolated Workers</b>	<ul style="list-style-type: none"> <li>• Defined as a worker out of verbal and line of sight communication with a supervisor, other workers or other persons capable of providing aid and assistance for continuous periods exceeding one hour.</li> <li>• Standard Operating Procedures (SOPs) should be developed and implemented to ensure all PPE and safety measures are in place before the worker starts work.</li> <li>• SOPs should establish, at a minimum, verbal contact with the worker at least once every hour and ensure the worker has a capability for summoning emergency aid.</li> </ul>	<p>There will not be any lone working. Maintenance and other activities will be undertaken by a team of at least 2 people.</p>	<p>No further action is recommended.</p>
<b>2.9 Monitoring</b>			
	<ul style="list-style-type: none"> <li>• OHS monitoring programs should verify the effectiveness of prevention and control strategies.</li> <li>• The OHS monitoring program should include: <ul style="list-style-type: none"> <li>- Safety inspection, testing and</li> </ul> </li> </ul>	<p>On 3.04.2012 an internal audit for H&amp;S and emergency situations was performed by the consultant, two observations were made each with a deadline. Corrective actions identified should be implemented.</p>	<p>OHSAS 18001:2008 standard is to be implemented and certified, according to which a yearly monitoring plan for H&amp;S has to be prepared (includes inspections plan, trainings, air</p>

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	<p>calibration – including use of PPE, inspection and testing of all safety features and hazard control measures</p> <ul style="list-style-type: none"> <li>- Surveillance of the working environment – monitoring and analyses to internationally recognised standards</li> <li>- Surveillance of workers health – where extraordinary protective measures are required</li> <li>- Training – adequately monitored and documented.</li> </ul>	<p>The Health and Safety Plan will include occupational health and safety monitoring, including the following aspects as appropriate:</p> <ul style="list-style-type: none"> <li>• Hearing</li> <li>• Exposure to radiation sources</li> <li>• Health and safety training</li> <li>• Use of PPE and implementation of safe systems of work</li> <li>• Safety inspection</li> </ul> <p>The exact operational provisions and procedures are not available at this stage and will be set at the time the client will be tendering for the operational contract.</p> <p>EDPR's "General Contracting Conditions" are mandatory and are attached to every contract to be signed by Contractors. These include provisions relating to the occupational health and safety and employment and social obligations.</p>	<p>quality measurements etc.)</p>
<b>Accident and Disease Monitoring</b>	<ul style="list-style-type: none"> <li>• The employer should establish procedures and systems for reporting and recording occupational accidents and diseases and dangerous occurrences and incidents.</li> <li>• The systems and employer should enable and encourage workers to report to management all occupational injuries and near misses, suspected cases of</li> </ul>	<p>Accident monitoring and reporting will be undertaken in accordance with the requirements of Government Decision 1425/2006. The Health and Safety Inspectorate shall be informed immediately if there is an accident.</p>	<p>No further action is recommended.</p>



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	<p>occupational disease and dangerous occurrence and incidents.</p> <ul style="list-style-type: none"> <li>• All reported occupational accidents, occupational diseases, dangerous occurrences and incidents together with near misses should be investigated to establish what happened, the cause and identify measures necessary to prevent a reoccurrence.</li> <li>• Occupational accidents and diseases should be classified according to fatal and non-fatal injuries and the total work hours during the specified reporting period reported to the appropriate regulatory agency.</li> </ul>		
<b>3.0 Community Health and Safety</b>			
<b>3.1 Water Quality and Availability</b>			
<b>Water Quality</b>	<ul style="list-style-type: none"> <li>• Drinking water sources, whether public or private, should at all times be protected so that they meet or exceed applicable national standards or in their absence the WHO Guidelines for Drinking Water Quality.</li> <li>• Air emissions, wastewater effluents, oil and hazardous materials and wastes should be managed according to the guidance provided in the respective sections of the General EHS Guidelines with the objective of protecting soil and water resources.</li> <li>• Additional requirements apply where the</li> </ul>	<p>There are no zones of hydrological protection, abstraction or potable water sources in or near the site.</p> <p>There will be no water supply connection for the site. Water for general uses and potable bottled water will be delivered to the site.</p>	<p>No further action is recommended.</p>

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	project includes the delivery of water to the community or to users of facility infrastructure where water may be used for drinking, cooking, washing and bathing.		
<b>Water Availability</b>	<ul style="list-style-type: none"> <li>The potential effect of groundwater or surface water abstraction for project activities should be properly assessed through field testing and modelling techniques, accounting for seasonal variability and projected changes in demand in the project area.</li> <li>Project activities should not compromise the availability of water for personal hygiene needs and should take account of potential future increases in demand.</li> <li>The overall target should be the availability of 100 litres per person per day although lower levels may be used to meet basic health requirements.</li> </ul>	There will be no water supply connection for the site. Water for general uses and potable bottled water will be delivered to the site.	No further action is recommended.
<b>3.2 Structural Safety of Project Infrastructure</b>			
	<ul style="list-style-type: none"> <li>Hazards may be posed to the public while accessing project facilities, including burns and smoke inhalation from fires, exposure to hazardous materials, physical trauma from failure of building structures.</li> </ul>	<p>The internal areas of the turbines and substations will not be accessible to the public.</p> <p>Hazard warning signs will be displayed on substations and at least 150m from the turbines, where there is the risk of blade / ice throw.</p>	No further action is recommended
	<ul style="list-style-type: none"> <li>The following issues should be considered and incorporated as appropriate into the planning, siting and design phases:</li> </ul>	The wind farm is located more than 500m from the nearest residential property.	No further action is recommended

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	<ul style="list-style-type: none"> <li>- Inclusion of buffer strips or other methods of physical separation around project sites to protect the public from major hazards associated with hazardous substances or process failure as well as nuisance issues related to noise, odours or other emissions</li> <li>- Incorporating of engineering criteria to prevent failures due to natural risks posed by earthquakes, tsunamis, wind, flooding, landslides and fire.</li> <li>- Application of locally regulated or internationally recognised building codes.</li> <li>• Engineers and architects responsible for designing and constructing facilities should certify the applicability and appropriateness of the structural criteria employed.</li> </ul>		
	<ul style="list-style-type: none"> <li>• Depending on the nature of the project, International Code Council or comparable codes should be followed as appropriate with respect to:               <ul style="list-style-type: none"> <li>- Existing structures</li> <li>- Soils and foundations</li> <li>- Site grading</li> <li>- Specific requirements based on intended use and occupancy</li> <li>- Structural design</li> <li>- Accessibility and means of egress</li> </ul> </li> </ul>	The wind farm consultants, Wind Energy have designed the site in accordance with applicable codes.	No further action is recommended.

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<ul style="list-style-type: none"> <li>- Types of construction</li> <li>- Roof design and construction</li> <li>- Fire-resistant construction</li> <li>- Flood-resistant construction</li> <li>- Construction materials</li> <li>- Interior environment</li> <li>- Mechanical, plumbing and electrical systems</li> <li>- Elevators and conveying systems</li> <li>- Fire safety systems</li> <li>- Safeguards during construction</li> <li>- Encroachments onto public right-of-way</li> </ul>		
	<ul style="list-style-type: none"> <li>• During operation of a project hazard analysis can be undertaken to identify opportunities to reduce the consequences of a failure or accident, such as in respect of hazardous materials storage and use:               <ul style="list-style-type: none"> <li>- Reducing inventories of hazardous materials and process changes to reduce or eliminate the potential off-site consequences of a release</li> <li>- Improving shut-down and secondary containment to reduce the amount of material escaping from containment</li> <li>- Establish safety zones around a site, ensure the provision of emergency medical services to the public.</li> </ul> </li> </ul>	The internal areas of the turbines and the substations will not be accessible to the public.	No further action is recommended.
<b>3.3 Life and Fire Safety</b>			
<b>Applicability and Approach</b>	<ul style="list-style-type: none"> <li>• All buildings accessible to the public should be designed, constructed and</li> </ul>	The substation will not be accessible by the public. It will be designed, constructed and	No further action is recommended.

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	operated in full compliance with local building codes, local fire building regulations, local legal/insurance requirements and an internationally accepted life and fire safety standard.	<p>operated in accordance with appropriate legal requirements and building codes.</p> <p>The Project has been implemented in accordance with EN ISO 17050-1:2004 and Directive 2006/42/CE.</p> <p>The Environment permit 2375/11.08.2009 has been issued by EPA Tulcea and the Authorization 185/10.07.2008 has been issued by the Public Health Direction Tulcea</p>	
<b>Specific Requirements for New Buildings</b>	<ul style="list-style-type: none"> <li>The nature and extent of life and fire safety systems required will depend on the building type, structure, construction, occupancy and exposures. Sponsors should prepare a Life and Fire Safety Master Plan identifying major fire risks, applicable codes, standards and regulations and mitigation measures.</li> <li>The master plan should adequately cover, but not be limited to, the following: <ul style="list-style-type: none"> <li>- Fire Prevention</li> <li>- Means of Egress Detection and Alarm Systems</li> <li>- Compartmentation</li> <li>- Fire Suppression and Control</li> <li>- Emergency Response Plan</li> <li>- Operation and Maintenance</li> </ul> </li> </ul>	<p>The substation will not be accessible by the public. It will be designed, constructed and operated in accordance with appropriate legal requirements and building codes.</p> <p>Appropriate emergency equipment, including fire extinguishers, will be provided at the substation and in other areas at risk around the wind farm. Fire exits will be provided from the substation area which is to be occupied by security personnel.</p>	No further action is recommended.
<b>Specific Requirements for</b>	<ul style="list-style-type: none"> <li>All life and fire safety guideline requirements for new buildings apply to</li> </ul>	There are no existing buildings on the site.	No further action is recommended.

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
<b>Existing Buildings</b>	<p>existing buildings programmed for renovation.</p> <ul style="list-style-type: none"> <li>• A suitably qualified professional conducts a complete life and fire safety review of existing buildings for renovation.</li> <li>• The findings and recommendations are used as the basis of a Corrective Action Plan and a timeframe for implementing the changes.</li> </ul>		
<b>Other Hazards</b>	<ul style="list-style-type: none"> <li>• Facilities, buildings, plants and structures should be situated to minimise potential risks from forces of nature</li> <li>• All such structures should be designed in accordance with the criteria mandated by situation-, climatic- and geology-specific location risks</li> <li>• Structural engineers and architects responsible for facilities should certify the applicability and appropriateness of the design criteria employed</li> <li>• Further compliance requirements set out in fire safety codes and standards in national or regional building regulations or Fire Codes should be implemented.</li> </ul>	<p>The area is identified as being stable in respect of seismic activity, and the Project sites are not vulnerable to landslides or flooding. No other hazards have been identified.</p>	<p>No further action is recommended.</p>
<b>3.4 Traffic Safety</b>			
	<ul style="list-style-type: none"> <li>• Traffic safety should be promoted by all project personnel during movement to and from the workplace and during operation of project equipment on private and public roads.</li> <li>• Road safety initiatives proportional to the</li> </ul>	<p>A health and safety procedure for all activities carried out within the wind farm will need to be prepared in accordance with the provisions of law 319/2006 and GD 1425/2006.</p>	<p>No further action is recommended.</p>

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<p>scope and nature of project activities should include:</p> <ul style="list-style-type: none"> <li>• Adoption of best transport safety practices with the goal of preventing traffic accidents and minimising injuries suffered by project personnel and the public, such as: <ul style="list-style-type: none"> <li>- improving driving skills and requiring licensing of drivers, avoiding dangerous routes and times of the day, use of speed control devices, adopting limits for trip duration and arranging driver rosters to avoid overtiredness.</li> </ul> </li> <li>• Regular maintenance of vehicles and use of manufacturer approved parts.</li> </ul>	<p>Traffic levels associated with operation of the wind farm will be minimal.</p>	
	<ul style="list-style-type: none"> <li>• Where the project may contribute to a significant increase in traffic along existing roads or where road transport is a significant component of a project, recommended measures include: <ul style="list-style-type: none"> <li>- Minimising pedestrian interaction with construction vehicles</li> <li>- Collaboration with local communities and responsible authorities to improve signage, visibility and overall safety of roads.</li> <li>- Using locally sourced materials, wherever possible, to minimise transport distances</li> <li>- Employing safe traffic control measures, including road signs and</li> </ul> </li> </ul>	<p>A health and safety procedure for all activities carried out within the wind farm will need to be prepared in accordance with the provisions of law 319/2006 and GD 1425/2006.</p> <p>Traffic levels associated with operation of the wind farm will be minimal.</p>	<p>No further action is recommended.</p>

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	flag person to warn of dangerous conditions.		
<b>3.5 Transport of Hazardous Materials</b>			
<b>General Hazardous Materials Transport</b>	<ul style="list-style-type: none"> <li>Projects should have procedures in place that ensure compliance with local laws and international requirements applicable to the transport of hazardous materials.</li> <li>Procedures for transporting hazardous materials should include e.g. proper labelling of containers, provision of a shipping document, ensuring the volume, nature, integrity and protection of packaging and containers used for transport are appropriate for the material and the transport modes involved</li> <li>Training employees involved in the transport of hazardous materials, providing the means for emergency response on call 24 hours/day.</li> </ul>	Only a minimal amount of waste oil will be generated during the operation of the wind farm.	No further action is recommended.
<b>Major Transportation Hazards</b>	<ul style="list-style-type: none"> <li>Additional measures should be implemented in relation to major transportation hazards to prevent or minimise the consequences of catastrophic releases of hazardous materials which may result in toxic, fire, explosion or other hazards during transportation.</li> <li>These apply to transportation of hazardous materials at or above the threshold quantities detailed in the UN Transport of Dangerous Goods Model Regulations.</li> </ul>	<p>Appropriate control measures were applied during the transportation of very large rotor blades and sections of the towers during construction.</p> <p>No major transportation hazards are identified associated with operation of the wind farm.</p>	No further action is recommended.



IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<ul style="list-style-type: none"> <li>A Hazardous Materials Transportation Plan should be prepared containing the following:               <ul style="list-style-type: none"> <li>Hazard assessment</li> <li>Management actions (including incident investigation, management of contractors and training)</li> <li>Preventive measures</li> <li>Emergency preparedness and response</li> </ul> </li> </ul>		
<b>3.6 Disease Prevention</b>			
<b>Communicable Diseases</b>	<ul style="list-style-type: none"> <li>Recommended interventions at the project level include:               <ul style="list-style-type: none"> <li>Providing surveillance and active screening and treatment of workers</li> <li>Preventing illness among workers in local communities (e.g. health awareness and education initiatives, training health workers in disease treatment and immunisation programs, providing health services)</li> <li>Providing treatment in on-site or community facilities</li> <li>Promoting collaboration with local authorities to enhance access to health services</li> </ul> </li> </ul>	<p>A Labour medicine contract has to be agreed and all staff are required to undergo annual checks.</p> <p>Due to the nature of the scheme, the potential for community exposure to disease is not considered to be an issue.</p>	No further action is recommended.
<b>Vector-Borne Diseases</b>	<ul style="list-style-type: none"> <li>Project sponsors, in close collaboration with community health authorities, can implement an integrated control strategy for mosquito and other arthropod-borne diseases that might involve:</li> </ul>	Maintenance and cleaning procedures will be implemented with regard to the water tank used for general washing purposes during operation. Staff will be trained not to drink this water.	No further action is recommended.

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<ul style="list-style-type: none"> <li>- Sanitary improvements</li> <li>- Elimination of unusable impounded water</li> <li>- Implementation of integrated vector control programs</li> <li>- Monitoring and treatment of circulating and migrating populations to prevent disease reservoir spread</li> <li>- Educating project personnel and area residents on risks, prevention and available treatment</li> <li>- Monitoring communities during high-risk seasons to detect and treat cases.</li> </ul>	<p>Bottled potable water will be delivered to the site. Ecological toilets will be maintained as required.</p>	
<b>3.7 Emergency Preparedness and Response</b>			
	<ul style="list-style-type: none"> <li>• An emergency is an unplanned event when a project operation loses control, or could lose control, of a situation that may result in risks to human health, property or the environment, either within the facility or in the local community.</li> <li>• All projects should have an Emergency Preparedness and Response Plan that is commensurate with the risks of the facility and that includes the following: <ul style="list-style-type: none"> <li>- Administration (policy, purpose etc.)</li> <li>- Organisation of emergency areas</li> <li>- Roles and responsibilities</li> <li>- Communication systems</li> <li>- Emergency response procedures</li> <li>- Emergency resources</li> <li>- Training and updating</li> </ul> </li> </ul>	<p>There is a procedure for staff to respond in case of an emergency.</p> <p>The Health and Safety Plan which will be implemented during operation of the wind farm will include an Emergency Response plan.</p> <p>The Emergency Response Plan will contain the appropriate information, including communication systems, evacuation procedures, roles and responsibilities and details of contacts of appropriate services in the event of emergency events.</p> <p>Emergency provisions to be covered in the Response Plan include lightning protection,</p>	<p>No further action is recommended.</p>

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<ul style="list-style-type: none"> <li>- Checklists (role and action list and equipment checklist)</li> <li>- Business continuity and contingency</li> </ul>	fire protection equipment and rescue plan, and electrical safety provisions.	
<b>Communication Systems</b>	<ul style="list-style-type: none"> <li>• Worker notification and communication – to include alarm bells, visual alarms. Warning systems to be tested at least annually. A back-up system to be installed for communications with off-site resources, such as fire departments, in the event that normal communication methods may be inoperable during an emergency.</li> <li>• If a local community may be at risk from a potential emergency arising at the facility the company should implement communication systems to alert the community, such as vehicle mounted speakers, advise on appropriate protection, audible alarms etc.</li> <li>• Emergency information should be communicated to the media through a trained spokesperson, written press releases with accurate information.</li> </ul>	<p>There is a procedure for staff to respond in case of an emergency.</p> <p>Communication systems necessary to protect workers and the local community by broadcasting stations and mobile telephone will be implemented.</p>	No further action is recommended.
<b>Emergency Resources</b>	<p>Provision to be made for:</p> <ul style="list-style-type: none"> <li>• Finance and emergency funds – funding emergency activities</li> <li>• Fire services – whether sufficient capacity is available locally</li> <li>• Medical services – the company should provide first aid attendants as well as suitable medical equipment</li> <li>• Availability of resources – measures to be</li> </ul>	<p>There is a procedure for staff to respond in case of an emergency.</p> <p>The Health and Safety Plan which will be implemented during operation of the wind farm will include an Emergency Response plan.</p>	No further action is recommended.

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<p>implemented to manage the availability of resources in case of an emergency, e.g. providing personnel who can readily call up resources as required, tracking and managing costs associated with emergency resources</p> <ul style="list-style-type: none"> <li>• Mutual aid agreements - may decrease confusion and provide a clear basis for response by mutual aid providers, where appropriate mutual aid agreements should be maintained with other organisations to allow for sharing of personnel and specialised equipment</li> <li>• Contact list – to be maintained for all internal and external resources and personnel and maintained annually.</li> </ul>		
<b>Training and Updating</b>	<p>Programs should:</p> <ul style="list-style-type: none"> <li>• Identify training needs based on roles and responsibilities and requirements of personnel in an injury</li> <li>• Develop a training plan to address needs, particularly for fire fighting, spill response and evacuation</li> <li>• Conduct annual training at least</li> <li>• Provide training exercises to test emergency preparedness (debrief on completion and update plan as required)</li> </ul>	<p>Maintenance workers and security personnel will be provided with appropriate health and safety training and refresher training at least once per year.</p> <p>The Health and Safety Plan will include a training plan to address the requirements associated with the wind farm.</p>	No further action is recommended.
<b>Business Continuity and Contingency</b>	<p>Measures to address business continuity and contingency include:</p> <ul style="list-style-type: none"> <li>• Identifying replacement supplies or facilities to allow business continuity</li> </ul>	Not applicable	No further action is recommended.

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<p>following an emergency</p> <ul style="list-style-type: none"> <li>Using redundant or duplicate supply systems as part of facility operations to increase the likelihood of business continuity</li> <li>Maintaining back-ups of critical information in a secure location to expedite the return to normal operations following an emergency.</li> </ul>		
<b>4.0 Construction and Decommissioning</b>			
<b>4.1 Environment</b>			
<b>Noise and Vibration</b>	<ul style="list-style-type: none"> <li>Noise reduction and control strategies to consider in areas close to community areas include: <ul style="list-style-type: none"> <li>Planning activities in consultation with local communities to minimise disturbance</li> <li>Using noise control devices, such as temporary barriers and muffling devices</li> <li>Avoiding or minimising project transportation through community areas</li> </ul> </li> </ul>	The EIA Report discusses basic aspects of acoustics and presents a noise map covering a section of the wind farm, quoting a noise target to not exceed 45dB(A) (assumed to be $L_{Aeq,T}$ ).	Noise monitoring should be undertaken at the nearest noise sensitive property to demonstrate compliance with EHS Guidelines.
<b>Soil Erosion</b>	<p>Soil erosion and water system management approaches include:</p> <ul style="list-style-type: none"> <li>Reducing or preventing erosion (e.g. by re-vegetating areas promptly, contouring and minimising steepness of slopes)</li> <li>Reducing or preventing off-site sediment transport through use of settlement ponds, silt fences and water treatment and</li> </ul>	No soil erosion or water system management approaches are considered to be required at the site.	No further action is recommended.

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<p>modifying or suspending activities during extreme rainfall.</p> <ul style="list-style-type: none"> <li>• Clean runoff management – segregating or diverting clean water runoff to prevent it mixing with water containing a high solids content</li> <li>• Road design – limiting access road gradients to reduce run-off induced erosion, providing adequate road drainage</li> <li>• Disturbance to water bodies – depending on the potential for adverse impacts install free-spanning structures, restrict the duration and timing of in-stream activities to lower flow periods and avoiding periods critical to biological cycles, using isolation techniques such as berming</li> <li>• Structural (slope) stability – providing short-term measures for slope stabilisation, sediment control and subsidence control until long-term measures can be implemented, providing adequate drainage systems to minimise and control infiltration.</li> </ul>		
<b>Air Quality</b>	<p>Techniques to reduce and control air emissions from construction and decommissioning site include:</p> <ul style="list-style-type: none"> <li>• Minimising dust from material handling sources by using covers and/or control equipment,</li> <li>• Minimising dust from open area sources, including storage piles, by use of covers</li> </ul>	<p>Due to the nature of the project, there are no atmospheric emissions from the operational stage.</p> <p>Section 4.2 of the EIA Report considers the potential impacts on air quality during the construction works. During this period mitigation measures and measures in</p>	<p>A site restoration plan will be implemented during decommissioning to ensure that suitable control measures are implemented to avoid or minimise environmental impacts (such as noise, dust and potential spillage of oils).</p>

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<p>and increasing the moisture content</p> <ul style="list-style-type: none"> <li>• Dust suppression techniques such as applying water to minimise dust from vehicle movements</li> <li>• Removing potential hazardous air pollutants, such as asbestos, from existing infrastructure prior to demolition</li> <li>• Managing emissions from mobile sources according to Section 1.1.</li> <li>• Avoiding open burning</li> </ul>	<p>accordance with environmental permits were carried out to limit air pollution.</p>	
<b>Solid Waste</b>	<ul style="list-style-type: none"> <li>• Techniques for preventing and controlling non-hazardous and hazardous construction site solid waste include those already discussed in Section 1.6</li> </ul>	<p>The EIA Report does not provide an assessment of waste management (the operation of the scheme will not produce waste) although a waste collection system was implemented during the construction works.</p> <p>In addition, the EIA Report states that when the turbines are decommissioned various materials will be suitable for recycling.</p>	<p>No further action is recommended.</p>
<b>Hazardous Materials</b>	<p>Techniques for prevention, minimisation and control of impacts associated with the release of hazardous materials include:</p> <ul style="list-style-type: none"> <li>• Providing adequate secondary containment for fuel storage tanks and for the temporary storage of other fluids such as oils</li> <li>• Using impervious surfaces for refuelling areas</li> <li>• Training workers on correct transfer and handling of fuels and chemicals and spill</li> </ul>	<p>The EIA Report does not refer to any stored hazardous materials on the site.</p> <p>The operation of the wind farm will not require the use of any significant quantities of hazardous materials.</p> <p>Trained specialists will carry out maintenance of the wind turbines and will ensure appropriate storage and disposal of any oils and lubricants, including clean and</p>	<p>A site restoration plan will be implemented during decommissioning to ensure that suitable control measures are implemented to avoid or minimise environmental impacts (such as noise, dust and potential spillage of oils).</p>

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<p>response</p> <ul style="list-style-type: none"> <li>• Providing portable spill containment and cleanup equipment on-site and training in its deployment</li> <li>• Assessing the contents of hazardous materials in building systems and process equipment and removing them prior to commencement of decommissioning activities and managing their treatment and disposal according to Sections 1.5 and 1.6.</li> <li>• Assessing the presence of hazardous substances in or on building materials and decontaminating or properly managing contaminated building materials.</li> </ul>	waste materials.	
<b>Wastewater Discharges</b>	<ul style="list-style-type: none"> <li>• Adequate portable or permanent sanitation facilities serving all workers should be provided at all construction sites.</li> <li>• Sanitary wastewater in construction should be managed as described in Section 1.3.</li> </ul>	<p>Section 4.1.4 of the EIA Report states that construction and operation waste water will be collected in special containers and transported off-site for disposal.</p> <p>There will be no connection to the site for water supply or sewerage.</p>	No further action is recommended.
<b>Contaminated Land</b>	<p>A basic strategy to manage the risk from contaminated land should include:</p> <ul style="list-style-type: none"> <li>• Managing contaminated media with the object of protecting the safety and health of occupants of the site, the surrounding community and the environment</li> <li>• Understanding the historic use of the land with regard to the potential presence of hazardous materials or oil prior to</li> </ul>	Measures to protect the ground from spillages and hazardous substances are provided in section 4.3 of the EIA Report.	No further action is recommended.



IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<p>commencement of construction or decommissioning activities</p> <ul style="list-style-type: none"> <li>Preparing plans and procedures to respond to the discovery of contaminated media to minimise or reduce the risk to health, safety and the environment consistent with the approach in Section 1.6.</li> <li>Preparation of a management plan to manage obsolete, abandoned, hazardous materials or oil consistent with Section 1.6.</li> </ul>		
<b>4.2 Occupational Health and Safety</b>			
<b>Over-exertion</b>	<p>Recommendations to prevent and control injuries from over-exertion and ergonomic injuries include:</p> <ul style="list-style-type: none"> <li>Training of workers in lifting and materials handling techniques</li> <li>Planning work site layout to minimise the need for manual transfer of heavy loads</li> <li>Selecting tools and designing work station that reduce force requirements and holding times and which promote improved postures</li> <li>Implementing administrative controls into work processes, such as job rotations and rest or stretch breaks.</li> </ul>	<p>Staff involved in maintenance of the turbines will be appropriately trained in respect of manual handling, working at heights and other specialist areas. Maintenance staff will work in teams of at least 2 personnel.</p> <p>According to the provisions of law 319/2006 and GD 1425/2006 a health and safety procedure has to be prepared for all activities carried out within the wind farm.</p>	No further action is recommended.
<b>Slips and Falls</b>	<p>Recommended methods for the prevention of slips and falls from, or on, the same elevation include:</p> <ul style="list-style-type: none"> <li>Implementing good housekeeping practices</li> </ul>	<p>Protection measures in respect of slips and falls will be implemented in accordance with legal requirements. Specific protection measures against slips and falls shall be included in the training program for all</p>	No further action is recommended.

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<ul style="list-style-type: none"> <li>• Cleaning up excessive waste debris and liquid spills regularly</li> <li>• Locating electrical cords and ropes in common areas and marked corridors</li> <li>• Use of slip retardant footwear.</li> </ul>	<p>workers.</p> <p>According to the provisions of law 319/2006 and GD 1425/2006 a health and safety procedure has to be prepared for all activities carried out within the wind farm.</p>	
<b>Work at Heights</b>	<p>If fall hazards exist a fall protection plan should be in place which includes one or more of the following, depending on the nature of the fall hazard:</p> <ul style="list-style-type: none"> <li>• Training and use of temporary fall protection devices, such as rails, when working at heights equal or greater than 2 meters or at any height if the risk includes falling into operating machinery, water or other liquid, into hazardous substances or through an opening in a work surface</li> <li>• Training and use of personal fall arrest systems, such as full body harnesses and energy absorbing lanyards able to support 5,000 pounds, as well as fall rescue procedures to deal with workers whose fall has been successfully arrested.</li> <li>• Use of control zones and safety monitoring systems to warn workers of their proximity to fall hazard zones as well as securing, marking and labelling covers for openings in floors, roofs or walking surfaces</li> </ul>	<p>Protection measures in respect of working at height will be implemented in accordance with legal requirements.</p> <p>According to the provisions of law 319/2006 and GD 1425/2006 a health and safety procedure has to be prepared for all activities carried out within the wind farm.</p>	No further action is recommended.
<b>Struck By Objects</b>	Techniques for the prevention and control of hazards from being struck by objects include:	According to the provisions of law 319/2006 and GD 1425/2006 a health and safety	No further action is recommended.

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<ul style="list-style-type: none"> <li>Using a designated and restricted waste drop or discharge zones and a chute for safe movement of wastes from upper to lower levels</li> <li>Maintaining clear traffic ways</li> <li>Use of temporary fall protection measures in scaffolds</li> <li>Evaluating work areas during blasting and using blast mats</li> <li>Wearing appropriate PPE, such as safety glasses with side shields, face shields hard hats and safety shoes</li> </ul>	<p>procedure has to be prepared for all activities carried out within the wind farm.</p> <p>Measures to prevent and control the risk of hazards from being struck by objects will be implemented by the equipment manufacturer. These measures will comply with the requirements of national legislation.</p> <p>In addition, staff will be trained and provided with appropriate PPE (e.g. head protection) for use in situations where there is a risk of being struck by an object.</p>	
<b>Moving Machinery</b>	<p>Techniques for the prevention and control of impacts from moving machinery include:</p> <ul style="list-style-type: none"> <li>Planning and segregating the location of vehicle traffic, machine operation and walking areas, establishment of speed limits</li> <li>Ensuring visibility of personnel through use of high visibility vests when working in or waling through heavy equipment operating areas</li> <li>Ensuring moving equipment is fitted with audible back-up alarms</li> <li>Using inspected and well maintained lifting devices appropriate for the load</li> </ul>	<p>According to the provisions of law 319/2006 and GD 1425/2006 a health and safety procedure has to be prepared for all activities carried out within the wind farm.</p> <p>Measures to prevent and control impacts from moving equipment will be implemented by the equipment manufacturer and the operator of the equipment. These measures will comply with the requirements of national legislation</p>	No further action is recommended.
<b>Dust</b>	<ul style="list-style-type: none"> <li>Dust suppression techniques should be implemented</li> <li>PPE, such as dust masks, should be used where dust levels are excessive.</li> </ul>	No significant sources of dust are associated with operation of the wind farm.	No further action is recommended.

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
<b>Confined Spaces and Excavations</b>	<p>In addition to the guidance provided in Section 2.8 the occupational hazards associated with confined spaces and excavations in construction and decommissioning sites should be prevented according to the following recommendations:</p> <ul style="list-style-type: none"> <li>Controlling site-specific factors which may contribute to excavation slope instability, such as use of excavation dewatering, side-walls support</li> <li>Providing safe means of access and egress from excavations</li> <li>Avoiding operation of combustion equipment for prolonged periods inside excavation areas where workers are required to enter unless the area is actively ventilated.</li> </ul>	<p>According to the provisions of law 319/2006 and GD 1425/2006 a health and safety procedure has to be prepared for all activities carried out within the wind farm.</p> <p>Measures to prevent and control hazards associated with working in confined spaces and excavations will be implemented. These measures will comply with the requirements of national legislation.</p>	No further action is recommended.
<b>Other Site Hazards</b>	<p>Risk of exposure to dust, chemicals, hazardous or flammable materials and wastes should be prevented through the implementation of project-specific plans and other applicable management practices, including:</p> <ul style="list-style-type: none"> <li>Use of specially trained personnel to identify and remove waste materials from tanks, vessels or contaminated land</li> <li>Use of specially trained personnel to identify and selectively remove potentially hazardous materials in building elements prior to dismantling or demolition</li> <li>Use of waste-specific PPE based on the</li> </ul>	<p>According to the provisions of law 319/2006 and GD 1425/2006 a health and safety procedure has to be prepared for all activities carried out within the wind farm.</p> <p>Measures to prevent and control hazards associated with working in confined spaces and excavations will be implemented. These measures will comply with the requirements of national legislation.</p>	No further action is recommended.

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	results of an occupational health and safety assessment, including respirators, clothing/protective suits, gloves and eye protection.		
<b>4.3 Community Health and Safety</b>			
<b>General Site Hazards</b>	<ul style="list-style-type: none"> <li>Projects should implement risk management strategies to protect the community from physical, chemical or other hazards associated with sites under construction and decommissioning.</li> <li>Risk management strategies may include: <ul style="list-style-type: none"> <li>- Restricting access to the site, including fencing, signage and communication of risks to the local community</li> <li>- Removing hazardous conditions on construction sites that cannot be controlled effectively with site access restrictions, such as covering openings to small confined spaces.</li> </ul> </li> </ul>	No further action is recommended.	No further action is recommended.
<b>Disease Prevention</b>	<ul style="list-style-type: none"> <li>Recommendations for the prevention and control of communicable and vector-borne diseases also applicable to construction phase activities are provided in Section 3.6 (Disease Prevention).</li> </ul>	Due to the nature of the scheme, the potential for community exposure to disease is not considered to be an issue.	No further action is recommended.
<b>Traffic Safety</b>	<ul style="list-style-type: none"> <li>The incidence of road accidents should be minimised through a combination of education and awareness-raising and the adoption of procedures described in Section 3.4 (Traffic Safety).</li> </ul>	No transport effects are associated with operation of the wind farm.	No further action is recommended.

**Table 2c) European Best Practice Guidelines for Wind Energy Development**

European Best Practice Guidelines for Wind Energy Development	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
<b>1.0 Site Selection</b>			
<b>1.3 Initial Environmental Considerations</b>			
<b>Visual aspect</b>	<ul style="list-style-type: none"> <li>The visibility of the proposed site and the potential visibility from important public viewpoints should be assessed</li> </ul>	<p>Section 4.6 of the EIA Report discusses the potential impacts of the proposed development on the existing landscape. The EIA Report states that the wind turbines will have a positive impact on the landscape.</p> <p>The EIA Report states that, as the visual impacts of the proposed development have been identified as positive, then there has been no requirement to consider measures to minimise visual impacts.</p> <p>The assessment methodology in respect of the visual impact of the wind farm and information relating to a baseline landscape survey of the site and surrounding area are not included in the EIA Report. Assessment of the landscape and visual impacts has been provided in a Supplementary Information Report.</p>	Further consideration of visual and landscape impacts is provided in the Supplementary Information Report.
<b>Proximity to dwellings</b>	<ul style="list-style-type: none"> <li>Wind turbines should not be located so close to domestic properties that they unreasonably affect the amenity of such properties through noise, shadow</li> </ul>	Predicted noise levels are low. The closest wind turbine to a residential property is more than 500 metres away.	Noise monitoring is to be undertaken to demonstrate compliance with EHS Guidelines.

European Best Practice Guidelines for Wind Energy Development	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	flicker, visual domination or reflected light		
<b>Ecology</b>	<ul style="list-style-type: none"> <li>Developers should take account of existing information relating to both ecological designations which cover a particular area and particular protected species that are found in the area either year round or seasonally</li> </ul>	<p>Section 4.6 of the EIA Report describes the existing ecological conditions on the Site and in the surrounding area, with particular consideration given to habitats and species of flora and fauna associated with the adjacent Agighiol Hills SCI. One of the wind farm's turbines is located on agricultural land within the adjacent Agighiol Hills SCI.</p> <p>The EIA Report does not include consideration of the power transmission lines or pylons associated with the wind farm. It is known from other sources that approximately 600m of overhead transmission lines and three pylons associated with the wind farm are located on agricultural land within the Deniz Tepe SPA.</p> <p>The EIA Report lists a number of species of conservation value, known or thought to occur in the general area, but this does not appear to have been supported by 'site specific' fieldwork, rather it is a general description of the species and habitats known to occur in this region of Romania.</p> <p>Some EU Birds Directive Annex 1 species were identified within the Deniz Tepe SPA which also have the potential to occur on site.</p>	<p>Further ecological assessment and an assessment of cumulative impacts associated with other wind farms in the area (based on a zone of influence of 10-15km of the Sarichioi wind farm) has been undertaken and the results are presented in the Supplementary Information Report.</p> <p>An independent Ornithological Expert (IOE) is to be appointed by EDPR. The IOE will have responsibility for bird and bat monitoring and surveys and for the implementation of appropriate mitigation measures as required.</p> <p>A Collision Risk Assessment is to be completed within two years of the wind farm becoming operational.</p> <p>Development and implementation by the IOE of a detailed shut down procedure for the wind farm in accordance with EBRD and IFC standards. The IOE having the authority to implement appropriate mitigation measures based on an agreed protocol, including reducing the speed of the turbines or,</p>

European Best Practice Guidelines for Wind Energy Development	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
		Further assessment of potential ecological impacts and cumulative impacts has been undertaken and is presented in the Supplementary Information Report.	<p>potentially, for the turbines to be temporarily turned off should a migrant flock be observed to be approaching.</p> <p>The nearest wind farm to the Sarichioi site is an adjacent operational wind farm at Agighiol. The Sarichioi wind farm is located approximately 4km west of the Danube Delta SPA. Given the mitigation measures proposed it is anticipated that the Sarichioi site will not contribute to any residual cumulative ecological effects from wind farm developments in the local area. The assessment of no significant residual cumulative effect will be confirmed by the proposed mitigation and monitoring measures.</p> <p>The spacing of the turbines at the Sarichioi site, the open topography and the limited amount of semi-natural habitats on the site, suggests the site would be unlikely to contribute towards a significant cumulative disturbance effect.</p> <p>The mitigation measures, including results of the wintering, breeding and migratory bird surveys as well as Vantage Point surveys and bat surveys, will also assist in confirming that there are no significant cumulative disturbance</p>



European Best Practice Guidelines for Wind Energy Development	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
			<p>effects on avifauna.</p> <p>Given that most modern wind farms consist of large turbines, with a typical spacing of 450 metres or more, it is unlikely that a significant 'barrier effect' will occur. Due to their location and the lack of semi-natural habitats on the Sarichioi site it is predicted that the wind farm developments would not contribute towards any significant cumulative barrier effect on birds.</p>
<b>Archaeological historical heritage</b>	<ul style="list-style-type: none"> <li>The existence of listed buildings, Conservation Areas and archaeological sites may have an influence on the acceptability of a particular site</li> </ul>	<p>There are no buildings within the project site. Section 4.8 of the EIA Report states that there are no impacts on archaeological, ethnic, cultural or heritage assets.</p> <p>An archaeological surveillance contract was put in place during the construction works in the event that archaeological remains were found during excavations for the foundations of the turbines and underground cabling. However no remains were found during the construction works and no archaeological work was required.</p>	No further action is recommended.
<b>Recreational uses</b>	<ul style="list-style-type: none"> <li>Any areas on or close to the site identified in development plans for recreational use should be considered</li> </ul>	No information on recreational areas is provided in the EIA Report and it is understood that there are no recreational areas close to the site.	No further action is recommended.
<b>Telecommunications</b>	<ul style="list-style-type: none"> <li>Microwave, TV, radar or</li> </ul>	No effects on telecommunications are	No further action is recommended.

European Best Practice Guidelines for Wind Energy Development	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	radio transmissions may be affected by the presence of wind turbines. Consideration should be given to situations where this might occur	discussed in the EIA Report.  The wind farm is operational and has obtained the necessary permits.	
<b>Civil and military airports</b>	<ul style="list-style-type: none"> <li>For sites close to airport, the relevant airport authority should be consulted</li> </ul>	<p>No airports are known in proximity of the site.</p> <p>Red flashing lights have been provided on top of the turbines.</p> <p>If any airports are located within approximately 60km from the development an influence on airport radar is possible.</p>	No further action is recommended.
<b>Restricted areas</b>	<ul style="list-style-type: none"> <li>There may be restrictions to be development of wind turbine projects in the proximity of security areas, such as military installation, telecommunications installations etc.</li> </ul>	There are no restricted areas within the Site boundary.	No further action is recommended.
<b>1.4 Dialogue and Consultation</b>			
<b>Initial consultations</b>	<ul style="list-style-type: none"> <li>Developers should have initial discussions with the local planning authority and statutory consultees to identify and agree potential issues which should be addressed</li> </ul>	<p>During the construction of the wind farm, EDPR undertook a number of actions in order to raise the awareness of the local community. Local meetings with City Hall were held to provide information on the constructions activities.</p> <p>It is understood that the City Hall and EPA</p>	No further action is recommended.

European Best Practice Guidelines for Wind Energy Development	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
		<p>provided feedback on the scoping of the EIA as part of the screening procedure.</p> <p>It is noted that one of the 11 turbines is situated on arable land within the Agighiol Hills SCI. The EIA Report further states that in response to a letter from the EPA Tulcea (No. 1244/25.03.2009) the proposed number of wind turbines was decreased by nine, from 20 turbines which were originally proposed in the technical memorandum, to 11.</p>	
<b>2. Project Feasibility</b>			
<b>2.3 Environmental Considerations</b>			
<b>Scoping</b>	<ul style="list-style-type: none"> <li>The developer should agree the scope of the environmental assessment required by the local planning authority</li> </ul>	It is understood that the City Hall and EPA provided feedback on the scope of the EIA as part of the screening procedure.	No further action is recommended.
<b>Dialogue consultation and</b>	<ul style="list-style-type: none"> <li>The developer should open a dialogue with the local community about the project. The developer should nominate a point of contact with a telephone number and/or address</li> </ul>	<p>During the construction of the wind farm, EDPR undertook a number of actions in order to raise the awareness of the local community. Local meetings with City Hall were held to provide information on the constructions activities.</p> <p>A Public Debate on the EIA for the wind farm was held at Sarichioi as required by Romanian legislation.</p> <p>A Stakeholder Engagement Plan will be</p>	Further consultation as described in the SEP will be undertaken.

European Best Practice Guidelines for Wind Energy Development	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
		prepared which will include a point of contact for members of the public.	
<b>Local planning authority</b>	<ul style="list-style-type: none"> <li>The developer should notify the local planning authority of its intention to study the feasibility of the selected site.</li> </ul>	An urban certificate was issued to the City Hall in respect of the project, in accordance with the legal procedure for construction development.	No further action is recommended.
<b>Local communities</b>	<ul style="list-style-type: none"> <li>The developer should work with the local planning authority to consider how the informal public consultation should be conducted and how its results should be taken into account.</li> <li>This consultation should be with non-statutory groups and individuals who have an interest in the proposed development</li> <li>Comments received from this consultation will give an indication of local views which may be useful in reappraisals of the project design</li> </ul>	<p>A public meeting was held in Sarichioi (May 2011) where information was provided on the Projects, including the equipment to be installed, construction period and environmental issues associated with the developments. During the public meeting attendees raised questions regarding the exploitation of the land plots surrounding the wind farm sites and it was explained that no changes will occur as a result of the wind farm construction and operation.</p> <p>A Stakeholder Engagement Plan will be prepared which will include a point of contact for members of the public.</p>	Further consultation with the local community is programmed during the operation to assist the local community and to understand any potential future commitments which may be required. Information on the proposed further consultation is provided in the Stakeholder Engagement Plan.
<b>3. Detailed Assessment</b>			
<b>3.3.2 Topics that could be considered in the environmental statement</b>			
<b>Site selection</b>	<ul style="list-style-type: none"> <li>Explain why the particular site under assessment has been selected</li> </ul>	The site was selected following completion of a comprehensive wind survey programme. Key factors in the site selection included:	Mitigation measures as set out in the various environmental permits (including those issued by EcoPontica and the Danube Delta Biosphere Reserve

European Best Practice Guidelines for Wind Energy Development	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
		<ul style="list-style-type: none"> <li>- Sites to be located outside of protected ecological areas; and</li> <li>- Compliance with legislation relating to distances from existing electrical lines, roads and residential areas.</li> </ul> <p>The layout of the wind farm and the design and choice of turbines are based on the optimum performance in terms of energy generation.</p> <p>The number of turbines was reduced from the original 20 to 11 to minimise the impact of the project would have on the nearby SCI.</p> <p>One of the wind turbines (covering an area of 0.08ha) is located on agricultural land within a designated ecological site (Dealurile Agighiolului SCI) and was agreed during consultation with the Tulcea EPA and the ABRDD in March 2009.</p> <p>During construction of the overhead transmission lines it was necessary to make some changes from a technical perspective and the locations of three pylons (an area of 0.1ha) were revised such that they are located on agricultural land within the Deniz Tepe SPA), together with approximately 600m of overhead transmission line. Consultation was held with Tulcea EPA, the SOR and EcoPontica regarding this change and a permit</p>	<p>Authority (ABRDD) should be implemented.</p> <p>Those which have been implemented to date by EDPR include installation of the artificial falcon nests, installation of flashing beacons on the turbines and painting of the turbine blades. These measures will be implemented on a phased basis as the project progresses.</p>

European Best Practice Guidelines for Wind Energy Development	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
		was obtained, requiring the implementation of bird monitoring and certain mitigation measures to deter bird species from the wind farm.	
<b>Visual and landscape assessment</b>	<ul style="list-style-type: none"> <li>Existing landscape should be described</li> <li>A Zone of Visual Influence should be defined and a map produced which indicates where the proposal may be visible from within a radius agreed with the local planning authority</li> <li>Consider the proximity of proposed project to already existing wind projects and whether it will be possible to see one or more such projects from agreed viewpoints in the surrounding area. The significance of this should be assessed</li> <li>The movements of the sun should be taken into consideration – to assess the movement of the shadow of the turbine on sunny days.</li> <li>Dazzling light from rotor blades can be prevented by using an anti-reflection layer</li> </ul>	<p>The visual impacts of the proposed development have been identified as positive in the EIA report, there has been no requirement to consider measures to minimise visual impacts.</p> <p>The EIA Report does not include a zone of visual influence plan. A full assessment of visual impacts has not been presented in the EIA Report. Photomontages have been prepared.</p> <p>Therefore it has not been possible to assess the methodology used in respect of the landscape and visual impact assessment.</p> <p>It is considered that the movement of the sun is not be relevant given that there are no residential properties close enough to the project site to be affected by this.</p>	Further assessment of visual and landscape impacts together with cumulative impacts associated with other wind farms in the local area is provided in the Supplementary Information Report.

European Best Practice Guidelines for Wind Energy Development	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
<b>Noise assessment</b>	<p>on the rotor blades</p> <ul style="list-style-type: none"> <li>• The advisable distance between residences and the proposed development will depend on various factors, e.g. topography, character and level of background noise and the size of development</li> <li>• Prediction of the sound produced by the proposed development in the surrounding area should be made and presented to the local planning authority</li> <li>• Key dwelling (normally the nearest in each direction) should be identified in consultation with the local planning authority from where background noise measurement should be taken.</li> <li>• A survey should be undertaken of the character and level of the background noise.</li> </ul>	Noise predictions were undertaken as part of the EIA for a sample of wind turbines. Predictions have been undertaken as part of the Gap Analysis. Noise levels are predicted to comply with relevant international guidance.	Noise monitoring should be undertaken to demonstrate compliance with EHS Guidelines.
<b>Ecological assessment</b>	<ul style="list-style-type: none"> <li>• The fauna and flora that are found at the proposed site (either year round or</li> </ul>	It is not clearly specified within the EIA report that survey work has been undertaken and the EIA refers to a larger extent of the territory,	An independent Ornithological Expert (IOE) is to be appointed by EDPR. The IOE will have responsibility for bird and

European Best Practice Guidelines for Wind Energy Development	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<p>seasonally) should be considered in relation to the loss of habitat, their sensitivity to disturbance and to their importance (based on national law or policy).</p> <ul style="list-style-type: none"> <li>It is important the ecological survey work is undertaken at the appropriate time of the year to take account of the seasonal nature of some potential impacts.</li> <li>Developer should meet with the local planning authority and relevant consultees to discuss the timing of the construction and amendment of the wind turbine positions to avoid important species or habitats.</li> <li>There may be requirement for on-going monitoring or an overall Environmental Management Plan for the construction period or for a defined number of years post-construction, this should be discussed with the local planning authority and relevant consultees.</li> </ul>	<p>rather than to the site. Monitoring prior to, during and post-construction is required in respect of avifauna, as set out in the Environmental Agreement.</p> <p>EDPR will appoint an IOE who will be responsible for bird monitoring and mitigation as well as bat surveys at the site.</p> <p>The site walkover visit in May 2012 recorded a number of bird species, including species listed in Annex 1 of the Birds Directive and species of significance due to the unfavourable conservation status within Europe.</p>	<p>bat monitoring and surveys and for the implementation of appropriate mitigation measures as required. At certain times of the year during spring and autumn migration periods in particular the rotor speed of the turbines could be reduced and/or they could be temporarily turned off during bird and bat migration periods, should it be required.</p> <p>The monitoring activities to be undertaken by the IOE will include:</p> <ul style="list-style-type: none"> <li>Vantage point and mortality surveys. The frequency of the surveys, seasons in which they are carried out and the methods used should be those which are established and recognised as providing valid data (such as those set out in Scottish Natural Heritage 2010)</li> <li>The monitoring should be done weekly after commissioning of the wind farm and during spring (March-May) and autumn migration (August-October) should increase to three shifts per week.</li> <li>Initial monitoring should take less</li> </ul>



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	<ul style="list-style-type: none"> <li>A well designed project should not result in loss of valuable habitat or adverse impact on protected species</li> </ul>		<p>than one year (with certain species it is necessary that the monitoring program be designed for two years) and a management plan prepared afterwards. Subsequent monitoring must occur in years 5, 10 and 15 during the operation of the wind farm. The results of monitoring must be presented in a report for the first three years of operational and another report after 15 years.</p> <ul style="list-style-type: none"> <li>The results of vantage point and mortality monitoring should be recorded and reported to SOR.</li> </ul>
<b>Archaeological and historical assessment</b>	<ul style="list-style-type: none"> <li>The physical impact of the proposal and the effect on setting should be examined.</li> <li>Mitigating measures should be discussed with the local planning authority and relevant consultees.</li> </ul>	<p>There are no buildings within the project site. Section 4.8 of the EIA Report states that there are no impacts on archaeological, ethnic, cultural or heritage assets.</p> <p>An archaeological surveillance contract was put in place during the construction works in the event that archaeological remains were found during excavations for the foundations of the turbines and underground cabling. However no remains were found during the construction works and no archaeological work was required.</p>	No further action is recommended.
<b>Hydrological assessment</b>	<ul style="list-style-type: none"> <li>An assessment of the impact of the proposed development</li> </ul>	<p>There are no hydrological networks on the site. The closest water feature is Lake Agighiol</p>	No further action is recommended.

European Best Practice Guidelines for Wind Energy Development	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<p>on water courses, their quality and quantity may be necessary.</p> <ul style="list-style-type: none"> <li>An assessment of spring water supplies should be undertaken where appropriate</li> </ul>	(5km from the site).	
<b>Interference with telecommunications systems</b>	<ul style="list-style-type: none"> <li>Communication system users should be approached for their views.</li> <li>Technical solutions should be considered if required.</li> </ul>	<p>No effects on telecommunications are discussed in the EIA Report.</p> <p>The wind farm is operational and has obtained the necessary permits.</p>	No further action is recommended.
<b>Aircraft safety</b>	<ul style="list-style-type: none"> <li>Wind energy projects need to be sited so as not to cause a hazard to aircraft safety through any effects on radar systems or low flying aircraft.</li> <li>The civil and military authorities must be consulted.</li> </ul>	<p>No airports are known within close proximity of the site.</p> <p>Red flashing lights have been provided on top of the turbines.</p> <p>If any airports are located within approximately 60km from the development an influence on airport radar is possible.</p>	No further action is recommended.
<b>Safety assessment</b>	<ul style="list-style-type: none"> <li>A safety assessment should be made to consider the structural integrity of the wind turbines intended for use on the site.</li> <li>Other issues which may be considered include highway safety and shadow flicker</li> </ul>	<p>The distance to the closest residence is more than 500m from the site.</p> <p>The wind turbines will be provided with appropriate technical systems, such as imbalance detection and shut down system, to minimise the risks associated with blade / ice throw.</p> <p>Appropriate warning signs relating to the risk of</p>	No further action is recommended

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		<p>blade / ice throw will be provided at least 150m from the turbines in all directions.</p> <p>The access roads around the wind farm will need to be properly marked for use during the night-time.</p>	
<b>Traffic management and construction</b>	<ul style="list-style-type: none"> <li>The impacts of construction (including access roads) should be assessed as part of the visual, ecological, hydrological and archaeological assessments.</li> <li>Any road improvement needed to accommodate the development should be discussed and agreed with the local authority.</li> </ul>	<p>As part of the construction works some roads local to the site were upgraded in order to accommodate heavy vehicle movements associated with transportation of the turbine components and underground and overhead powerlines during construction.</p>	No further action is recommended.
<b>Electrical connection</b>	<ul style="list-style-type: none"> <li>Careful account should be taken of the potential impacts on the environment and on land use and appropriate measures taken to avoid unnecessary adverse impacts during installation of electrical cables.</li> <li>Details of the electrical connection (overhead or underground) should be examined as part of the assessment.</li> </ul>	<p>The EIA report does not include consideration of environmental impacts associated with the connection to the national grid, including overhead transmission lines and associated infrastructure.</p> <p>The required permits have been issued in respect of the electrical connection for the wind farm. It is noted that approximately 600m of overhead transmission lines and three pylons are located within the Deniz Tepe SPA. A permit has been issued by EcoPontica and the SOR with appropriate conditions and mitigation</p>	No further action is recommended.

European Best Practice Guidelines for Wind Energy Development	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
		measures which are in the process of being implemented.	
<b>Effects on the local economy</b>	<ul style="list-style-type: none"> <li>The environmental statement may include an estimate of the number of temporary and permanent jobs created and the value of the contracts available locally</li> </ul>	The EIA Report has considered the potential impact of the proposed development on the existing environment, community and socio-economic conditions. The EIA Report states that there will be positive impacts on the local economy through the creation of jobs and the indirect impact from increased visitors spending in the area.	Where possible the local workforce should be used for non-specialist tasks. Vocational training / education should be undertaken where practicable during construction.
<b>Global environmental effects</b>	<ul style="list-style-type: none"> <li>The environmental statement should include estimates of the amount of electricity the wind energy project will produce and the quantity of polluting emissions that would be produced from a conventional power station producing the equivalent power.</li> </ul>	<p>The wind farm is expected to have an annual generation of 87,000 KWh.</p> <p>No comparative assessment has been done against the emissions from a conventional power station.</p> <p>Energy production from coal creates:</p> <ul style="list-style-type: none"> <li>- 700 ton CO<sub>2</sub>/GWh</li> <li>- 3 ton SO<sub>2</sub>/GWh</li> <li>- 2.6 ton Nox/GWh)</li> </ul>	
<b>Tourism and recreational effects</b>	<ul style="list-style-type: none"> <li>Public rights of way within the site should be identified.</li> <li>Visitor facilities, if appropriate, should be discussed with the local authority and relevant consultees</li> <li>Existing nearby tourist and</li> </ul>	<p>Areas around the wind farm are accessible by local residents for continued agricultural use. Access roads through the wind farm are available for use by local residents.</p> <p>There are no recreational areas at the site or nearby.</p>	No further action is recommended.

European Best Practice Guidelines for Wind Energy Development	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	recreational facilities should be identified		
<b>Decommissioning</b>	<ul style="list-style-type: none"> <li>The assessment should cover decommissioning of the wind energy project.</li> <li>Consideration should be given to restoration measures including the removal of above ground equipment, landscaping the foundations and whether tracks or roads will re-seed naturally or require additional treatment</li> </ul>	<p>Section 2.2 of the EIA Report states that the wind turbines will be easily dismantled and removed because the construction is modular. Many of the resulting materials (such as steel, aluminium, lead, copper etc.) can be reused or recycled.</p> <p>A site restoration plan will be implemented during decommissioning to ensure that suitable control measures are implemented to avoid or minimise environmental impacts (such as noise, dust and potential spillage of oils).</p>	A decommissioning plan should be prepared.
<b>5. Construction</b>			
<b>5.3 Environmental Considerations</b>			
	<ul style="list-style-type: none"> <li>Areas of construction work on-site should be delineated in consultation with the local planning authority and measures taken to avoid unnecessary impacts, such as vehicle use, on areas outside the defined working boundary</li> </ul>	The environmental authorisation has been obtained and the wind farm is operational.	No further action is recommended
	<ul style="list-style-type: none"> <li>If the environmental assessment has identified areas of ecological or archaeological importance a record of pre-construction</li> </ul>	<p>The environmental authorisation has been obtained and the wind farm is operational.</p> <p>Ecological monitoring was undertaken at the Sarichioi wind farm during the construction</p>	Further ecological monitoring is required as detailed in the Supplementary Information Report.

European Best Practice Guidelines for Wind Energy Development	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<p>site conditions should be made. Such areas should be notified to the contractors to avoid damage.</p>	<p>works (from April to September and October to December 2011). On-going ecological monitoring is required.</p> <p>No areas of archaeological importance have been identified on the site.</p>	
	<ul style="list-style-type: none"> <li>Due regard should be given to the safety of those using public rights of way.</li> </ul>	<p>There are no public rights of way at the site or nearby.</p> <p>Access roads through the wind farm are available for use by local residents.</p>	No further action is recommended
	<ul style="list-style-type: none"> <li>Developer should ensure that on-site and off-site works are undertaken with minimal disruption to the local residents.</li> <li>Any information board should be displayed in a publicly accessible location at all time giving the name and number of the developer's representative or other contact.</li> <li>Consideration should be given to the formation of a community liaison group.</li> <li>Developer should establish a programme of emergency procedures for 24 hour support in case of</li> </ul>	<p>A Stakeholder Engagement Plan has been prepared which includes a point of contact for member of the public. This person will be responsible for discussing problems with any representative of the community interested in raising concerns and the City Hall will have the name of this person and the contact details.</p>	No further action is recommended

European Best Practice Guidelines for Wind Energy Development	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	unforeseen problems. These procedures should be registered with the local emergency services and the local planning authority and noted on the site information board.		
<b>6. Operation</b>			
<b>6.2 Environmental Considerations</b>			
	<ul style="list-style-type: none"> <li>Potential issues relate to effects on human activities and site flora and fauna.</li> </ul>	Avifauna monitoring (for birds and bats) is to be undertaken during operation in accordance with the Environmental and Social Action Plan.	An Environmental and Social Action Plan has been prepared and will be implemented.
	<ul style="list-style-type: none"> <li>The owner/operator should have a formal procedure for recording and dealing with complaints from the public.</li> <li>The owner/operator should investigate any complaints and work with the authorities to address issues raised.</li> </ul>	A Stakeholder Engagement Plan has been prepared which includes a point of contact for member of the public. This person will be responsible for discussing problems with any representative of the community interested in raising concerns and the City Hall will have the name of this person and the contact details.	The Stakeholder Engagement Plan has been prepared and will be made available to the general public.
	<ul style="list-style-type: none"> <li>Wildlife disturbance is most likely to become apparent as a result of specific studies carried out by the owner/operator.</li> <li>These studies would normally come about from undertakings made during the planning process</li> </ul>	<p>Based on a review of the EIA Report it is not clear whether any site specific ecological surveys have been undertaken, so the significance of disturbance effects (and what needs to be done to mitigate against them) cannot be assessed.</p> <p>Avifauna monitoring is to be undertaken during the operational phase in accordance with the</p>	The Environmental and Social Action Plan has been prepared and will be implemented.

European Best Practice Guidelines for Wind Energy Development	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<p>although there may be instances where concerns are raised by individuals after the facility has been built leading to such studies.</p> <ul style="list-style-type: none"> <li>If it should come apparent that there is a significant ecological impact the owner/operator should co-operate with individuals concerned and the statutory and voluntary conservation bodies to determine the nature of the problem and to work towards a solution.</li> </ul>	<p>requirements of the Environmental Agreement and other permits (including those issued by the SOR and EcoPontica and the Danube Delta Biosphere Reserve Authority (ABRDD)).</p> <p>In addition, an Environmental and Social Action Plan has been prepared for the wind farm.</p>	
<b>Dialogue and consultation</b>	<ul style="list-style-type: none"> <li>An owner/operator has a responsibility as a member of the community to allow local individuals to raise any concerns they may have about operation of the project.</li> <li>The owner/operator should have a local representative to whom individuals can voice their concerns.</li> <li>The owner/operator should make themselves easily accessible to local people within the community through</li> </ul>	<p>A Stakeholder Engagement Plan will be prepared which will include a point of contact for member of the public. This person will be responsible for discussing problems with any representative of the community interested in raising concerns and the City Hall will have the name of this person and the contact details.</p>	<p>The Stakeholder Engagement Plan has been prepared and will be made available to the general public.</p>



European Best Practice Guidelines for Wind Energy Development	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	a variety of methods. <ul style="list-style-type: none"> <li>Following commissioning an owner/operator should operate a good neighbour policy and encourage a greater understanding of wind energy within the local communities.</li> </ul>		
<b>7. Decommissioning</b>			
<b>No specific environmental considerations</b>			

Source documents: IFC Environmental, Health and Safety (EHS) Guidelines Wind Energy (April 30, 2007)  
 IFC General Environmental, Health and Safety (EHS) General Guidelines (April 30, 2007)  
 European Best Practice Guidelines for Wind Energy Development (2002)

**Table 2 – IFC EHS Guidelines for Wind Energy and IFC EHS General Guidelines Gap Analysis – Vutcani**

**Table 2a) IFC EHS Guidelines for Wind Energy**

IFC EHS Guidelines on Wind Energy	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
<b>1.0 Industry-Specific Impacts and Management</b>			
<b>1.1 Environment</b>			
<b>Visual Impacts</b>	<p>When considering location:</p> <ul style="list-style-type: none"> <li>• Consultation with local community to incorporate community values into design.</li> <li>• Consider landscape and visual impacts from all relevant viewing angles.</li> </ul> <p>When considering design:</p> <ul style="list-style-type: none"> <li>• Minimise presence of ancillary structures.</li> <li>• Implement erosion measures such as native only planting.</li> <li>• Maintain uniform size and design of turbines.</li> <li>• Uniform sky colour turbines, while observing marine and navigational marking regulations.</li> <li>• Avoid lettering, insignia, graphics or advertising on turbines.</li> </ul>	<p>The site was selected based on a series of wind surveys and through discussions with the Environmental Protection Agency (EPA) in Vaslui.</p> <p>Section 4.4 of the EIA Report addresses the potential impacts of the proposed development on the existing landscape. The site is not located within a sensitive landscape designated area. The EIA reports that the wind turbines will have a positive impact on the landscape.</p> <p>In the EIA Report the visual impacts of the proposed development have been identified as positive. Therefore the EIA Report does not consider measures to minimise visual impacts.</p>	Further consideration of visual and landscape impacts of the wind turbines is provided in the Supplementary Information Report.
<b>Noise</b>	<ul style="list-style-type: none"> <li>• Turbine design standards should limit noise generation</li> </ul>	The turbines incorporate a variable rotor speed and blade angle function to ensure optimum	Noise monitoring should be undertaken to demonstrate compliance with EHS

IFC EHS Guidelines on Wind Energy	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<p>though measures such as limiting blade speed in higher winds to limit noise generation.</p> <ul style="list-style-type: none"> <li>• Siting of wind farm should avoid locations close to sensitive receptors such as residences, hospitals and schools.</li> <li>• Adherence to national and international acoustic design standards for wind turbines (e.g. International Energy Agency, International Electrotechnical Commission [IEC], and the American National Standards Institute).</li> </ul>	<p>RPM and pitch angle, thus minimising extraneous noise generated by off-angle prevailing wind turbulence.</p> <p>The wind turbines are located more than 500m away from noise-sensitive receptors</p> <p>Compliance with Romanian, IFC and World Health Organisation requirements is anticipated. Low noise impact is predicted.</p>	Guidelines.
<b>Species mortality and Injury and Disturbance</b>	<ul style="list-style-type: none"> <li>• Site selection should account for known migratory pathways or areas where birds and bats are highly concentrated</li> <li>• Turbine arrays should be configured to avoid potential avian mortality</li> <li>• Appropriate storm water management measures to avoid creating attractions such as small ponds.</li> </ul>	<p>The EIA Report includes consideration of impacts on birds and the wind farm site has been selected where possible to avoid impacts on nearby protected areas. Consultation has been held with the relevant authorities and the required permits have been obtained from the organisations which are the custodians of these protected areas.</p> <p>The wind turbines are located approximately 500m apart.</p>	Mitigation and monitoring measures relating to birds and bats are detailed in the Supplementary Information Report.
<b>Shadow Flicker and Blade Glint</b>	<ul style="list-style-type: none"> <li>• Site and orientation of wind turbines should avoid residences located within the</li> </ul>	<p>Since the nearest residential property is more than 500m away no impacts associated with possible shadowing effects are anticipated at</p>	No further action is recommended

IFC EHS Guidelines on Wind Energy	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<p>narrow bands, general southwest and southeast of the turbines, where flicker has a high frequency</p> <ul style="list-style-type: none"> <li>Paint used on turbines should have non-reflective coating to avoid reflections from towers.</li> </ul>	<p>nearby dwellings.</p> <p>Shadow simulations are provided in Section 4.5 of the EIA Report.</p> <p>No information is provided in the EIA on the amount of calculated hours of shadow at dwellings. As a guideline 8 hours per day is considered a standard guideline value in Sweden and Germany.</p> <p>Blade glint is prevented through the use of non-reflective paint on the selected Vestas turbines.</p>	
<b>Habitat Alteration -</b>	<ul style="list-style-type: none"> <li>Construction of access roads in remote locations may result in additional risks for the alteration of terrestrial habitats. EHS Guidelines for Roads provides more information on this.</li> </ul>	<p>Local roads have been upgraded and new access roads have been created within the wind farm. The extent of habitat affected by these roads and also the footprints of the turbines and the substation is limited. The remainder of the site has been returned to its previous agricultural use.</p>	No further action is recommended
<b>Water Quality</b>	<ul style="list-style-type: none"> <li>Measures to control erosion and sedimentation are discussed in the General EHS Guidelines and in the EHS Guidelines for Roads.</li> </ul>	<p>There are no significant water courses/bodies on or near the site. The Site is located in an exposed area and there is the risk of soil erosion. It is understood that areas of disturbed soil during construction have been re-vegetated. Section 4.3 of the EIA Report sets out mitigation measures to prevent water pollution from potential pollution events during the construction works.</p> <p>No soil erosion or water system management</p>	No further action is recommended.

IFC EHS Guidelines on Wind Energy	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
		approaches are considered to be required at the site.	
<b>1.2 Occupational Health and Safety</b>			
<b>Working at Heights</b>	<p>Contractor should comply with the following guidelines:</p> <ul style="list-style-type: none"> <li>• Prior to undertaking work, test structure for integrity</li> <li>• Implementation of a fall protection program that includes training in climbing techniques and use of fall protection measures; inspection, maintenance, and replacement of fall protection equipment; and rescue of fall-arrested workers;</li> <li>• Establish a criteria for use of 100% fall protection (typically when working over 2m above the working surface but sometimes extended to 7m, depending on the activity). The fall-protection system should be appropriate for the tower structure and movements to be undertaken including ascent descent, and moving from point to point;</li> <li>• Installation of fixtures on tower components to facilitate the use of fall protection</li> </ul>	<p>According to the provisions of the Law 319/2006 and Governmental Decision (GD) 955/2010 a specific health and safety instruction for working at height has to be prepared.</p> <p>According with the provisions of the Law 319/2006 and GD 1425/2006 amended by GD 955/2010 an internal Standards book has to be prepared, stating the allocation of the personal protective equipment (PPE) which includes the PPE for working at height.</p> <p>A Health and Safety Plan will be implemented during operation of the wind farm. The Health and Safety Plan will cover all relevant aspects to ensure compliance with health and safety legislation and international good practice relating to occupational and community health and safety and will include the following aspects:</p> <ul style="list-style-type: none"> <li>• Working at heights</li> <li>• Electrical safety</li> <li>• Emergency and evacuation procedures (e.g. in the event of a fire)</li> <li>• General health and safety measures</li> <li>• Access and security.</li> </ul> <p>The exact operational provisions and</p>	

IFC EHS Guidelines on Wind Energy	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<p>systems;</p> <ul style="list-style-type: none"> <li>• Provide workers with an adequate working position device system. Connectors on positioning systems must be compatible with tower components to which they are attached;</li> <li>• Ensure that hoisting equipment is properly rated and maintained and that hoist operators are properly trained;</li> <li>• Safety belts should not be less than 15.8mm(5/8 inch) two in one nylon or material of equivalent strength. Rope safety belts should be replaced before signs of aging or fraying of fibres becomes evident</li> <li>• When operating power tools at height, workers should use a second (backup) safety strap;</li> <li>• Signs or other obstructions should be removed from poles or structures prior to undertaking work;</li> <li>• An approved tool bag should be used for raising or</li> </ul>	<p>procedures are not available at this stage and will be set at the time the client will be tendering for the operational contract.</p> <p>EDPR's "General Contracting Conditions" are mandatory and are attached to every contract to be signed by Contractors. These include provisions relating to the occupational health and safety and employment and social obligations.</p> <p>A maintenance contract has been awarded to Vestas for maintenance of the wind turbines.</p>	

IFC EHS Guidelines on Wind Energy	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<p>lowering tools or materials to workers on elevated structures; and</p> <ul style="list-style-type: none"> <li>• Avoid conducting tower installation or maintenance work during poor weather conditions and especially where there is a risk of lightning strikes.</li> </ul>		
<b>1.3 Community health and Safety</b>			
<b>Aircraft Safety</b>	<ul style="list-style-type: none"> <li>• Consult with air regulatory authorities before installation, in accordance with air traffic safety regulations</li> <li>• When feasible, avoid siting wind farms close to airports and within known flight path envelopes.</li> <li>• Use anti-collision lighting and marking systems on towers and blades.</li> </ul>	<p>The project has been implemented according to the requirements of EN ISO 17050-1:2004 and Directive 2006/42/CE</p> <p>Beacon lights have been installed in accordance with ICAO and FAA standards.</p> <p>A permit for the wind farm has been issued by the Romanian Civil Aviation Authority (Authorization 16773/861 from 11.08.2009).</p>	No further actions recommended.
<b>Blade / Ice Throw</b>	<p>Blade throw:</p> <ul style="list-style-type: none"> <li>• Establish safety setbacks, and design / site wind farms such that no building or populated areas lie within the possible trajectory range of the blade, unlikely to exceed 300m although range and can vary with</li> </ul>	The project has been implemented according with EN ISO 17050-1:2004 and Directive 2006/42/CE.	

IFC EHS Guidelines on Wind Energy	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<p>size/shape/weight/speed of the rotor blades/height of the turbine.</p> <ul style="list-style-type: none"> <li>• Equip wind turbines with vibration sensors that can detect and react to any imbalance in the rotor blades and shutdown if necessary.</li> <li>• Regularly maintain the wind turbine;</li> <li>• Use public warning signs to alert the public to risk.</li> </ul> <p>Ice throw:</p> <ul style="list-style-type: none"> <li>• Curtail wind turbine operations during periods of ice accretion.</li> <li>• Post signs at least 150 metres from the wind turbine in all directions.</li> <li>• Equip turbines with heaters and ice sensors.</li> <li>• Use cold-resistant steel for the turbine tower.</li> <li>• Use synthetic lubricants rated for cold temperatures.</li> <li>• Use black fluoroethane-coated blades.</li> <li>• Provide full-surface blade heating, if available, or otherwise use leading-edge heaters at least 0.3m wide.</li> </ul>		



IFC EHS Guidelines on Wind Energy	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
<b>Electromagnetic Interference</b>	<p>Aviation Radar:</p> <ul style="list-style-type: none"> <li>Consider wind energy equipment designs that minimise radar interference, including the shape of the turbine tower, the shape and materials of the nacelle, and use of radar-absorbent surface treatments (e.g. Blades made of glass-reinforced epoxy or polyester) which should not generate electrical disturbance.</li> <li>Consider design options, including geometric layout of turbines and changes to air traffic routes.</li> <li>Consider radar design alterations including relocation of the affected radar, radar blanking of the affected area, or use of alternative radar systems to cover the affected area.</li> </ul> <p>Telecommunication Systems</p> <ul style="list-style-type: none"> <li>Modify the position of wind turbines to avoid direct physical interference of point-to-point communication systems.</li> <li>Install a directional antenna</li> </ul>	<p>The project has been implemented in accordance with EN ISO 17050-1:2004 and Directive 2006/42/CE.</p> <p>Health and safety warning signs are placed at the wind farm entrance and on the access doors of each turbine.</p>	<p>No further action is recommended.</p>

IFC EHS Guidelines on Wind Energy	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<ul style="list-style-type: none"> <li>• Modify the existing aerial</li> <li>• Install an amplifier to boost the system</li> </ul> <p>Television:</p> <ul style="list-style-type: none"> <li>• Site the turbine away from the line-of-site of the broadcast transmitter.</li> <li>• Use non-metallic turbine blades.</li> <li>• If interference is detected during operation: <ul style="list-style-type: none"> <li>- install higher quality or directional antenna</li> <li>- Direct the antenna toward an alternative broadcast transmitter</li> <li>- Install an amplifier</li> <li>- Relocate the antenna</li> <li>- If a wide area is affected, consider the construction of a new repeater station.</li> </ul> </li> </ul> <p>Public Access</p> <ul style="list-style-type: none"> <li>• Use gates on access roads</li> <li>• Fence wind farm site, or individual turbines, to prohibit public access close to the turbine.</li> <li>• Prevent access to turbine tower ladders</li> <li>• Post information boards about public safety hazards and</li> </ul>		

IFC EHS Guidelines on Wind Energy	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	emergency contact information.		
<b>2.0 Performance Indicators and Monitoring</b>			
<b>2.1 Environment</b>			
<b>Emissions and Effluent Guidelines</b>	<ul style="list-style-type: none"> <li>Air emissions, wastewater discharges, and solid wastes related to construction and decommissioning activities are discussed in the General EHS Guidelines.</li> </ul>	<p>The wind farm will not generate process emissions and effluents during operation.</p> <p>Toilet and kitchen facilities are provided within the transformer station.</p> <p>The EIA report specifies the sources of pollutants during construction: soil sources (due to the specific construction activities) – excavations, backfilling, infrastructure. It considers the potential impact to soil from leakages of lubricants and oils. This is for both construction and operation. Measures to protect the ground from spillages and hazardous substances are provided within this section.</p> <p>Air pollution– during operation the wind farm is not predicted to generate emissions to air.</p> <p>The EIA considered the potential impacts on air quality during construction and recommended measures to limit pollution relating to dust. Any construction materials would have been transported under conditions that ensured dust pollution was minimised.</p> <p>Section 3 of the EIA Report provides an</p>	<p>A waste management plan should be prepared. The plan should identify methods to reduce waste generation and re-use and recycle wastes in preference to disposal.</p>

IFC EHS Guidelines on Wind Energy	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
		<p>overview of waste management (the operation of the scheme will not produce waste). The CEMP used during construction considered waste generation and aimed to separate waste into streams to maximise recycling / reuse to minimise waste sent to landfill.</p> <p>There will be no connection to the site for water supply or sewerage.</p> <p>During construction and operation, waste water will be collected in special containers and transported off-site for disposal.</p> <p>No specific monitoring is recommended for the operational phase within the EIA Report.</p>	
<b>Noise Guidelines</b>	<ul style="list-style-type: none"> <li>Impacts should not exceed those laid out in the General EHS Guidelines</li> </ul>	The likelihood of compliance with the EHS Guidelines for noise is high. Low noise impact is predicted.	Noise monitoring should be undertaken to demonstrate compliance with EHS Guidelines.
<b>Environmental Monitoring</b>	<ul style="list-style-type: none"> <li>Environmental monitoring programmes should be implemented to address all activities that have been identified to have potentially significant impacts on the environment, during normal and upset conditions. These monitoring activities should be based on direct or indirect indicators of emissions, effluents, and resource use</li> </ul>	<p>The EIA Report states that continuous surveillance of the perimeter of the wind farm will be undertaken to ensure any incidents that might influence population, fauna or flora are identified and reported immediately, and to take corrective and preventative measures.</p> <p>The EIA Report does not suggest any species specific monitoring but it is recommended that post construction monitoring is carried out for birds and bats, involving both 'activity surveys' and carcass searching. Best practice guidance</p>	<p>Monitoring will be undertaken during the operation of the wind farm to ensure that the Optispeed system is adequately calibrated and maintained in order to limit noise levels through adjustments to the rotation speed of the turbines.</p> <p>An Independent Ornithological Expert (IOE) is to be appointed by EDPR. The IOE will have responsibility for bird and bat monitoring and surveys and for the implementation of appropriate mitigation</p>

IFC EHS Guidelines on Wind Energy	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<p>applicable to the particular project.</p> <ul style="list-style-type: none"> <li>Monitoring of bird and bat injury and mortality. This includes dead bird searches.</li> <li>All monitoring should be carried out by qualified individuals and equipment should be properly maintained and calibrated</li> <li>Monitoring data should be analysed and reviewed at regular intervals</li> <li>Additional guidance on applicable sampling and analytical methods for emissions and effluents is provided in the General EHS Guidelines</li> </ul>	<p>(e.g. the Natural England publication, TIN069) in terms of birds stipulates that post-construction monitoring should be carried out.</p>	<p>measures as required.</p> <p>A Collision Risk Assessment is to be completed within two years of the wind farm becoming operational.</p> <p>Development and implementation by the IOE of a detailed shut down procedure for the wind farm in accordance with EBRD and IFC standards. The IOE will have the authority to implement appropriate mitigation measures based on an agreed protocol, including reducing the speed of the turbines or, potentially, for the turbines to be temporarily turned off should a migrant flock be observed to be approaching.</p> <p>Monitoring should be undertaken for 1 year and completed in accordance with the conditions of the various environmental permits and authorisations. The monitoring results should be sent to the appropriate authorities and will inform future monitoring and survey techniques.</p> <p>Biodiversity monitoring requirements are described in the Supplementary Information Report.</p>
<b>2.2 Occupational Health and Safety</b>			
<b>Occupational Health</b>	<ul style="list-style-type: none"> <li>Health and Safety</li> </ul>	According to the provisions of the Law 319/2006	No further action is recommended

IFC EHS Guidelines on Wind Energy	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
<b>and Safety Guidelines</b>	<p>performance should be evaluated against internationally published guidelines such as:</p> <ul style="list-style-type: none"> <li>- Threshold Limit Value (TLV<sup>®</sup>)</li> <li>- Biological Exposure Indices (BIEs<sup>®</sup>)</li> <li>- American Conference of Governmental Industrial Hygienists (ACGIH)</li> <li>- Pocket Guide to Chemical Hazards published by the United States National Institute for Occupational Health and Safety (NIOSH)</li> <li>- Permissible Exposure Limits (PELs) published by the Occupational Safety and Health Administration of the United States (OSHA)</li> <li>- Indicative Occupational Exposure Limit Values published by European Union member states,</li> <li>- OR other similar sources</li> </ul>	<p>and GD 1425/2006 amended by GD 955/2010 a Health and Safety Prevention and Protection Plan must be prepared.</p> <p>EDPR is working towards OHSAS 18001:2008 accreditation, according to which a yearly management plan for H&amp;S has to be prepared.</p> <p>Health and safety and Fire intervention contracts have been established with SC EUROFIN CONSULT SRL Bucuresti (no 189/14.01.2010, respectively nr. 273Bis from 01.07.2011)</p> <p>For the wind farm the ISO 14001 certification procedure started in January 2012 and an internal audit was carried out on 19th June. The certification audit will be in September 2012.</p>	
<b>Accident and Fatality Rates</b>	<ul style="list-style-type: none"> <li>• Projects should try to reduce the number of accidents among project workers</li> </ul>	<p>According to the provisions of the Law 319/2006 and GD 1425/2006 amended by GD 955/2010 all activities within the wind farm require specific</p>	<p>OHSAS 18001:2008 standard is to be implemented and certified, according to which a yearly monitoring plan for H&amp;S</p>

IFC EHS Guidelines on Wind Energy	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<p>(whether directly employed or subcontracted) to a rate of zero.</p> <ul style="list-style-type: none"> <li>Facility rates may be benchmarked against the performance of facilities in this sector in developed countries through consultation with published sources (e.g. US Bureau of Labour Statistics and UK Health and Safety Executive)</li> </ul>	<p>H&amp;S instructions to be prepared.</p> <p>A Health and Safety Plan will be implemented during operation of the wind farm. The Health and Safety Plan will cover all relevant aspects to ensure compliance with health and safety legislation and international good practice relating to occupational and community health and safety and will include the following aspects:</p> <ul style="list-style-type: none"> <li>Working at heights</li> <li>Electrical safety</li> <li>Emergency and evacuation procedures (e.g. in the event of a fire)</li> <li>General health and safety measures</li> <li>Access and security.</li> </ul> <p>The exact operational provisions and procedures are not available at this stage and will be set at the time the client will be tendering for the operational contract.</p>	<p>has to be prepared (this includes inspections plan, trainings, air quality measurements etc.)</p>
<b>Occupational Health and Safety Monitoring</b>	<ul style="list-style-type: none"> <li>Monitoring should be designed and implemented by accredited professionals as part of a health and safety monitoring program.</li> <li>Additional Guidance on health and Safety Guidance is provided in the General EHS Guidelines.</li> </ul>	<p>A Health and Safety Plan will be implemented during operation of the wind farm. The Health and Safety Plan will cover all relevant aspects to ensure compliance with health and safety legislation and international good practice relating to occupational and community health and safety and will include the following aspects:</p> <ul style="list-style-type: none"> <li>Working at heights</li> <li>Electrical safety</li> </ul>	<p>OHSAS 18001:2008 standard is to be implemented and certified, according to which a yearly monitoring plan for H&amp;S has to be prepared (this includes inspections plan, trainings, air quality measurements etc.)</p>

IFC EHS Guidelines on Wind Energy	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
		<ul style="list-style-type: none"> <li>• Emergency and evacuation procedures (e.g. in the event of a fire)</li> <li>• General health and safety measures</li> <li>• Access and security.</li> </ul> <p>The exact operational provisions and procedures are not available at this stage and will be set at the time the client will be tendering for the operational contract.</p>	



**Table 2b) IFC EHS General Guidelines**

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
<b>1.0 Environmental</b>			
<b>1.1 Air Emissions and Ambient Air Quality</b>			
<b>General Approach</b>	<ul style="list-style-type: none"> <li>Impacts should be estimated through qualitative or quantitative assessment by baseline air quality assessments and atmospheric dispersion models.</li> <li>Local atmospheric, climatic and air quality data should be applied when modelling dispersion.</li> <li>The dispersion model applied should be internationally recognised or comparable. Model selection is dependent on the complexity and geo-morphology of the project site.</li> </ul>	<p>Due to the nature of the project, there will be no atmospheric emissions during the operational period of the wind farm.</p> <p>Section 4.13 of the EIA Report considers the potential impacts on air quality during the construction works; measures are suggested to limit pollution by dust.</p> <p>No quantitative information on existing air quality conditions at the site or in the local area, or information on the approach used to determine the air quality impacts is provided within the EIA Report. It has therefore not been possible to assess the methodology which has been followed in respect of air quality impacts. However, given the nature of the Project and since the nearest residential receptor is more than 500m away, air quality impacts are not considered to be a significant concern.</p> <p>It understood that any impact occurring construction would have been minimal and mitigation measures according to environmental permits would have been</p>	No further action is recommended.

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
<b>Projects Located in Degraded Airsheds or Ecologically Sensitive Areas</b>	<ul style="list-style-type: none"> <li>Airsheds are defined as poor quality if national air quality standards or WHO Air Quality Guidelines are exceeded.</li> <li>Projects in poor quality airsheds or ecologically sensitive area should ensure that any increase in pollution levels is as small as feasible.</li> <li>Suitable mitigation measures should be implemented e.g. pollution control measures, or offset activities at installations controlled by the project sponsors or within the same airshed.</li> </ul>	<p>implemented.</p> <p>The EIA Report does not refer to the site being within an Airshed and therefore it is assumed that air quality is currently within the WHO air quality guidelines.</p> <p>The wind farm is not located within an ecologically sensitive area. Construction followed mitigation measures and measures required under environmental permits and so any dust emissions would have been minimal. The turbine is not expected to have an impact during operation.</p> <p>Given the nature of the Project and since the nearest residential receptor is more than 500m away, air quality impacts are not considered to be a significant concern.</p>	<p>Biodiversity monitoring should be implemented (including surveys for birds and bats) in accordance with permitting requirements.</p> <p>Details of the monitoring and mitigation requirements are provided in the Supplementary Information Report.</p>
<b>Point Sources</b>	<ul style="list-style-type: none"> <li>Emissions from point sources should be avoided and controlled according to good international industry practice applicable to the relevant industry sector, depending on ambient conditions, through the combined application of process modifications and emission controls.</li> </ul>	There are no point sources within the development.	No further action is recommended.
<b>Stack Height</b>	<ul style="list-style-type: none"> <li>The stack height for all point sources of emissions, whether 'significant' or not, should be designed according to GIIP to avoid excessive groundlevel concentrations due to downwash, wakes</li> </ul>	There are no point sources within the development.	No further action is recommended.

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<p>and eddy effects and to ensure reasonable diffusion to minimise impacts.</p> <ul style="list-style-type: none"> <li>Non-significant sources of emissions, including small combustion sources, should also use GIIP in stack design.</li> </ul>		
<b>Small Combustion Facilities Emissions Guidelines</b>	<ul style="list-style-type: none"> <li>These guidelines relate to facilities with a total, rated heat input capacity of between 3 Megawatt thermal (MWth) and 50 MWth. The emissions guidelines are applicable to installations operating more than 500 hours per year and with an annual capacity utilisation of more than 30%.</li> <li>Lower emission values may apply if the proposed facility is located in an ecologically sensitive airshed or airshed with poor air quality and in order to address potential cumulative impacts from installation of more than one combustion plant.</li> <li>Emission guidelines are provided in Table 1.1.2, page 7 of the EHS General Guidelines.</li> </ul>	Not applicable to the project.	No further action is recommended.
<b>Fugitive Sources</b>	<ul style="list-style-type: none"> <li>Refers to emissions that are distributed spatially over a wide area and not confined to a discharge point. Examples include volatile organic compounds and particulate matter.</li> <li>Projects with potentially significant fugitive sources of emissions should establish the need for ambient air quality assessment and monitoring processes.</li> </ul>	The EIA Report specifies the sources of potential pollutants during the construction phase: soil sources (due to the specific construction activities) – excavations, backfilling, infrastructure. All measures suggested to mitigate these are in accordance with environmental permits and were carried out during this phase.	No further action is recommended.

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<ul style="list-style-type: none"> <li>• Open burning of solid wastes is not considered good practice and should be avoided.</li> <li>• Prevention and control techniques for VOC emissions associated with equipment leaks and handling of chemicals are provided.</li> <li>• Prevention and control measures are recommended to control sources of dust emissions.</li> <li>• Ozone depleting substances – no new systems or processes should be installed using CFCs, halons, 1,1,1-trichloroethane, carbon tetrachloride, methyl bromide or HBFCs. HCFCs should only be considered as interim alternatives as determined by the host country commitments and regulations.</li> </ul>	<p>Any atmospheric emissions, such as dust, during construction are expected to have been small-scale, localised and temporary</p>	
<b>Mobile Land-Based Sources</b>	<ul style="list-style-type: none"> <li>• Emissions from on-road and off-road vehicles should comply with national or regional programs.</li> <li>• In the absence of these certain approaches should be considered, e.g. fleet owners / operator should implement the manufacturer recommended maintenance programs, driver training, fleet management to reduce potential impacts.</li> </ul>	<p>The EIA Report considers emissions from plant associated with the construction of the wind farm.</p> <p>A Construction Environmental Management Plan (CEMP) was prepared to control emissions during construction activities, including emissions from construction equipment and dust from construction works.</p> <p>No mobile sources of emissions are anticipated during operation of the wind</p>	<p>No further action is recommended.</p>

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
<b>Greenhouse Gases (GHG)</b>	<ul style="list-style-type: none"> <li>GHGs may be generated from direct emissions within the project boundary and indirect emissions associated with off-site production of power used by the project.</li> <li>Recommendations for reduction and control of GHG include: <ul style="list-style-type: none"> <li>- Carbon financing</li> <li>- Enhancement of energy efficiency</li> <li>- Protection and enhancement of sinks and reservoirs of GHG</li> <li>- Promotion, development and increased use of renewable forms of energy</li> <li>- Carbon capture and storage technologies</li> </ul> </li> </ul>	<p>farm.</p> <p>Given the nature of the project it is anticipated that direct and indirect GHG emissions from the project will be minimal.</p> <p>The greenhouse gas savings potential for the wind farm is provided in the Gap Analysis Report.</p>	<p>No further action is recommended.</p>
<b>Monitoring</b>	<ul style="list-style-type: none"> <li>A systematic process is recommended to ensure that data collected are adequate for their intended purpose. The air quality monitoring program should consider the following elements: <ul style="list-style-type: none"> <li>- Monitoring parameters</li> <li>- Baseline calculations</li> <li>- Monitoring type and frequency</li> <li>- Monitoring locations</li> <li>- Sampling and analysis methods – apply national or international methods for sampling collection and analysis</li> </ul> </li> <li>Additional monitoring approaches are recommended for boilers of various sizes, turbines and engines – in relation to</li> </ul>	<p>The EIA Report does not recommend any air quality or dust monitoring.</p> <p>Due to the nature of the project and since the nearest residential property is more than 500m from the perimeter of the site this is not likely to be a significant issue.</p>	<p>No further action is recommended.</p>

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	annual stack emission testing and emission monitoring requirements		
<b>1.2 Energy Conservation</b>			
<b>Applicability and Approach</b>	<ul style="list-style-type: none"> <li>• Applies to facilities or projects that consume energy in process heating and cooling; process and auxiliary systems (such as motors, pumps and fans); compressed air systems and heating, ventilation and air conditioning systems (HVAC); and lighting systems.</li> <li>• Energy management programs should include: identification and regular measurement and reporting or principal energy flows, preparation of mass and energy balance, review of energy performance targets, monitoring of energy flows with performance targets, review of targets.</li> <li>• For any energy-using system a systematic analysis of energy efficiency improvements and cost reduction opportunities should include a hierarchical examination of opportunities to: <ul style="list-style-type: none"> <li>• Demand/load side management by reducing loads on the energy system</li> <li>• Supply side management by e.g. reducing losses in energy distribution, improve energy conversion efficiency, exploit energy purchasing opportunities, use lower-carbon fuels</li> </ul> </li> </ul>	The operation of the wind farm will produce, rather than consume, energy. Therefore this is not considered significant.	No further action is recommended.
<b>Process Heating</b>	<ul style="list-style-type: none"> <li>• Process heating is vital to many</li> </ul>	There are no process heating requirements	No further action is

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<p>manufacturing processes, including heating for fluids, calcining, drying, heat treating, metal heating, melting agglomeration, curing and forming.</p> <ul style="list-style-type: none"> <li>Examination of savings opportunities should be directed by the results of heat and mass balance, e.g. <ul style="list-style-type: none"> <li>heating load reduction – ensure adequate insulation, recover heat, control process temperature and other parameters accurately</li> <li>heat distribution systems – repair distribution system leaks, avoid steam leaks, insulate distribution system vessels and pipework</li> <li>energy conversion system efficiency improvements – regular monitoring of CO, oxygen or CO2 content of flue gases, minimise the number of boilers to meet loads, use flue dampers</li> </ul> </li> </ul>	for the project.	recommended.
<b>Process Cooling</b>	<ul style="list-style-type: none"> <li>Commonly used and cost-effective measures to improve process cooling efficiency include in respect of: <ul style="list-style-type: none"> <li>Load reduction – ensure adequate insulation, control process temperature accurately to avoid overcooling</li> <li>Energy conversion – consider system design, minimising temperature differences, elevating evaporating temperature, reducing condensing</li> </ul> </li> </ul>	There are no process cooling requirements for the project.	No further action is recommended.

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	temperature - Refrigerant compression efficiency - Refrigeration system auxiliaries (e.g. evaporator fans and chilled water pumps)		
<b>Compressed Air Systems</b>	<ul style="list-style-type: none"> <li>In many compressed air systems the energy contained in compressed air delivered to the user is often 10% or less of energy used in air compression. Savings are often possibly through:               <ul style="list-style-type: none"> <li>Load reduction – review air use reduction opportunities</li> <li>Distribution – monitor pressure losses, use adequately sized distribution pipework</li> </ul> </li> </ul>	It is assumed that there are no compressed air systems within the project.	No further action is recommended.
<b>1.3 Wastewater and Ambient Water Quality</b>			
<b>Applicability and Approach</b>	<ul style="list-style-type: none"> <li>Applies to projects that have either direct or indirect discharge of process wastewater, water from utility operations or stormwater to the environment. Also applicable to industrial discharges to sanitary sewers that discharge to the environment without any treatment.</li> <li>Projects with the potential to generate process wastewater, sanitary (domestic) sewage or stormwater should incorporate the necessary precautions to avoid, minimise and control adverse impacts to human health, safety or the environment.</li> <li>Facilities should:               <ul style="list-style-type: none"> <li>Understand the quality, quantity,</li> </ul> </li> </ul>	<p>Section 4.3 of the EIA Report finds that the wind farm will not generate industrial waste water or other substances that lead to pollution of surface waters. The EIA Report also states that construction wastewater will be collected in special containers and transported off-site for disposal.</p> <p>A CEMP was prepared and implemented, this included measures relating to the control of water during construction.</p>	No further action is recommended.



IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<p>frequency and sources of liquid effluents</p> <ul style="list-style-type: none"> <li>- Plan and implement the segregation of liquid effluents to industrial, utility, sanitary and stormwater categories</li> <li>- Identify opportunities to prevent or reduce wastewater pollution</li> <li>- Assess compliance of wastewater discharges with applicable discharge standard or water quality standard</li> <li>- Use water efficiently to reduce the amount of wastewater generation</li> <li>- Process modification</li> <li>- Apply wastewater treatment techniques</li> <li>- Provide appropriate level of wastewater treatment required prior to discharge according to national and local standards, assimilative capacity of the receiving water, use of the receiving water body, presence of sensitive receptors.</li> </ul>		

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
<b>General Liquid Effluent Quality</b>	<ul style="list-style-type: none"> <li>Discharges of process wastewater, sanitary wastewater, wastewater from utility operations or stormwater to surface water should not result in contaminant concentrations in excess of local ambient water quality criteria.</li> <li>Receiving water use and assimilative capacity, taking other sources of discharges to the receiving water into consideration, should also influence the acceptable pollution loadings and effluent discharge quality.</li> <li>When setting project-specific performance levels of wastewater effluent additional considerations include:</li> <li>Process wastewater treatment standards consistent with applicable industry sector EHS Guidelines</li> <li>Compliance with national or local standards for sanitary wastewater discharges</li> <li>Temperature of wastewater prior to discharge does not result in an increase greater than 3oC of ambient temperature at the edge of a scientifically established mixing zone which takes into account ambient water quality, receiving water use and assimilative capacity among other considerations.</li> </ul>	<p>Section 4.1.4 of the EIA Report states that waste water generated during construction and operation will be collected in special containers and transported off-site for disposal.</p> <p>There will be no connection to the site for water supply or sewerage.</p> <p>A CEMP was prepared and implemented, this included measures relating to the control of wastewater during construction.</p>	<p>No further action is recommended.</p>

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<ul style="list-style-type: none"> <li>Discharges of industrial wastewater, sanitary wastewater, wastewater from utility operations or stormwater to sanitary sewer systems should:               <ul style="list-style-type: none"> <li>Meet the pre-treatment and monitoring requirements of the sewer system into which it discharges</li> <li>Not interfere, directly or indirectly, with the operation and maintenance of the collection and treatment systems, or pose a risk to worker health and safety or adversely impact characteristics of residuals from wastewater treatment operations</li> <li>Be discharged into municipal or centralised wastewater treatment systems that have adequate capacity to meet regulatory requirements.</li> </ul> </li> <li>Pre-treatment of wastewater is required to meet regulatory requirements before discharge from the project site if the receiving wastewater treatment system does not have adequate capacity to maintain regulatory compliance.</li> </ul>	<p>Section 4.1.4 of the EIA Report states that waste water generated during construction and operation will be collected in special containers and transported off-site for disposal.</p> <p>There will be no connection to the site for water supply or sewerage.</p> <p>A CEMP was prepared and implemented, this included measures relating to the control of wastewater during construction.</p>	<p>No further action is recommended.</p>

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<ul style="list-style-type: none"> <li>Land application of treated effluent, quality of treated process wastewater, wastewater from utility operations or stormwater discharged on land should be established based on local regulatory requirements.</li> <li>Where land is used as part of the treatment system and the ultimate receptor is surface water, water quality guidelines for surface water discharges specific to the industry sector process should apply.</li> <li>Potential impact on soil, groundwater and surface water, in the context of protection, conservation and long-term sustainability of water and land resources, should be assessed when land is used as part of any wastewater treatment system.</li> </ul>	This is not applicable to the wind farm project.	No further action is recommended.

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<ul style="list-style-type: none"> <li>• Septic systems, should only be used for treatment of sanitary sewage and are unsuitable for industrial wastewater treatment.</li> <li>• Where septic systems are used they should be:               <ul style="list-style-type: none"> <li>- Properly designed and installed in accordance with local regulations</li> <li>- Well maintained to allow effective operation</li> <li>- Installed in areas with sufficient soil percolation for the design wastewater loading rate</li> <li>- Installed in areas of stable soils that are nearly level, well drained and permeable with enough separation between the field drain and groundwater table or other receiving waters</li> </ul> </li> </ul>	This is not applicable to the wind farm project.	No further action is recommended.

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
<b>Wastewater Management</b>	<ul style="list-style-type: none"> <li>Industrial wastewater, includes process wastewater, wastewater from utility operations, runoff from process and material staging areas and miscellaneous activities (including from laboratories, maintenance shops etc.)</li> <li>Process wastewater – choice of treatment is driven by wastewater characteristics. One or more treatment technologies may be required to maintain compliance with regulatory requirements</li> <li>Wastewater from utilities operations – include cooling systems and demineralisation systems. Recommended strategies include               <ul style="list-style-type: none"> <li>- adoption of water conservation opportunities</li> <li>- use of heat recovery methods or other cooling methods to reduce the temperature of heated water prior to discharge to ensure the discharge water temperature does not result in an increase greater than 3oC of ambient temperature at the edge of a scientifically established mixing zone</li> <li>- minimising use of antifouling and corrosion inhibiting chemicals</li> <li>- testing for residual biocides and other pollutants of concern</li> </ul> </li> </ul>	<p>Section 4.1.4 of the EIA Report states that waste water generated during construction and operation will be collected in special containers and transported off-site for disposal.</p> <p>Water requirements for the wind farm will be limited to toilets and kitchen facilities in the substation on-site.</p> <p>Waste water will be collected in a septic tank and emptied by a specialist contractor for off-site disposal.</p> <p>A CEMP was prepared and implemented, this included measures relating to the control of wastewater during construction</p>	<p>No further action is recommended.</p>

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<ul style="list-style-type: none"> <li>Stormwater management, reduce the need for stormwater treatment by for example:               <ul style="list-style-type: none"> <li>- Separate stormwater from process and sanitary wastewater</li> <li>- Prevent surface runoff from process areas or segregate areas from potentially less contaminated runoff</li> <li>- Where water quality criteria allow, stormwater should be managed as a resource</li> <li>- Install and maintain oil water separators and grease traps at refuelling facilities, workshops, fuel storage areas</li> </ul> </li> <li>Dispose of sludge in compliance with local regulatory requirements</li> </ul>	This is not applicable to the wind farm project.	No further action is recommended.

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<ul style="list-style-type: none"> <li>Sanitary wastewater includes effluents from domestic sewage, food service and laundry facilities, laboratories etc.</li> <li>Sanitary wastewater management strategies include:               <ul style="list-style-type: none"> <li>Segregation of wastewater streams to ensure compatibility with selected treatment option</li> <li>Pre-treatment of oil and grease containing effluents</li> <li>Treatment to meet national or local standards for sanitary wastewater discharges to surface water or discharge to a septic system or land</li> <li>Disposal of sludge in compliance with local regulatory requirements</li> </ul> </li> </ul>	Wastewater from operation of the wind farm is limited to toilets and kitchen facilities in the substation on-site will be collected in a septic tank and emptied by a specialist contractor for off-site disposal	No further action is recommended.
	<ul style="list-style-type: none"> <li>Emissions from wastewater treatment operations:               <ul style="list-style-type: none"> <li>Air emissions may include hydrogen sulphide, methane, ozone, VOCs and bioaerosols</li> <li>Odour emissions can be a nuisance to workers and the local community</li> </ul> </li> </ul>	This is not applicable to the wind farm project.	No further action is recommended.
	<ul style="list-style-type: none"> <li>Residuals from wastewater treatment operations – sludge is to be evaluated on a case-by-case basis to establish whether it constitutes a hazard or non-hazardous waste and managed accordingly (see waste management section below)s.</li> </ul>	This is not applicable to the wind farm project.	No further action is recommended.



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	<ul style="list-style-type: none"> <li>Occupational health and safety issues in wastewater treatment operations, include physical, chemical and biological hazards e.g. inhalation of VOCs, trips and falls into tanks, confined spaces, contact with pathogens, hazardous chemicals.</li> </ul>	This is not applicable to the wind farm project.	No further action is recommended.
<b>Monitoring</b>	<ul style="list-style-type: none"> <li>The wastewater and water quality monitoring program should consider the following:               <ul style="list-style-type: none"> <li>Monitoring parameters</li> <li>Monitoring type and frequency</li> <li>Monitoring locations</li> <li>Data quality</li> </ul> </li> </ul>	No wastewater and/or water quality monitoring is required.	No further action is recommended.
<b>1.4 Water Conservation</b>			
<b>Applicability and Approach</b>	<ul style="list-style-type: none"> <li>Water conservation programs should be implemented commensurate with the magnitude and cost of water use and should promote the continuous reduction in water consumption and achieve savings in water costs.</li> <li>Water conservation measures may include:               <ul style="list-style-type: none"> <li>Storm/rainwater harvesting and use</li> <li>Zero discharge design /use of treated wastewater in project design processes</li> <li>Use of localised recirculation systems</li> <li>Use of dry processes</li> <li>Process water system pressure management</li> <li>Project design to have measures for</li> </ul> </li> </ul>	<p>It is understood that bottled water will be provided for drinking purposes and other water required for domestic uses will be supplied by a contractor. An underground tank will be used for the storage of non-potable domestic water.</p> <p>Groundwater is present at a depth of 40m below ground level and will not be affected during operation of the wind farm.</p>	No further action is recommended.

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	adequate water collection, spill control and leakage control system		
<b>Water Monitoring and Management</b>	<ul style="list-style-type: none"> <li>The essential elements of a water management program involve:               <ul style="list-style-type: none"> <li>- Identification, regular measurement and recording of principal flows within a facility</li> <li>- Definition and regular review of performance targets</li> <li>- Regular comparison of water flows with performance targets to identify where action should be taken to reduce water use.</li> </ul> </li> </ul>	As indicated above the water supply requirements of the wind farm will be minimal. Therefore, no water monitoring is required at the site.	No further action is recommended.
<b>Process Water Reuse and Recycling</b>	<ul style="list-style-type: none"> <li>Opportunities for water savings in industrial processes are highly industry-specific. The following should be considered in conjunction with a metering system:               <ul style="list-style-type: none"> <li>- Water reuse e.g. reusing wastewater from one process for another with less exacting water requirements</li> <li>- Flow control optimisation.</li> </ul> </li> </ul>	As indicated above the water supply requirements of the wind farm will be minimal and will be limited to domestic requirements for security personnel based at the site.	No further action is recommended.
<b>Building Facility Operations</b>	<ul style="list-style-type: none"> <li>Savings in sanitary water can be identified as follows:               <ul style="list-style-type: none"> <li>- Set targets for daily water use per employee</li> <li>- Regularly maintain plumbing</li> <li>- Install self-closing taps, automatic shut-off valves, spray nozzles, pressure reducing valves and water conserving fixtures</li> </ul> </li> </ul>	There will be no connection to the site for water supply or sewerage.	No further action is recommended.

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<ul style="list-style-type: none"> <li>- Operate dishwashers and laundries on full loads</li> <li>- Install water-saving equipment in lavatories</li> </ul>		
<b>Cooling Systems</b>	<ul style="list-style-type: none"> <li>• Water conservation opportunities include:               <ul style="list-style-type: none"> <li>- Use of closed circuit cooling systems</li> <li>- Limit condenser or cooling tower blowdown to the minimum required</li> <li>- Use of air cooling rather than evaporative cooling</li> <li>- Use of treated wastewater for cooling towers</li> <li>- Reusing / recycling cooling tower blowdown.</li> </ul> </li> </ul>	The project will not have any cooling systems.	No further action is recommended.
<b>Heating Systems</b>	<ul style="list-style-type: none"> <li>• Heating systems based on the circulation of hot water (which do not consume water) should be closed.</li> <li>• Large quantities of water may be used by steam systems and this can be reduced by:               <ul style="list-style-type: none"> <li>- Repair of steam and condensate leaks</li> <li>- Return of condensate to the boilerhouse and use of heat exchangers rather than direct steam injection</li> <li>- Flash steam recovery</li> <li>- Minimising boiler blowdown</li> <li>- Minimising deaerator heating</li> </ul> </li> </ul>	Facilities will be provided locally for heating and hot water for the welfare facilities on site.	No further action is recommended.
<b>1.5 Hazardous Materials Management</b>			
<b>Applicability and Approach</b>	<ul style="list-style-type: none"> <li>• Apply to projects that use, store or handle any quantity of hazardous materials –</li> </ul>	The only hazardous substances stored on the site are anticipated to be new and	A waste management plan will be implemented and records

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<p>defined as materials that represent a risk to human health, property or the environment due to their physical or chemical characteristics.</p> <ul style="list-style-type: none"> <li>Refer to guidance on Occupational Health and Safety Management (Section 2), Emergency Preparedness and Response (Section 3.7) and on the Transport of Hazardous Materials (Section 3.5).</li> <li>The overall objective is to avoid or, when avoidance is not feasible, minimise uncontrolled releases of hazardous materials or accidents during their production, handling, storage and use. This can be achieved by: <ul style="list-style-type: none"> <li>Establishing hazardous materials management priorities based on hazard analysis of risk operations</li> <li>Where practicable, avoiding or minimising the use of hazardous materials.</li> <li>Preventing uncontrolled releases of hazardous materials to the environment</li> <li>Using engineering controls</li> <li>Implementing management controls to address residual risks.</li> </ul> </li> </ul>	<p>waste oils from maintenance of the equipment. Waste oil will be collected and disposed of in accordance with legal requirements.</p> <p>Waste materials generated as part of the project are likely to be minimal. Waste (including waste oil) generated during routine maintenance activities will be removed from site by the contractor and disposed of in an appropriate manner in accordance with applicable legislation.</p>	<p>maintained.</p>
<b>General Hazardous Materials Management</b>	<ul style="list-style-type: none"> <li>Projects which manufacture, handle, use or store hazardous materials should establish management programs that are commensurate with the potential risks</li> </ul>	<p>As indicated above, hazardous materials will be limited to oils associated with maintenance of the wind turbines and will be managed by the specialist maintenance</p>	<p>No further action is recommended.</p>

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<p>present.</p> <ul style="list-style-type: none"> <li>• The main objectives should be the protection of the workforce and prevention and control of releases and accidents.</li> <li>• Potentially applicable elements of a management program include: <ul style="list-style-type: none"> <li>- Hazard Assessment – establish the level of risk through an on-going assessment process based on types and amounts of hazardous materials present, potential spill and release scenarios, potential for uncontrolled reactions, potential consequences based on the physical-geographical characteristics of the project site.</li> <li>- Management Actions – to be detailed in a Hazardous Materials Management Plan, including release prevention and control planning, essential elements of occupational health and safety management (see Section 2.0), integration with other elements of the facility management systems.</li> <li>- Preventative Measures, such as to prevent hazardous material releases from processes, overfill protection, reaction, fire and explosion prevention</li> <li>- Control Measures, such as secondary containment, storage tank and piping leak detection, controls relating to underground storage tanks</li> </ul> </li> </ul>	<p>contractor.</p>	

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
<b>Management of Major Hazards</b>	<ul style="list-style-type: none"> <li>• Project involving production, handling and storage of hazardous materials at or above threshold limits (established for emergency planning by the US EPA in Protection of Environment) should prepare a Hazardous Materials Risk Management Plan.</li> <li>• The objective of this guidance is the prevention and control of catastrophic releases of toxic, reactive, flammable or explosive chemicals that may result in toxic, fire or explosion hazards.</li> <li>• The Hazardous Materials Risk Management Plan shall contain the following:               <ul style="list-style-type: none"> <li>- Management Actions – including compliance audit, incident investigation, employee participation, contractor control and training</li> <li>- Preventative Measures to ensure that safety-related aspects of the process and equipment are considered, limits implemented and accepted standards and codes are adopted where applicable – including process safety information, operating procedures and other procedures</li> <li>- Emergency Preparedness and Response Plan, including planning co-ordination, emergency equipment, training;</li> <li>- Community Involvement and</li> </ul> </li> </ul>	<p>This is not applicable to this wind farm project.</p>	<p>No further action is recommended.</p>

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	Awareness, including potential for effects to human health or the environment following an incident, safety measures to be adopted, access to information and opportunity to contribute effectively to decisions		
<b>1.6 Waste Management</b>			
<b>Applicability and Approach</b>	<ul style="list-style-type: none"> <li>• Apply to projects that generate, store or handle any quantity of waste (separate EHS guidance is provided for Waste Management Facilities), both hazardous and non-hazardous waste.</li> <li>• Facilities that generate and store wastes should practice the following: <ul style="list-style-type: none"> <li>- Establishing waste management priorities at the outset of activities based on an understanding of potential EHS risks and impacts and considering waste generation and its consequences</li> <li>- Establishing a waste management hierarchy that considers prevention, reduction, reuse, recovery, recycling, removal and finally disposal of wastes</li> <li>- Avoiding or minimising the generation of waste materials as far as practicable</li> <li>- Where waste cannot be avoided but has been minimised, recovering and reusing waste</li> <li>- Where waste cannot be recovered or</li> </ul> </li> </ul>	<p>The EIA Report identifies stages of the project where wastes may be generated, i.e. site preparation, commissioning, operation. Waste may be disposed of at the closest landfill.</p> <p>During operation waste hydraulic oil will be produced. This will be managed and disposed of off-site by the specialist maintenance contractor.</p> <p>When the turbines are decommissioned various materials resulting will be suitable for recycling or disposal.</p> <p>A construction waste management plan was developed. This identified methods to reduce waste generation and re-use and recycle wastes in preference to disposal.</p>	A waste management plan will be implemented and records maintained.

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	reused, treating, destroying and disposing of it in an environmentally sound manner.		
<b>General Waste Management</b>	<ul style="list-style-type: none"> <li>Waste management should be addressed through a Waste Management System that addresses issues linked to waste minimisation, generation, transport, disposal and monitoring.</li> </ul>	The EIA Report provides a general assessment of waste management (the operation of the scheme will result in limited amounts of waste).	A waste management plan will be implemented and records maintained.
	<p>Waste management planning:</p> <ul style="list-style-type: none"> <li>Facilities should characterise their waste according to composition, source, types of waste, generation rates, or according to local regulatory requirements.</li> <li>Effective planning should include:               <ul style="list-style-type: none"> <li>Review of new waste sources during planning, siting and design,</li> <li>Collection of data and information about the process and waste streams,</li> <li>Establishment of priorities based on a risk analysis that takes into account the potential EHS risks and availability of infrastructure to manage the waste in an environmentally sound manner</li> <li>Definition of opportunities for source reduction as well as reuse and recycling</li> <li>Definition of procedures and controls for on-site storage</li> <li>Definition of options, procedures, controls for treatment and final disposal</li> </ul> </li> </ul>	The operation of the scheme will only produce minimal waste (e.g. waste oil) from maintenance activities and small amounts of domestic waste.	A waste management plan will be implemented and records maintained.



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	<p>Waste Prevention:</p> <ul style="list-style-type: none"> <li>Processes should be designed and operated to prevent, or minimise, the quantities of waste generated and hazards associated with the wastes generated in accordance with the following strategy: <ul style="list-style-type: none"> <li>- Substituting raw materials or inputs with less hazardous materials or with those where processing generates lower waste volumes</li> <li>- Applying manufacturing processes that convert materials efficiently, providing higher product output yields</li> <li>- Instituting good housekeeping and operating practices</li> <li>- Instituting procurement measures that recognise opportunities to return usable materials such as containers and which prevents over ordering of materials</li> <li>- Minimising hazardous waste generation by implementing stringent waste segregation to prevent co-mingling of non-hazardous and hazardous waste.</li> </ul> </li> </ul>	<p>The operation of the scheme will only produce minimal waste (e.g. waste oil) from maintenance activities and small amounts of domestic waste.</p> <p>.</p>	<p>A waste management plan will be implemented and records maintained.</p>

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<p>Recycling and Re-use:</p> <ul style="list-style-type: none"> <li>The total amount of waste may be significantly reduced through the implementation of recycling plans, which should consider the following: <ul style="list-style-type: none"> <li>Evaluation of waste production processes and identification of potentially recyclable materials</li> <li>Identification and recycling of products that can be reintroduced into the manufacturing process or activity at the site</li> <li>Investigation of external markets for recycling by other industrial processing operations located in the neighbourhood or region</li> <li>Establishing recycling objectives and formal tracking of waste generation and recycling rates</li> <li>Providing training and incentives to employees in order to meet objectives</li> </ul> </li> </ul>	<p>The operation of the scheme will only produce minimal waste (e.g. waste oil) from maintenance activities.</p>	<p>A waste management plan will be implemented and records maintained.</p>

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<p>Treatment and Disposal:</p> <ul style="list-style-type: none"> <li>• If waste materials are still generated after the implementation of feasible waste prevention, reduction, reuse, recovery and recycling measures, waste materials should be treated and disposed of and all measures should be taken to avoid potential impacts to human health and the environment.</li> <li>• Selected management approaches should be consistent with the characteristics of the waste and local regulations and many include one or more of the following: <ul style="list-style-type: none"> <li>- On-site or off-site biological, chemical or physical treatment of the waste material to render it non-hazardous prior to final disposal</li> <li>- Treatment or disposal at permitted facilities designed to receive the waste, e.g. composting for organic non-hazardous wastes, properly designed, permitted and operated landfills or incinerators, or other methods known to be effective such as bioremediation.</li> </ul> </li> </ul>	<p>The operation of the scheme will only produce minimal waste (e.g. waste oil) from maintenance activities and small amounts of domestic waste.</p>	<p>A waste management plan will be implemented and records maintained.</p>

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
<b>Hazardous Waste Management</b>	<ul style="list-style-type: none"> <li>• Hazardous wastes must always be segregated from non-hazardous wastes</li> <li>• If the generation of hazardous waste cannot be prevented through implementation of the above general waste management practices, its management should focus on the prevention of harm to health, safety and the environment, according to the following principles:               <ul style="list-style-type: none"> <li>- Understanding potential impacts and risks associated with management of the waste during its complete life cycle</li> <li>- Ensuring that contractors handling, treating and disposing of hazardous waste are reputable and licensed appropriately, following GIIP for the waste being handled.</li> <li>- Ensuring compliance with applicable local and international regulations</li> </ul> </li> </ul>	The operation of the scheme will only produce minimal waste (e.g. waste oil) from maintenance activities and small amounts of domestic waste.	A waste management plan will be implemented and records maintained.

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<p>Waste Storage</p> <ul style="list-style-type: none"> <li>Hazardous waste must be stored so as to prevent or control accidental releases to air, soil and water resources, including: <ul style="list-style-type: none"> <li>To prevent co-mingling or contact between incompatible wastes, allows for inspection between containers to monitor leaks or spills</li> <li>Stored in closed containers away from direct sunlight, wind and rain</li> <li>Provided with secondary containment systems to prevent loss to the environment</li> <li>Secondary containment to be provided where liquid wastes are stored in volumes greater than 220 litres, volume of secondary containment to be at least 110% of the largest storage container or 25% of the total storage capacity (whichever is greater)</li> <li>Provide adequate ventilation where volatile wastes are stored.</li> <li>Special management actions are also required, including labelling of containers, limiting access to hazardous waste storage areas to employees who have received proper training, clearly identifying the storage area, periodic inspections of waste storage areas, preparing and implementing spill response and emergency plans, avoiding underground storage tanks and underground piping of hazardous waste.</li> </ul> </li> </ul>	<p>The operation of the scheme will only produce minimal waste (e.g. waste oil) from maintenance activities and small amounts of domestic waste.</p>	<p>A waste management plan will be implemented and records maintained.</p>

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<p>Transportation:</p> <ul style="list-style-type: none"> <li>To be conducted so as to prevent or minimise spills, releases and exposures to employees and the public</li> <li>All waste containers for off-site shipment to be secured and labelled with contents and associated hazardous and properly loaded on the transport vehicle before leaving the site and accompanied by a shipping paper that describes the load and its associated hazards, consistent with guidance provided in Section 3.4 Transport of Hazardous Materials.</li> </ul>	<p>The operation of the scheme will only produce minimal waste (e.g. waste oil) from maintenance activities and small amounts of domestic waste.</p>	<p>A waste management plan will be implemented and records maintained.</p>

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	<p>Treatment and Disposal</p> <ul style="list-style-type: none"> <li>In addition to recommendations applicable for general wastes, issues specific to hazardous wastes should be considered: <ul style="list-style-type: none"> <li>Commercial or government waste contractors – do they have the technical capability to reduce the immediate and future impact to the environment, have all the required permits etc., been secured through use of formal procurement agreements</li> <li>In the absence of qualified waste disposal operators project sponsors should consider installing on-site waste treatment or recycling processes or as a final option constructing facilities that will provide for the environmental sound long-term storage of wastes on-site or off-site until external options become available</li> </ul> </li> </ul>	<p>The operation of the scheme will only produce minimal waste (e.g. waste oil) from maintenance activities and small amounts of domestic waste.</p>	<p>A waste management plan will be implemented and records maintained.</p>

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
00030824	<ul style="list-style-type: none"> <li>Monitoring activities associated with the management of hazardous and non-hazardous waste should include:               <ul style="list-style-type: none"> <li>- Regular inspection of waste storage collection and storage areas for evidence of accidental releases and to verify that wastes are properly labelled and stored</li> <li>- (additional monitoring requirements apply when significant quantities of hazardous wastes are generated and stored on-site)</li> <li>- Regular audits of waste segregation and collection practices</li> <li>- Tracking of waste generation trends by type and amount</li> <li>- Keeping manifests or other records that document the amount of waste generated and its destination</li> <li>- Periodic auditing of third party treatment, and disposal services including re-use and recycling facilities when significant quantities of hazardous wastes are managed by third parties.</li> <li>- Regular monitoring of groundwater quality where hazardous waste is stored and/or pre-treated on-site</li> <li>- Monitoring records for hazardous waste collected, stored or shipped to include physical state, quantity, tracking documentation, method and date of storing, treating or disposing, location of each hazardous waste within the facility and quantity at each location.</li> </ul> </li> </ul>	<p>The operation of the scheme will only produce minimal waste (e.g. waste oil) from maintenance activities and small amounts of domestic waste.</p>	<p>A waste management plan will be implemented and records maintained.</p>



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<b>1.7 Noise</b> <b>Prevention and control</b>	<ul style="list-style-type: none"> <li>Noise prevention and mitigation measures should be applied where predicted or measured noise impacts from a project facility exceed the applicable noise level guideline at the most sensitive point of reception.</li> <li>The preferred method for control noise from stationary sources is to implement noise control measures at source.</li> <li>Methods for prevention and control of noise emissions depend on the source and proximity of receptors.</li> <li>Noise reduction options that should be considered include: <ul style="list-style-type: none"> <li>Installing silencers or suitable mufflers on engine exhausts, installing acoustic enclosures</li> <li>Improving the acoustic performance of constructed buildings through sound insulation</li> <li>Limiting the hours of operation</li> <li>Installing acoustic barriers without gaps</li> <li>Siting facilities away from community areas if possible</li> <li>Developing a mechanism to record and respond to complaints.</li> </ul> </li> </ul>	The predicted noise impact is low. The likelihood of compliance with the EHS Guidelines is high.	Noise monitoring at the nearest noise sensitive receptor is recommended to demonstrate compliance with the applicable standards and EHS Guidelines.
<b>Noise Guidelines</b>	<b>Level</b> <ul style="list-style-type: none"> <li>Noise impacts should not exceed the levels presented in Table 1.7.7 of the EHS General Guidelines or result in a maximum</li> </ul>	Predicted noise levels comply with the absolute criteria outlined in the EHS Guidelines. Existing ambient noise levels	Noise monitoring at the nearest noise sensitive receptor is recommended to demonstrate

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	increase in background levels of 3dB at the nearest receptor location off-site.	are unknown.	compliance with the applicable standards and EHS Guidelines..
<b>Monitoring</b>	<ul style="list-style-type: none"> <li>Noise monitoring may be carried out to establish the existing ambient noise levels in the area of the facility or for verifying operational phase noise levels</li> <li>Noise monitoring programs should be designed and conducted by trained specialists. Monitoring periods should be sufficient for statistical analysis, monitors should be located approximately 1.5m above the ground no closer than 3m to any reflecting surface.</li> <li>The noise limit is generally represented by the background or ambient noise levels that would be present in the absence of the facility.</li> </ul>	Noise monitoring has not been undertaken as part of the EIA. Noise monitoring is required to demonstrate compliance with EHS Guidelines.	Noise monitoring at the nearest noise sensitive receptor is recommended to demonstrate compliance with the applicable standards and EHS Guidelines.
<b>1.8 Contaminated Land</b>			
<b>Applicability and Approach</b>	<ul style="list-style-type: none"> <li>Land is considered contaminated when it contains hazardous materials or oil concentrations above background or naturally occurring levels.</li> <li>Contamination of land should be avoided by preventing or controlling the release of hazardous materials, hazardous wastes or oil to the environment.</li> <li>Contaminated lands should be managed to avoid the risk to human health and ecological receptors.</li> <li>To determine whether risk management options are warranted an assessment</li> </ul>	<p>The EIA Report lists the other pollutants that might be present in the excavated dust (including hazardous substances). Measures to protect the ground from spillages and hazardous substances are provided. The measures identified appear to be appropriate to control the risk of contamination from the use and storage of hazardous substances on the site.</p> <p>During operation of the wind farm measures have been put in place to reduce the risk of oil spillage and effective containment of oil</p>	No further action is recommended.

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<p>should be undertaken to establish whether three risk factors (contaminants, receptors and exposure pathways) co-exist or are likely to co-exist.</p> <ul style="list-style-type: none"> <li>When the three risk factors are considered to be present the following steps should be taken: <ul style="list-style-type: none"> <li>- Risk screening</li> <li>- Interim risk management</li> <li>- Detailed quantitative risk assessment</li> <li>- Permanent risk reduction measures</li> </ul> </li> </ul>	(including waste oil).	
<b>Risk Screening</b>	<ul style="list-style-type: none"> <li>Where there is evidence of contamination at site the following steps are recommended:</li> <li>Identification of the location of contamination</li> <li>Sampling and testing according to established technical methods</li> <li>Evaluation of the analytical results against local and national regulations</li> <li>Verification of the potential human and/or ecological receptors and exposure pathways relevant to the site.</li> <li>The result may indicate there is no overlap between the three risk factors as the levels of contamination are below those considered to pose a risk to human health or the environment.</li> <li>Alternatively, interim or permanent risk reduction measures may need to be taken with or without more detailed risk</li> </ul>	<p>Measures to protect the ground from spillages and hazardous substances are provided in the EIA Report. The measures identified appear to be appropriate to control the risk of contamination from the use and storage of hazardous substances on the site.</p> <p>During operation of the wind farm measures have been put in place to reduce the risk of oil spillage and effective containment of oil (including waste oil).</p>	No further action is recommended.

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<b>Interim Management Risk</b>	<p>assessment (see below).</p> <ul style="list-style-type: none"> <li>Interim risk management actions should be implemented if the presence of land contamination poses an “imminent hazard”, i.e. an immediate risk to human health and the environment if allowed to continue, e.g. presence of an explosive atmosphere, excessive contamination which could result in acute toxicity, irreversible long term effects.</li> <li>Appropriate risk reduction should be implemented as soon as practicable to remove the condition posing the imminent hazard.</li> </ul>	<p>Measures to protect the ground from spillages and hazardous substances are provided in the EIA Report. The measures identified appear to be appropriate to control the risk of contamination from the use and storage of hazardous substances on the site.</p> <p>During operation of the wind farm measures have been put in place to reduce the risk of oil spillage and effective containment of oil (including waste oil).</p>	No further action is recommended.
<b>Detailed Management Risk</b>	<ul style="list-style-type: none"> <li>A detailed site-specific environmental risk assessment may be used to develop strategies that yield acceptable health risks while achieving low level contamination on-site. An assessment of contaminant risk needs to be considered in the context of current and future land use, and development scenarios (e.g. residential, commercial, parkland use etc.).</li> <li>A detailed risk assessment involves a detailed site investigation using quality assurance/quality control measures to ensure that data quality is adequate for the intended data use.</li> <li>The site investigation should be used to develop a conceptual site model of how and where contaminants exist, how they</li> </ul>	Measures to protect the ground from spillages and hazardous substances are provided in the EIA Report.	No further action is recommended.

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	<p>are transported and where routes of exposure occur to organisms and humans, including quantifying the potential environmental and/or human health risks, determining if the risk is likely to remain stable, increase or decrease with time in the absence of any remediation.</p> <ul style="list-style-type: none"> <li>If risk reduction measures are required its necessary to determine where risk reduction measures should be implemented, the preferred technologies needed to implement these measures, a monitoring plan should be developed to determine whether risk reduction measures are effective. The need and appropriateness for institutional controls (e.g. land use restrictions, deed restriction) should be considered as part of a comprehensive approach.</li> </ul>		
<b>Permanent Risk Reduction Measures</b>	<ul style="list-style-type: none"> <li>The underlying principle is to reduce, eliminate or control any or all of the three risk factors.</li> <li>Risk mitigation strategies should be developed based on site-specific conditions and site constraints.</li> <li>Regardless of the management option selected, the action plan should include wherever possible contaminant source reduction.</li> <li>Risk mitigation strategies can be adopted</li> </ul>	Measures to protect the ground from spillages and hazardous substances are provided in the EIA Report.	No further action is recommended.

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<p>for contaminant source and exposure concentrations.</p> <ul style="list-style-type: none"> <li>Containment measures should also be considered for immediate implementation where source reduction measures are expected to take time.</li> </ul>		
<b>Occupational Health and Safety Considerations</b>	<p>Investigation and remediation of contaminated land:</p> <ul style="list-style-type: none"> <li>Occupational health and safety precautions should be exercised to minimise exposure, as described in Section 2 Occupational Health and Safety.</li> <li>Workers on contaminated sites should receive special health and safety training specific to contaminated site investigation and remediation.</li> </ul>	<p>No special control measures are required in respect of the risk to human health during construction and/or operation from contaminated land as there is no known contaminated land on the sites.</p>	<p>No further action is recommended.</p>
<b>2.0 Occupational Health and Safety</b>			

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
<b>Applicability and Approach</b>	<ul style="list-style-type: none"> <li>Guidance applies to construction, operation and decommissioning.</li> <li>Companies should hire contractors that have the technical capability to manage the occupational health and safety issues of their employees.</li> <li>Preventative and protective measures should be introduced according to the following order of priority: <ul style="list-style-type: none"> <li>Eliminating the hazard by removing the activity from the work process</li> <li>Controlling the hazard at its source through use of engineering controls</li> <li>Minimise the hazard through design of safe work systems and administrative or institutional control measures</li> <li>Providing appropriate personal protective equipment (PPE) in conjunction with training, use and maintenance of PPE.</li> <li>Application of prevention and control measures to occupational hazards should be based on comprehensive job safety or job hazard analyses. The results of these analyses should be prioritised as part of an action plan based on the likelihood and severity of the consequence of exposure to the identified hazards.</li> </ul> </li> </ul>	<p>The wind farm is operational. A Health and Safety Plan will be implemented during operation of the wind farm. The Health and Safety Plan will cover all relevant aspects to ensure compliance with health and safety legislation and international good practice relating to occupational and community health and safety and will include the following aspects:</p> <ul style="list-style-type: none"> <li>Working at heights</li> <li>Electrical safety</li> <li>Emergency and evacuation procedures (e.g. in the event of a fire)</li> <li>General health and safety measures</li> <li>Access and security.</li> </ul> <p>The exact operational provisions and procedures are not available at this stage and will be set at the time the client will be tendering for the operational contract.</p> <p>EDPR's "General Contracting Conditions" are mandatory and are attached to every contract to be signed by Contractors. These include provisions relating to the occupational health and safety and employment and social obligations.</p> <p>A maintenance contract has been awarded to Vestas for maintenance of the wind turbines.</p>	<p>According to the provisions of the Law 319/2006 and GD 1425/2006 amended by GD 955/2010 the Accidents risks assessment document has to be prepared by a certified company / individual.</p> <p>According to the provisions of the Law 319/2006 and GD 1425/2006 amended by GD 955/2010 EDPR staff trainers must have the proper qualification and H&amp;S conventions must be closed with the maintenance and operation workers.</p> <p>OHSAS 18001:2008 standard is to be implemented and certified, according to which a yearly management plan for H&amp;S has to be prepared and the company management must keep records of management audits and meetings.</p>

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<b>2.1 General Facility Design and Operation</b>			
<b>Integrity of Workplace Structures</b>	<ul style="list-style-type: none"> <li>Permanent and recurrent places of work should be designed and equipped to protect OHS, e.g. easy to clean and maintain, structurally safe, acceptable light and noise conditions, fire resistant, heavy oscillating, rotating or alternating equipment should be located in dedicated buildings or structurally isolated sections.</li> </ul>	The Project has been implemented according to EN ISO 17050-1:2004 and Directive 2006/42/CE	No further action is recommended.
<b>Severe Weather and Facility Shutdown</b>	<ul style="list-style-type: none"> <li>Work place structures should be designed and constructed to withstand the expected elements for the region and have an area designed for safe refuge if appropriate.</li> <li>Standard operating procedures should be development for project shutdown, including an evacuation plan. Drills to practice the procedure and plan should be undertaken annually.</li> </ul>	<p>The Project has been implemented according to EN ISO 17050-1:2004 and Directive 2006/42/CE.</p> <p>According with the provisions of law 319/2006 and GD 1425/2006 amended by GD 955/2010 as well as the provisions of Law 307/2006 and Ministry of Internal Affairs Order 163/2007 twice a year emergency situations simulation exercises have to be done with the participation of staff from the county Emergency situations inspectorate.</p>	No further action is recommended.
<b>Workspace and Exit</b>	<ul style="list-style-type: none"> <li>The space provided for each worker should be adequate for safe execution of all activities.</li> <li>Passages to emergency exits should be unobstructed at all times.</li> <li>Exits should be clearly marked to be visible in total darkness.</li> <li>The number and capacity of exits should</li> </ul>	An Emergency situations evacuation plan is prepared, the evacuation routes are always unobstructed and the emergency exits are properly marked.	No further action is recommended



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	<p>be sufficient for safe and orderly evacuation and there should be a minimum of two exits from any work area.</p> <ul style="list-style-type: none"> <li>Facilities should be designed and built taking into account the needs of disabled persons.</li> </ul>		
<b>Fire Precautions</b>	<ul style="list-style-type: none"> <li>The workplace should be designed to prevent the start of fires through the implementation of fire codes applicable to industrial settings.</li> <li>Facilities should be equipped with fire detectors, alarm systems and fire-fighting equipment, which should be maintained in good working order and be readily accessible. It should be adequate for the dimensions and use of the premises, equipment installed, physical and chemical properties of substances present and the maximum number of people present.</li> <li>Manual firefighting equipment that is easy to use should be provided</li> <li>Fire and emergency alarm systems should be both audible and visible.</li> </ul>	<p>The Project has been implemented according to EN ISO 17050-1:2004 and Directive 2006/42/CE</p> <p>Fire extinguishers are placed inside at the turbine entrance.</p>	No further action is recommended.
<b>Lavatories and Showers</b>	<ul style="list-style-type: none"> <li>Adequate lavatory facilities (toilets and washing areas) should be provided for the number of people expected to work in the facility and allowances made for segregated facilities. Toilet facilities should be provided with adequate supplies of hot and cold running water, soap and hand drying devices</li> </ul>	<p>There will be no connection to the site for water supply or sewerage.</p> <p>During operation waste water will be collected in a septic tank and transported off-site for disposal.</p> <p>Ecological toilets will be provided during</p>	No further action is recommended.

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	<ul style="list-style-type: none"> <li>Where workers may be exposed to substances poisonous by ingestion and skin contamination may occur, facilities for showering and changing into and out of street and work clothes should be provided.</li> </ul>	and operation (within the substation). Water will be tankered onto the site and means for the provision of hot and cold water installed within the substation building.	
<b>Potable Water Supply</b>	<ul style="list-style-type: none"> <li>Adequate supplies of potable water should be provided from a fountain or other means</li> <li>Water supplied to areas of food preparation or for the purpose of personal hygiene standards should meet drinking water quality standards</li> </ul>	Potable bottled water will be delivered to the site. There will be no connection to the site for water supply.	No further action is recommended
<b>Clean Eating Area</b>	<ul style="list-style-type: none"> <li>Where there is the potential for exposure to substances poisonous by ingestion, suitable arrangements are to be made for the provision of clean eating areas</li> </ul>	Clean eating areas will be provided within the substation complex for use by staff based on the site.	No further action is recommended.
<b>Lighting</b>	<ul style="list-style-type: none"> <li>Workplaces should, to the degree flexible, receive natural light and be supplemented with sufficient artificial illumination to promote workers' safety and health and enable safe equipment operation.</li> <li>Emergency lighting of adequate intensity should be installed and automatically activated upon failure of the principle artificial light source to ensure safe shut-down, evacuation etc.</li> </ul>	<p>The towers of the wind turbines will be equipped with lifts and stairs and interior lighting.</p> <p>The towers will have also internal lights. The only external lights permitted are the red flashing lights on top of the turbines. In the case of emergency intervention or maintenance outside the turbine portable lights will be used.</p>	No further action is recommended.
<b>Safe Access</b>	<ul style="list-style-type: none"> <li>Passageways for pedestrians and vehicles within and outside buildings should be segregated</li> </ul>	Maintenance personnel will have access to the wind farm only after having attended specialist training courses: including basic	No further action is recommended.

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	<ul style="list-style-type: none"> <li>Equipment installations requiring servicing, inspection and/or cleaning should have unobstructed, unrestricted and ready access</li> <li>Hand, knee and foot railing should be installed on stairs, fixed ladders, platforms, permanent and interim floor openings, loading bays, ramps etc.</li> <li>Openings should be sealed by gates or removable chains</li> <li>Covers should, if feasible, be installed to protect against falling items</li> <li>Measures should be put in place to prevent access to dangerous areas</li> </ul>	<p>safety training, first aid, fire fighting and fire prevention, protection against fall and rescue at height.</p>	
<b>First Aid</b>	<ul style="list-style-type: none"> <li>The employer should ensure that qualified first-aid can be provided at all times.</li> <li>Appropriately equipped first-aid stations should be easily accessible</li> <li>Eye-wash stations and /or emergency showers should be provided close to all workstations where immediate flushing with water is the recommended first-aid response.</li> <li>Where the scale of work or the type of activity being carried out so requires, a dedicated and appropriately equipped first aid room should be provided. First aid rooms and stations should be equipped with gloves, gowns and masks for protection against direct contact with blood and other body fluids</li> </ul>	<p>Telephone numbers for use in all emergency situations will be cleared posted around the wind farm and in the substation compound.</p> <p>An Emergency Response Plan will be provided for implementation in emergency situations.</p> <p>Staff present on the site and involved in maintenance activities will be nominated and trained in respect of first aid.</p> <p>The Health and Safety Plan implemented during operation of the wind farm will include procedures to be followed in emergency situations (such as a work</p>	<p>No further action is recommended.</p>

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	<ul style="list-style-type: none"> <li>Remote sites should have written emergency procedures for dealing with cases of trauma or serious illness up to the point at which patient care can be transferred to an appropriate medical facility.</li> </ul>	accident, fire, environmental spillage, and lightning) and appropriate emergency equipment will be provided. The area accommodated by security personnel will be equipped with first aid kits.	
<b>Air Supply</b>	<ul style="list-style-type: none"> <li>Sufficient fresh air should be supplied for indoor and confined work spaces.</li> <li>Mechanical ventilation systems should be maintained in good working order.</li> <li>Re-circulation of contaminated air is not acceptable. Air inlet filters should be kept clean and free of dust and micro-organisms. Heating, ventilation and air conditioning systems and evaporative cooling systems should be equipped, maintained and operated so as to prevent growth and spreading of disease agents (e.g. legionella) or breeding of vectors of public health concern (e.g. mosquitoes).</li> </ul>	This is not applicable to the project site.	No further action is recommended.
<b>Work Environment Temperature</b>	<ul style="list-style-type: none"> <li>The temperature in work, rest room and other welfare facilities should, during service times, be maintained at a level appropriate for the purpose of the facility</li> </ul>	The welfare areas within the substation compound which will be occupied by security personnel will be provided with facilities to ensure provision of an appropriate work environment temperature.	No further action is recommended.
<b>2.2. Communication and Training</b>			
<b>OHS Training</b>	<ul style="list-style-type: none"> <li>OHS training to be provided to all new employees.</li> <li>Training should consist of basic hazard awareness, site-specific hazards, safe work practices and emergency</li> </ul>	A health and safety training programme has been prepared including consideration of emergency situations.  Only authorised and appropriately trained	No further action is recommended.

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	procedures.	personnel will be permitted to access the wind turbines and substation and to work at height. Clear signage will be provided indicating that access is prohibited for unauthorised persons. The entrance to the turbine towers will be securely locked.	
<b>Visitor Orientation</b>	<ul style="list-style-type: none"> <li>If visitors can gain access to areas where hazardous conditions or substances may be present a visitor orientation and control program should be established to ensure visitors do not enter hazard areas unescorted.</li> </ul>	<p>Visitors will be accompanied by authorised personnel only and only permitted on-site after receiving preliminary health and safety training.</p> <p>Decision 2 PSI/01.02.2012 relates to the training of visitors / subcontractors.</p> <p>According with the provisions of law 319/2006 and GD 1425/2006 amended by GD 955/2010 have to be prepared; a training procedure for visitors / subcontractors.</p>	No further action is recommended.
<b>New Task Employee and Contractor Training</b>	<ul style="list-style-type: none"> <li>Prior to commencement of new assignments workers and contractors should receive adequate training and information enabling them to understand work hazards and to protect their health from hazardous ambient factors that may be present.</li> </ul>	<p>Specialised companies will be responsible for providing health and safety training for employees and subcontractors.</p> <p>According with the provisions of law 319/2006 and GD 1425/2006 amended by GD 955/2010 have to be prepared; a training procedure for visitors / subcontractors</p>	No further action is recommended.
<b>Basic OHS Training</b>	<ul style="list-style-type: none"> <li>Basic occupational training program and speciality courses should be provided, as needed, to ensure that workers are</li> </ul>	Decision R101465/12.01.2011 relates to granting first aid and Decision R101466/12.01.2011 relates to the need for	No further action is recommended.

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	<p>orientated to the specific hazardous of individual work assignments. Training should generally be provided to management, supervisors, workers and occasional visitors to areas of risks and hazards</p> <ul style="list-style-type: none"> <li>Workers with rescue and first-aid duties should receive dedicated training.</li> <li>Through appropriate contract specifications and monitoring the employer should ensure that service providers, as well as contracted and subcontracted labour, are trained adequately before assignments begin.</li> </ul>	<p>fire extinguishers and staff evacuation.</p> <p>Basic occupational health and safety training will be provided in accordance with current legislation (Law 316/2006 and GD 1425/2006). This includes health and safety induction training, task specific training and refresher or update training. This training will be provided by certified staff</p> <p>Nominated first aid personnel will be provided with dedicated training.</p> <p>EDPR's "General Contracting Conditions" are mandatory and are attached to every contract to be signed by Contractors. These include provisions relating to the occupational health and safety and employment and social obligations.</p>	
<b>Area Signage</b>	<ul style="list-style-type: none"> <li>Hazardous areas, installation, materials, safety measures and emergency exits should be marked appropriately</li> <li>Signage should be in accordance with international standards and be well known to and easily understood by workers, visitors and the general public.</li> </ul>	<p>Health and safety warning signs are placed at the wind farm entrance and on the access doors of each turbine.</p>	<p>No further action is recommended.</p>
<b>Labelling of Equipment</b>	<ul style="list-style-type: none"> <li>All vessels that may contain substances that are hazardous should be labelled as to the contents and hazard or appropriately colour coded.</li> <li>Piping systems that contain hazardous</li> </ul>	<p>All equipment and materials stored will be appropriately labelled regarding safety hazards and risks, generally by the supplier of the equipment</p>	<p>No further action is recommended.</p>

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<b>Communicate Hazard Codes</b>	substances should be labelled with the direction of flow and contents of the pipe		
	<ul style="list-style-type: none"> <li>• Copies of the hazard coding systems should be posted outside the facility at emergency entrance doors</li> <li>• Information regarding the type of hazardous materials stored, handled or used at the facility should be shared with emergency services and security personnel</li> <li>• Representatives of local emergency and security services should be invited to participate in annual orientation tours and site inspections.</li> </ul>	<p>Health and safety warning signs are placed at the wind farm entrance and on the access doors of each turbine.</p> <p>The site has recently become operational and visits from the local emergency and security services should be arranged.</p>	No further action is recommended.
<b>2.3 Physical Hazards</b>			
<b>Rotating and Moving Equipment</b>	<ul style="list-style-type: none"> <li>• Recommended protective measures include:               <ul style="list-style-type: none"> <li>- Designing machines to eliminate trap hazards and ensuring that extremities are kept out of harm's way, use of guards which are designed and installed in accordance with appropriate machine safety standards.</li> <li>- Turning off, disconnecting, isolating and de-energising machinery with exposed or guarded moving parts or in which energy can be stored during servicing or maintenance in accordance with appropriate standards.</li> <li>- Designing and installing equipment to</li> </ul> </li> </ul>	The Project has been implemented in accordance with EN ISO 17050-1:2004 and Directive 2006/42/CE.	No further action is recommended.

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	enable routine service without removal of guarding devices or mechanisms.		
<b>Noise</b>	<ul style="list-style-type: none"> <li>No employee should be exposed to a noise level greater than 85 dB(A) for a duration of more than 8 hours per day without hearing protection. No unprotected ear should be exposed to a peak sound pressure level of more than 140dB(C).</li> <li>Use of hearing protection should be enforced actively when the sound level over 8 hours reaches 85 dB(A), peak sound levels reach 140 dB(C) or the average maximum sound level reaches 110dB(A). Hearing protective devices should be capable of reducing sound levels at the ear to at least 85dB(A).</li> <li>Hearing protection is preferred for any period of noise exposure in excess of 85dB(A) although an equivalent level of protection can be obtained by limiting the duration of noise exposure. For every 3dB(A) increase in sound levels, the allowed exposure period or duration should be reduced by 50%.</li> <li>Prior to issuance of hearing protective devices as the final control mechanism, use of acoustic insulating materials, isolation of the noise sources and other engineering controls should be investigated and implemented, where</li> </ul>	<p>A maintenance contract has been awarded to Vestas for maintenance of the wind turbines.</p> <p>Noise levels within the nacelle will be in excess of 80dB(A). Hearing protection is required if the wind turbine is in operation and work is required within the nacelle.</p> <p>Ensure hearing protection compliant with EHS Guidelines is required for work within the nacelle.</p> <p>Noise and vibration measurements have to be done by laboratories certified by the Labour Ministry.</p>	No further action is recommended.



IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<p>feasible.</p> <ul style="list-style-type: none"> <li>Periodic medical hearing checks should be performed on workers exposed to high noise levels.</li> </ul>		
<b>Vibration</b>	<ul style="list-style-type: none"> <li>Exposure to hand-arm vibration from equipment or whole-body vibrations from surfaces should be controlled through choice of equipment, installation of vibration dampening pads or devices and limiting the duration of exposure.</li> <li>Limits for vibration and action values are provided by the ACGIH.</li> <li>Exposure levels should be checked on the basis of daily exposure time and data provided by equipment manufacturers.</li> </ul>	<p>Exposure to high vibration levels is not expected.</p> <p>Appropriate control measures will be implemented in respect of vibration in accordance with the requirements of HG1876/2005.</p> <p>If necessary, vibration exposure measurements shall be completed by the specialised laboratory of ASP Constanta (Authority for Public Health).</p>	<p>No further action is recommended.</p>
<b>Electrical</b>	<ul style="list-style-type: none"> <li>Recommended actions include: <ul style="list-style-type: none"> <li>- Marking all energised electrical devices and lines with warning signs</li> <li>- Locking out (de-charging and laving open with a controlled locking device) and tagging out (warning sign placed on the lock) devices during service or maintenance</li> <li>- Checking all electrical cords, cables and hand power tools for frayed or exposed cords and following manufacturer recommendations for maximum permitted operating voltage</li> <li>- Double insulating / grounding all electrical equipment used in</li> </ul> </li> </ul>	<p>A Health and Safety Plan will be implemented during operation of the wind farm. The Health and Safety Plan will cover all relevant aspects to ensure compliance with health and safety legislation and international good practice relating to occupational and community health and safety and will include the following aspects:</p> <ul style="list-style-type: none"> <li>Working at heights</li> <li>Electrical safety</li> <li>Emergency and evacuation procedures (e.g. in the event of a fire)</li> </ul>	<p>A yearly equipment maintenance report has to be prepared.</p>

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	<p>environments that are, or may become wet; using equipment with ground fault interrupter protected circuits</p> <ul style="list-style-type: none"> <li>- Protecting power cords and extension cords against damage from traffic by shielding or suspending above traffic areas</li> <li>- Appropriate labelling of service rooms housing high voltage equipment and where entry is controlled or prohibited.</li> <li>- Establishing "No Approach" zones around or under high voltage power lines.</li> <li>- Rubber tired construction or other vehicles that come into direct contact with, or arcing between, high voltage wires may need to be taken out of service and have the tires replaced to prevent tire and wheel assembly failure</li> <li>- Conducting detailed identification and marking of all buried electrical wiring prior to any excavation work.</li> </ul>	<ul style="list-style-type: none"> <li>• General health and safety measures</li> <li>• Access and security.</li> </ul> <p>The exact operational provisions and procedures are not available at this stage and will be set at the time the client will be tendering for the operational contract.</p> <p>EDPR's "General Contracting Conditions" are mandatory and are attached to every contract to be signed by Contractors. These include provisions relating to the occupational health and safety and employment and social obligations.</p>	
<b>Eye Hazards</b>	<ul style="list-style-type: none"> <li>• Recommended measures include: <ul style="list-style-type: none"> <li>- Use of machine guards or splash shields and/or face and eye protection devices, such as safety glasses with side shield, goggles and /or a full face shield.</li> <li>- Moving areas where the discharge of solid fragments, liquid or gaseous</li> </ul> </li> </ul>	<p>Specific PPE shall be used by construction and maintenance worker (such as goggles or face protection helmets) as required for certain tasks.</p>	<p>No further action is recommended.</p>

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	<p>emissions can reasonably be predicted away from places expected to be occupied or transited by workers or visitors.</p> <ul style="list-style-type: none"> <li>- Provisions should be made for people who have to wear prescription glasses either through the use of overglasses or prescription hardened glasses.</li> </ul>		
<b>Welding / Hot Work</b>	<ul style="list-style-type: none"> <li>• Recommended measures include:               <ul style="list-style-type: none"> <li>- Provision of proper eye protection</li> <li>- Use of welding barrier screens around the workstation</li> <li>- Special hot work and fire prevention precautions and Standard Operating Procedures should be implemented if welding or hot cutting is to be undertaken outside established welding work stations.</li> </ul> </li> </ul>	<p>Provisions related to welding and hot work are relevant during operation.</p> <p>Protective measures to be used for welding equipment are specified in the operators' instructions and will be integrated within the Health and Safety Plan which will be followed by employees who carry out welding activities.</p> <p>Specific PPE, provided by the employer, shall be used on a compulsory basis.</p> <p>According with the provisions of law 319/2006 and GD 1425/2006 amended by GD 955/2010 as well as the provisions of Law 307/2006 and Ministry of Internal Affairs Order 163/2007 has to be prepared a procedure for the staff actions in case of emergency</p>	No further action is recommended.
<b>Industrial Vehicle Driving and Site Traffic</b>	<ul style="list-style-type: none"> <li>• Safety practices include:               <ul style="list-style-type: none"> <li>- Training and licensing industrial vehicle operators in safe operation of</li> </ul> </li> </ul>	There is a speed limit sign within the wind farm, indicating that vehicles should not travel faster than (5km/h).	

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	<p>specialised vehicles</p> <ul style="list-style-type: none"> <li>- Ensuring drivers undergo medical surveillance</li> <li>- Ensuring moving equipment with restricted rear visibility is outfitted with audible back-up alarms</li> <li>- Establishing rights-of-way, site speed limits, vehicle inspection requirements, operating rules and procedures and control of traffic patterns or direction</li> <li>- Restricting the circulation of delivery and private vehicles to defined routes and areas.</li> </ul>	<p>Large vehicles and cranes will be used during construction and potentially during maintenance if the rotors need to be dismantled.</p> <p>During construction appropriate on-site traffic control measures (including use of dedicated routes) will be implemented, as detailed within the Health and Safety Plan.</p> <p>EDPR's "General Contracting Conditions" are mandatory and are attached to every contract to be signed by Contractors. These include provisions relating to the occupational health and safety and employment and social obligations.</p> <p>All staff driving on the site should be suitably licensed and trained in the safe operation of specialised vehicles.</p>	
<b>Working Environment Temperature</b>	<ul style="list-style-type: none"> <li>• Avoid extreme temperatures in permanent work environments through implementation of engineering controls and ventilation.</li> <li>• Where this is not possible management procedures should be implemented, including: <ul style="list-style-type: none"> <li>- Monitoring weather forecasts for outside work to provide advance warning of extreme weather and</li> </ul> </li> </ul>	<p>Protective measures for working at high and low temperatures are set out in Ordinance No.99/2000 which takes into account provisions required during periods of extreme temperatures</p> <p>In case of extreme temperatures during construction, the H&amp;S coordinator shall make provisions for all employers in accordance with legal requirements</p>	No further action is recommended.

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	<p>scheduling work accordingly</p> <ul style="list-style-type: none"> <li>- Adjustment of work and rest periods depending on the temperature and workloads</li> <li>- Providing temporary shelters to protect against the elements during working or for use as rest areas</li> <li>- Use of protective clothing</li> <li>- Providing easy access to adequate hydration and avoiding consumption of alcoholic beverages.</li> </ul>	<p>(including provision of potable water and hot drinks etc.).</p> <p>Provision shall be made for maintenance and security staff during extreme temperatures in accordance with legal requirements.</p>	
<b>Ergonomics, Repetitive Motion, Manual Handling</b>	<p>Controls may include:</p> <ul style="list-style-type: none"> <li>• Use of mechanical assists to eliminate or reduce exertions required to lift materials, hold tools and work objects</li> <li>• Selecting and designing tools that reduce force requirements and holding times and improve postures</li> <li>• Providing user adjustable work stations</li> <li>• Incorporating rest and stretch breaks into work processes and conducting job rotation</li> <li>• Implementing quality control and maintenance programs that reduce unnecessary forces and exertions</li> <li>• Taking into consideration additional special conditions such as left handed persons</li> </ul>	<p>Control measures relating to ergonomics, repetitive actions and manual handling will be implemented to ensure compliance with national legislation.</p> <p>According to the provisions of law 319/2006 and GD 1425/2006 a health and safety procedure is required to be prepared for activities carried out within the wind farm.</p> <p>Staff involved in these activities will receive specialised training prior to undertaking such activities.</p>	No further action is recommended.
<b>Working at Heights</b>	<ul style="list-style-type: none"> <li>• Fall prevention and protection measures should be implemented whenever a worker is exposed to the hazard of falling</li> </ul>	<p>According to the provisions of law 319/2006 and GD 1425/2006 a health and safety procedure is required to be prepared for</p>	No further action is recommended.

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	<p>more than 2 meters; into operating machinery; into water or other liquid; into hazardous substances; or through an opening in a work surface.</p> <ul style="list-style-type: none"> <li>Fall prevention may include: <ul style="list-style-type: none"> <li>Installation of guardrails with mid-rails and toe boards at the edge of any fall hazard area</li> <li>Proper use of ladders and scaffolds by trained employees</li> <li>Use of fall prevention devices, including safety belt and lanyard travel limiting devices to prevent access to fall hazard area or fall protection devices such as full body harnesses used in conjunction with shock absorbing lanyards attached to fixed anchor point or horizontal life-lines.</li> <li>Appropriate training in use, serviceability and integrity of the necessary PPE</li> <li>Inclusion of rescue and/o recovery plans and equipment to respond to workers after an arrested fall.</li> </ul> </li> </ul>	<p>activities carried out within the wind farm.</p> <p>Protective measures will be implemented for working at height. The operator will be responsible for implementing these measures.</p> <p>The PPE provided will need to be approved by the Labour Ministry Authority.</p> <p>All workers on site shall be trained with respect to the use of such equipment prior to undertaking work at heights.</p>	
<b>Illumination</b>	<ul style="list-style-type: none"> <li>Work area light intensity should be adequate for the general purpose of the location and type of activity and should be supplemented with dedicated work station illumination as needed.</li> <li>Controls should include: <ul style="list-style-type: none"> <li>Use of energy efficient light sources</li> </ul> </li> </ul>	<p>The towers of the wind turbines will be equipped with lifts and stairs and interior lighting.</p> <p>The towers will have also internal lights. The only external lights permitted are the red flashing lights on top of the turbines. In</p>	<p>No further action is recommended.</p>

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	<p>with minimum heat emission</p> <ul style="list-style-type: none"> <li>- Undertaking measures to eliminate glare/reflections and flickering of lights</li> <li>- Taking precautions to minimise and control optical radiation including direct sunlight</li> <li>- Controlling laser hazards in accordance with equipment specifications, certifications and recognised safety standards. The lowest feasible class laser should be applied to minimise risks.</li> </ul>	<p>the case of emergency intervention or maintenance outside the turbine portable lights will be used.</p>	
<b>2.4 Chemical Hazards</b>			
	<ul style="list-style-type: none"> <li>• Chemical hazards can be most effectively prevented through a hierarchical approach that includes:               <ul style="list-style-type: none"> <li>- Replacement of the hazardous substance with a less hazardous substitute</li> <li>- Implementation of engineering and administrative control measures to avoid or minimise the release of hazardous substances into the work environment</li> <li>- Minimising the number of employees exposed or likely to be exposed</li> <li>- Communicating chemical hazards to workers through labelling and marking according to national and internationally recognised requirements and standards</li> </ul> </li> </ul>	<p>The operation of the project will not require use or on-site storage of hazardous chemicals with the exception of oil which will be used during maintenance. Specific PPE (gloves) shall be provided for use during activities involving the use of oil.</p>	<p>No further action is recommended.</p>

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	<ul style="list-style-type: none"> <li>- Training workers in the use of available information, safe work practices and appropriate use of PPE.</li> </ul>		
<b>Air Quality</b>	<ul style="list-style-type: none"> <li>• Employers should take appropriate measures to maintain air quality in the work area, including:               <ul style="list-style-type: none"> <li>- Maintaining levels of contaminant dusts, vapours and gases below those recommended by the ACGIH</li> <li>- Developing and implementing work practices to minimise release of contaminants into the work environment, such as direct piping of liquid and gaseous materials</li> <li>- Enclosed operations</li> <li>- Local exhaust ventilation at emission / release points</li> </ul> </li> </ul>	<p>It is recognised in the EHS Guidelines for Wind Energy that these facilities do not generate process emissions and effluents during their operation.</p> <p>No atmospheric pollution sources are anticipated during operation.</p>	No further action is recommended.
<b>Fire and Explosion</b>	<ul style="list-style-type: none"> <li>• Prevention and control strategies include:               <ul style="list-style-type: none"> <li>- Storing flammables away from ignition sources and oxidising materials. Flammables storage areas should be remote from entry and exit points into buildings, away from facility ventilation intakes or vents, use spark-proof fixtures etc.</li> <li>- Providing bonding and grounding of, and between, containers and additional mechanical floor level ventilation if materials are being, or could be, dispensed in the storage area</li> </ul> </li> </ul>	<p>Protection measures will be implemented in respect of protection against the risk of fires and explosions. The Emergency Response Plans will include consideration of such situations.</p> <p>Twice a year, organised simulations shall be held to verify the responsiveness capacity in case of emergencies (fire, explosions etc.).</p>	No further action is recommended.



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	<ul style="list-style-type: none"> <li>- Defining and labelling fire hazards areas to warn of special rules</li> <li>- Providing specific worker training in handling of flammable materials, and in fire prevention or suppression.</li> </ul>		
<b>Corrosive, Oxidising and Reactive Chemicals</b>	<ul style="list-style-type: none"> <li>• Controls which should be observed in the work environment when handling such chemicals include:               <ul style="list-style-type: none"> <li>- Segregate corrosive, oxidising and reactive chemicals from flammable materials and from other chemicals of incompatible class, store in ventilated areas and in containers with appropriate secondary containment to minimise intermixing during spills</li> <li>- Workers required to handle corrosive, oxidising or reactive chemicals should be provided with specialised training and provided with, and wear, appropriate PPE.</li> <li>- Qualified first-aid should be ensured at all times where corrosive, oxidising or reactive chemicals are used. Appropriately equipped first-aid stations should be easily accessible throughout the place of work and eye-wash stations and/or emergency showers provided close to all workstations where the recommended first-aid response is immediate flushing with water.</li> </ul> </li> </ul>	Appropriate protective measures will be implemented to ensure safe working with chemicals (this is particularly relevant in terms of oil associated with the turbines). Specific PPE (gloves) shall be provided for use during activities involving such substances.	No further action is recommended.

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<b>Asbestos Containing Materials (ACM)</b>	<ul style="list-style-type: none"> <li>Avoid use of ACM in new buildings or as a new material in remodelling or renovation activities.</li> <li>Existing facilities with ACM should develop an asbestos management plan which clearly defines the locations where ACM is present, its condition, procedures for monitoring its condition, procedures to access the locations where ACM is present to avoid damage, and training of staff who can potentially come into contact with the material to avoid damage and prevent exposure.</li> <li>Repair or removal and disposal of existing ACM should only be performed by specially trained personnel following host county requirements or in their absence, internationally recognised procedures.</li> </ul>	<p>Use of ACM is to be avoided within the project</p> <p>There are no existing structures on the site and therefore it is assumed that there is no existing ACM on the project site.</p>	No further action is recommended.
<b>2.5 Biological Hazards</b>			
	<ul style="list-style-type: none"> <li>Biological hazards can be prevented most effectively by implementing the following measures: <ul style="list-style-type: none"> <li>If the nature of the activity permits, use of any harmful biological agents should be avoided and replaced with an agent that, under normal conditions of use, is not dangerous or less dangerous to workers.</li> <li>If use of harmful agents cannot be avoided, precautions should be taken to keep the risk of exposure as low as</li> </ul> </li> </ul>	<p>No biological hazards are associated with the site or the project.</p> <p>No local food shall be consumed (such as local mushrooms found in the vicinity of the construction site).</p> <p>A health and safety health monitoring contract has to be arranged and all staff are required to undergo annual checks.</p>	No further action is recommended.

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<p>possible and maintained below internationally established and recognised exposure limits.</p> <ul style="list-style-type: none"> <li>- Work processes, engineering and administrative controls should be designed, maintained and operated to avoid or minimise release of biological agents into the working environment. The number of employees exposed or likely to become exposed should be kept at a minimum</li> <li>- The employer should review and assess known and suspected presence of biological agents at the place of work and implement appropriate safety measures, monitoring, training and training verification programs.</li> <li>- Measures to eliminate and control hazards from known and suspected biological agents at the place of work should be designed, implemented and maintained in close co-operation with the local health authorities and according to recognised international standards</li> <li>- The employer should at all times encourage and enforce the highest level of hygiene and personal protection, especially for activities employing biological agents of WHO Groups 3 and 4 above.</li> </ul>		

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<ul style="list-style-type: none"> <li>- Work involving agents in Groups 3 and 4 should be restricted only to those persons who have received specific verifiable training in working with and controlling such materials</li> <li>- Areas used for the handling of Groups 3 and 4 biological agents should be designed to enable their full segregation and isolation in emergency circumstances and be subject to Standard Operating Procedures requiring routine disinfection and sterilisation of the work surfaces</li> </ul>		
<b>2.6 Radiological Hazards</b>			
	<ul style="list-style-type: none"> <li>• Prevention and control strategies include:               <ul style="list-style-type: none"> <li>- Places of work involving occupational and/or natural exposure to ionising radiation should be established and operated in accordance with recognised international safety standards and guidelines.</li> <li>- Exposure to non-ionising radiation, should be controlled to internationally recommended limits.</li> <li>- For both ionising and non-ionising radiation the preferred method for controlling exposure is shielding and limiting the radiation source. PPE is supplemental only or for emergency use.</li> </ul> </li> </ul>	<p>A small amount of electromagnetic radiation from the turbine is generated at hub height. Radiation is considered to decrease with the distance from the source and therefore the radiation generated from the turbines are low.</p> <p>Radiation will also be generated from the transformer/substations at ground level. However compared to other radiation sources in the normal environment (such as mobile telephones, electrical grids) the levels are low.</p> <p>Occupational health and safety monitoring of maintenance staff shall include</p>	<p>No further action is recommended.</p>

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
		monitoring of exposure to radiation sources.	
<b>2.7 Personal Protective Equipment (PPE)</b>			
	<ul style="list-style-type: none"> <li>Provide additional protection to workers exposed to workplace hazards in conjunction with other facility controls and safety systems.</li> <li>PPE is considered to be a last resort above and beyond the other facility controls and provides the worker with an extra level of personal protection.</li> </ul>	<p>Appropriate PPE will be provided for use by construction workers and maintenance staff in accordance with legal requirements.</p> <p>Where safe working practices cannot be adopted PPE should be used to manage risks to the health and safety of operatives.</p> <p>The PPE provided will be approved by the Labour Ministry authority.</p> <p>According to the provisions of the Law 319/2006 and GD 1425/2006 amended by GD 955/2010 an internal standards book has to be prepared, stating the allocation of the personal protective equipment.</p>	No further action is recommended.
	<ul style="list-style-type: none"> <li>Recommended measures for use of PPE in the workplace include:               <ul style="list-style-type: none"> <li>Active use of PPE if alternative technologies, work plans or procedures cannot eliminate, or sufficiently reduce, a hazard or exposure.</li> <li>Identification and provision of appropriate PPE that offers adequate protection to the worker, co-workers and occasional visitors, without incurring unnecessary inconvenience to the individual</li> </ul> </li> </ul>	<p>Appropriate PPE will be provided for use by workers and maintenance staff in accordance with legal requirements.</p> <p>The PPE provided will be as approved by the Labour Ministry authority.</p>	No further action is recommended.

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	<ul style="list-style-type: none"> <li>- Proper maintenance of PPE, including cleaning and replacement when damaged or worn out.</li> </ul> <p>Selection of PPE should be based on the hazard and risk and selected according to criteria on performance and testing established by recognised organisations.</p>		
<b>2.8 Special Hazard Environments</b>			
	<ul style="list-style-type: none"> <li>• Defined as work situations where the above described hazards may exist under unique or especially hazardous circumstances.</li> </ul>	<p>According to the provisions of the Law 319/2006 and GD 1425/2006 amended by GD 955/2010 procedures for working in special conditions (closed spaces, isolation etc.) have to be prepared.</p>	<p>No further action is recommended.</p>
<b>Confined Spaces</b>	<ul style="list-style-type: none"> <li>• Defined as a wholly or partially enclosed space not designed or intended for human occupancy and in which a hazardous atmosphere could develop as a result of the contents, location or construction of the confined space or due to work done in or around the confined space.</li> </ul>	<p>Staff will be appropriately trained to work in confined spaces and to manage the health and safety risks associated with working in these conditions.</p> <p>The workers to be involved in working in confined spaces shall work in a team with a minimum of two personnel.</p>	<p>No further action is recommended.</p>
	<ul style="list-style-type: none"> <li>• Recommended management approaches include:               <ul style="list-style-type: none"> <li>- Implementation of engineering methods to eliminate, to the degree feasible, the existence and adverse character of the confined space</li> <li>- Confined spaces which contain physical or atmospheric hazards that</li> </ul> </li> </ul>	<p>There will not be any lone working. Maintenance and other activities will be undertaken by a team of at least 2 people.</p>	<p>No further action is recommended.</p>

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<p>could trap or engulf someone (known as a permit-required confined space) should be provided with permanent safety measures for venting, monitoring and rescue operations.</p> <ul style="list-style-type: none"> <li>- Access hatches should accommodate 90% of the worker population with adjustments for tools and protective clothing</li> <li>- Prior to entry into a permit-required confined space: process or feed lines into the space should be disconnected or drained and blanked and locked-out, mechanical equipment in the space should be disconnected, de-energised, locked-out and braced as appropriate, the atmosphere within the confined space should be tested to ensure the oxygen content is between 19.5% and 23% and the presence of any flammable gas or vapour does not exceed 25% of its respective Lower Explosive Limit (LEL).</li> <li>- If atmospheric conditions are not met, the confined space should be ventilated until the safe atmosphere is achieved, or entry is only to be undertaken with appropriate and additional PPE.</li> <li>- Safety precautions should include Self Contained Breathing Apparatus, life lines and safety watch workers</li> </ul>		

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<p>stationed outside the confined space, with rescue and first-aid equipment readily available.</p> <ul style="list-style-type: none"> <li>- Before workers are required to enter a permit-required confined space, adequate and appropriate training in confined space hazard control, atmospheric testing, use of the necessary PPE and its serviceability, should be verified.</li> </ul>		
<b>Lone and Isolated Workers</b>	<ul style="list-style-type: none"> <li>• Defined as a worker out of verbal and line of sight communication with a supervisor, other workers or other persons capable of providing aid and assistance for continuous periods exceeding one hour.</li> <li>• Standard Operating Procedures (SOPs) should be developed and implemented to ensure all PPE and safety measures are in place before the worker starts work.</li> <li>• SOPs should establish, at a minimum, verbal contact with the worker at least once every hour and ensure the worker has a capability for summoning emergency aid.</li> </ul>	<p>There will not be any lone working. Maintenance and other activities will be undertaken by a team of at least 2 people.</p>	<p>No further action is recommended.</p>
<b>2.9 Monitoring</b>			
	<ul style="list-style-type: none"> <li>• OHS monitoring programs should verify the effectiveness of prevention and control strategies.</li> <li>• The OHS monitoring program should include: <ul style="list-style-type: none"> <li>- Safety inspection, testing and</li> </ul> </li> </ul>	<p>On 3.04.2012 an internal audit for H&amp;S and emergency situations was performed by the consultant, two observations were made each with a deadline. Corrective actions identified should be implemented.</p> <p>The Health and Safety Plan will include</p>	<p>OHSAS 18001:2008 standard is to be implemented and certified, according to which a yearly monitoring plan for H&amp;S has to be prepared (includes inspections plan, trainings, air</p>



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	<p>calibration – including use of PPE, inspection and testing of all safety features and hazard control measures</p> <ul style="list-style-type: none"> <li>- Surveillance of the working environment – monitoring and analyses to internationally recognised standards</li> <li>- Surveillance of workers health – where extraordinary protective measures are required</li> <li>- Training – adequately monitored and documented.</li> </ul>	<p>occupational health and safety monitoring, including the following aspects as appropriate:</p> <ul style="list-style-type: none"> <li>• Hearing</li> <li>• Exposure to radiation sources</li> <li>• Health and safety training</li> <li>• Use of PPE and implementation of safe systems of work</li> <li>• Safety inspection</li> </ul> <p>The exact operational provisions and procedures are not available at this stage and will be set at the time the client will be tendering for the operational contract.</p> <p>EDPR's "General Contracting Conditions" are mandatory and are attached to every contract to be signed by Contractors. These include provisions relating to the occupational health and safety and employment and social obligations.</p>	<p>quality measurements etc.)</p>
<b>Accident and Disease Monitoring</b>	<ul style="list-style-type: none"> <li>• The employer should establish procedures and systems for reporting and recording occupational accidents and diseases and dangerous occurrences and incidents.</li> <li>• The systems and employer should enable and encourage workers to report to management all occupational injuries and near misses, suspected cases of occupational disease and dangerous</li> </ul>	<p>Accident monitoring and reporting will be undertaken in accordance with the requirements of Government Decision 1425/2006. The Health and Safety Inspectorate shall be informed immediately if there is an accident.</p>	<p>No further action is recommended.</p>

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<p>occurrence and incidents.</p> <ul style="list-style-type: none"> <li>All reported occupational accidents, occupational diseases, dangerous occurrences and incidents together with near misses should be investigated to establish what happened, the cause and identify measures necessary to prevent a reoccurrence.</li> <li>Occupational accidents and diseases should be classified according to fatal and non-fatal injuries and the total work hours during the specified reporting period reported to the appropriate regulatory agency.</li> </ul>		
<b>3.0 Community Health and Safety</b>			
<b>3.1 Water Quality and Availability</b>			
<b>Water Quality</b>	<ul style="list-style-type: none"> <li>Drinking water sources, whether public or private, should at all times be protected so that they meet or exceed applicable national standards or in their absence the WHO Guidelines for Drinking Water Quality.</li> <li>Air emissions, wastewater effluents, oil and hazardous materials and wastes should be managed according to the guidance provided in the respective sections of the General EHS Guidelines with the objective of protecting soil and water resources.</li> <li>Additional requirements apply where the project includes the delivery of water to the</li> </ul>	<p>There are no zones of hydrological protection, abstraction or potable water sources in or near the site.</p> <p>There will be no water supply connection for the site. Water for general uses and potable bottled water will be delivered to the site.</p>	<p>No further action is recommended.</p>

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	community or to users of facility infrastructure where water may be used for drinking, cooking, washing and bathing.		
<b>Water Availability</b>	<ul style="list-style-type: none"> <li>The potential effect of groundwater or surface water abstraction for project activities should be properly assessed through field testing and modelling techniques, accounting for seasonal variability and projected changes in demand in the project area.</li> <li>Project activities should not compromise the availability of water for personal hygiene needs and should take account of potential future increases in demand.</li> <li>The overall target should be the availability of 100 litres per person per day although lower levels may be used to meet basic health requirements.</li> </ul>	There will be no water supply connection for the site. Water for general uses and potable bottled water will be delivered to the site.	No further action is recommended.
<b>3.2 Structural Safety of Project Infrastructure</b>			
	<ul style="list-style-type: none"> <li>Hazards may be posed to the public while accessing project facilities, including burns and smoke inhalation from fires, exposure to hazardous materials, physical trauma from failure of building structures.</li> </ul>	<p>The internal areas of the turbines and substations will not be accessible to the public.</p> <p>Hazard warning signs will be displayed on substations and at least 150m from the turbines, where there is the risk of blade / ice throw.</p>	No further action is recommended
	<ul style="list-style-type: none"> <li>The following issues should be considered and incorporated as appropriate into the planning, siting and design phases: <ul style="list-style-type: none"> <li>- Inclusion of buffer strips or other</li> </ul> </li> </ul>	The wind farm is located more than 500m from the nearest residential property.	No further action is recommended

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<p>methods of physical separation around project sites to protect the public from major hazards associated with hazardous substances or process failure as well as nuisance issues related to noise, odours or other emissions</p> <ul style="list-style-type: none"> <li>- Incorporating of engineering criteria to prevent failures due to natural risks posed by earthquakes, tsunamis, wind, flooding, landslides and fire.</li> <li>- Application of locally regulated or internationally recognised building codes.</li> <li>• Engineers and architects responsible for designing and constructing facilities should certify the applicability and appropriateness of the structural criteria employed.</li> </ul>		
	<ul style="list-style-type: none"> <li>• Depending on the nature of the project, International Code Council or comparable codes should be followed as appropriate with respect to: <ul style="list-style-type: none"> <li>- Existing structures</li> <li>- Soils and foundations</li> <li>- Site grading</li> <li>- Specific requirements based on intended use and occupancy</li> <li>- Structural design</li> <li>- Accessibility and means of egress</li> <li>- Types of construction</li> </ul> </li> </ul>	<p>The wind farm consultants, Wind Energy have designed the site in accordance with applicable codes.</p>	<p>No further action is recommended.</p>

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<ul style="list-style-type: none"> <li>- Roof design and construction</li> <li>- Fire-resistant construction</li> <li>- Flood-resistant construction</li> <li>- Construction materials</li> <li>- Interior environment</li> <li>- Mechanical, plumbing and electrical systems</li> <li>- Elevators and conveying systems</li> <li>- Fire safety systems</li> <li>- Safeguards during construction</li> <li>- Encroachments onto public right-of-way</li> </ul>		
	<ul style="list-style-type: none"> <li>• During operation of a project hazard analysis can be undertaken to identify opportunities to reduce the consequences of a failure or accident, such as in respect of hazardous materials storage and use:               <ul style="list-style-type: none"> <li>- Reducing inventories of hazardous materials and process changes to reduce or eliminate the potential off-site consequences of a release</li> <li>- Improving shut-down and secondary containment to reduce the amount of material escaping from containment</li> <li>- Establish safety zones around a site, ensure the provision of emergency medical services to the public.</li> </ul> </li> </ul>	The internal areas of the turbines and the substations will not be accessible to the public.	No further action is recommended.
<b>3.3 Life and Fire Safety</b>			
<b>Applicability and Approach</b>	<ul style="list-style-type: none"> <li>• All buildings accessible to the public should be designed, constructed and operated in full compliance with local</li> </ul>	The substation will not be accessible by the public. It will be designed, constructed and operated in accordance with appropriate	No further action is recommended.

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<p>building codes, local fire building regulations, local legal/insurance requirements and an internationally accepted life and fire safety standard.</p>	<p>legal requirements and building codes.</p> <p>The Project has been implemented in accordance with EN ISO 17050-1:2004 and Directive 2006/42/CE.</p> <p>The Environment permit 12037/12.12.2007 has been issued by EPA Vaslui and the Authorization has been issued by the Public Health Direction Vaslui,</p>	
<b>Specific Requirements for New Buildings</b>	<ul style="list-style-type: none"> <li>The nature and extent of life and fire safety systems required will depend on the building type, structure, construction, occupancy and exposures. Sponsors should prepare a Life and Fire Safety Master Plan identifying major fire risks, applicable codes, standards and regulations and mitigation measures.</li> <li>The master plan should adequately cover, but not be limited to, the following: <ul style="list-style-type: none"> <li>- Fire Prevention</li> <li>- Means of Egress Detection and Alarm Systems</li> <li>- Compartmentation</li> <li>- Fire Suppression and Control</li> <li>- Emergency Response Plan</li> <li>- Operation and Maintenance</li> </ul> </li> </ul>	<p>The substation will not be accessible by the public. It will be designed, constructed and operated in accordance with appropriate legal requirements and building codes.</p> <p>Appropriate emergency equipment, including fire extinguishers, will be provided at the substation and in other areas at risk around the wind farm. Fire exits will be provided from the substation area which is to be occupied by security personnel.</p>	No further action is recommended.
<b>Specific Requirements for Existing Buildings</b>	<ul style="list-style-type: none"> <li>All life and fire safety guideline requirements for new buildings apply to existing buildings programmed for renovation.</li> </ul>	There are no existing buildings on the site.	No further action is recommended.

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<ul style="list-style-type: none"> <li>A suitably qualified professional conducts a complete life and fire safety review of existing buildings for renovation.</li> <li>The findings and recommendations are used as the basis of a Corrective Action Plan and a timeframe for implementing the changes.</li> </ul>		
<b>Other Hazards</b>	<ul style="list-style-type: none"> <li>Facilities, buildings, plants and structures should be situated to minimise potential risks from forces of nature</li> <li>All such structures should be designed in accordance with the criteria mandated by situation-, climatic- and geology-specific location risks</li> <li>Structural engineers and architects responsible for facilities should certify the applicability and appropriateness of the design criteria employed</li> <li>Further compliance requirements set out in fire safety codes and standards in national or regional building regulations or Fire Codes should be implemented.</li> </ul>	The area is identified as being stable in respect of seismic activity, and the Project sites are not vulnerable to landslides or flooding. No other hazards have been identified.	No further action is recommended.
<b>3.4 Traffic Safety</b>			
	<ul style="list-style-type: none"> <li>Traffic safety should be promoted by all project personnel during movement to and from the workplace and during operation of project equipment on private and public roads.</li> <li>Road safety initiatives proportional to the scope and nature of project activities should include:</li> </ul>	<p>A health and safety procedure for all activities carried out within the wind farm will need to be prepared in accordance with the provisions of law 319/2006 and GD 1425/2006.</p> <p>Traffic levels associated with operation of the wind farm will be minimal.</p>	No further action is recommended.

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<ul style="list-style-type: none"> <li>Adoption of best transport safety practices with the goal of preventing traffic accidents and minimising injuries suffered by project personnel and the public, such as:               <ul style="list-style-type: none"> <li>improving driving skills and requiring licensing of drivers, avoiding dangerous routes and times of the day, use of speed control devices, adopting limits for trip duration and arranging driver rosters to avoid overtiredness.</li> </ul> </li> <li>Regular maintenance of vehicles and use of manufacturer approved parts.</li> </ul>		
	<ul style="list-style-type: none"> <li>Where the project may contribute to a significant increase in traffic along existing roads or where road transport is a significant component of a project, recommended measures include:               <ul style="list-style-type: none"> <li>Minimising pedestrian interaction with construction vehicles</li> <li>Collaboration with local communities and responsible authorities to improve signage, visibility and overall safety of roads.</li> <li>Using locally sourced materials, wherever possible, to minimise transport distances</li> <li>Employing safe traffic control measures, including road signs and flag person to warn of dangerous conditions.</li> </ul> </li> </ul>	<p>A health and safety procedure for all activities carried out within the wind farm will need to be prepared in accordance with the provisions of law 319/2006 and GD 1425/2006.</p> <p>Traffic levels associated with operation of the wind farm will be minimal.</p>	<p>No further action is recommended.</p>



IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
<b>3.5 Transport of Hazardous Materials</b>			
<b>General Hazardous Materials Transport</b>	<ul style="list-style-type: none"> <li>Projects should have procedures in place that ensure compliance with local laws and international requirements applicable to the transport of hazardous materials.</li> <li>Procedures for transporting hazardous materials should include e.g. proper labelling of containers, provision of a shipping document, ensuring the volume, nature, integrity and protection of packaging and containers used for transport are appropriate for the material and the transport modes involved</li> <li>Training employees involved in the transport of hazardous materials, providing the means for emergency response on call 24 hours/day.</li> </ul>	No significant quantity of hazardous materials during the construction works were produced, and only a minimal amount of waste oil will be generated during the operation of the wind farm.	No further action is recommended.
<b>Major Transportation Hazards</b>	<ul style="list-style-type: none"> <li>Additional measures should be implemented in relation to major transportation hazards to prevent or minimise the consequences of catastrophic releases of hazardous materials which may result in toxic, fire, explosion or other hazards during transportation.</li> <li>These apply to transportation of hazardous materials at or above the threshold quantities detailed in the UN Transport of Dangerous Goods Model Regulations.</li> <li>A Hazardous Materials Transportation Plan should be prepared containing the</li> </ul>	<p>Appropriate control measures were applied during the transportation of very large rotor blades and sections of the towers during construction.</p> <p>No major transportation hazards are identified associated with operation of the wind farm.</p>	No further action is recommended.

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	following: <ul style="list-style-type: none"> <li>- Hazard assessment</li> <li>- Management actions (including incident investigation, management of contractors and training)</li> <li>- Preventive measures</li> <li>- Emergency preparedness and response</li> </ul>		
<b>3.6 Disease Prevention</b>			
<b>Communicable Diseases</b>	<ul style="list-style-type: none"> <li>• Recommended interventions at the project level include:               <ul style="list-style-type: none"> <li>- Providing surveillance and active screening and treatment of workers</li> <li>- Preventing illness among workers in local communities (e.g. health awareness and education initiatives, training health workers in disease treatment and immunisation programs, providing health services)</li> <li>- Providing treatment in on-site or community facilities</li> <li>- Promoting collaboration with local authorities to enhance access to health services</li> </ul> </li> </ul>	<p>A Labour medicine contract has to be agreed and all staff are required to undergo annual checks.</p> <p>Due to the nature of the scheme, the potential for community exposure to disease is not considered to be an issue.</p>	No further action is recommended.
<b>Vector-Borne Diseases</b>	<ul style="list-style-type: none"> <li>• Project sponsors, in close collaboration with community health authorities, can implement an integrated control strategy for mosquito and other arthropod-borne diseases that might involve:               <ul style="list-style-type: none"> <li>- Sanitary improvements</li> <li>- Elimination of unusable impounded</li> </ul> </li> </ul>	<p>Maintenance and cleaning procedures will be implemented with regard to the water tank used for general washing purposes during operation. Staff will be trained not to drink this water.</p> <p>Bottled potable water will be delivered to the site. Ecological toilets will be</p>	No further action is recommended.

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<p>water</p> <ul style="list-style-type: none"> <li>- Implementation of integrated vector control programs</li> <li>- Monitoring and treatment of circulating and migrating populations to prevent disease reservoir spread</li> <li>- Educating project personnel and area residents on risks, prevention and available treatment</li> <li>- Monitoring communities during high-risk seasons to detect and treat cases.</li> </ul>	<p>maintained as required.</p>	
<b>3.7 Emergency Preparedness and Response</b>			
	<ul style="list-style-type: none"> <li>• An emergency is an unplanned event when a project operation loses control, or could lose control, of a situation that may result in risks to human health, property or the environment, either within the facility or in the local community.</li> <li>• All projects should have an Emergency Preparedness and Response Plan that is commensurate with the risks of the facility and that includes the following: <ul style="list-style-type: none"> <li>- Administration (policy, purpose etc.)</li> <li>- Organisation of emergency areas</li> <li>- Roles and responsibilities</li> <li>- Communication systems</li> <li>- Emergency response procedures</li> <li>- Emergency resources</li> <li>- Training and updating</li> <li>- Checklists (role and action list and equipment checklist)</li> </ul> </li> </ul>	<p>There is a procedure for staff to respond in case of an emergency.</p> <p>The Health and Safety Plan which will be implemented during operation of the wind farm will include an Emergency Response plan.</p> <p>The Emergency Response Plan will contain the appropriate information, including communication systems, evacuation procedures, roles and responsibilities and details of contacts of appropriate services in the event of emergency events.</p> <p>Emergency provisions to be covered in the Response Plan include lightning protection, fire protection equipment and rescue plan, and electrical safety provisions.</p>	<p>No further action is recommended.</p>

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
<b>Communication Systems</b>	<ul style="list-style-type: none"> <li>- Business continuity and contingency</li> <li>• Worker notification and communication – to include alarm bells, visual alarms. Warning systems to be tested at least annually. A back-up system to be installed for communications with off-site resources, such as fire departments, in the event that normal communication methods may be inoperable during an emergency.</li> <li>• If a local community may be at risk from a potential emergency arising at the facility the company should implement communication systems to alert the community, such as vehicle mounted speakers, advise on appropriate protection, audible alarms etc.</li> <li>• Emergency information should be communicated to the media through a trained spokesperson, written press releases with accurate information.</li> </ul>	<p>There is a procedure for staff to respond in case of an emergency.</p> <p>Communication systems necessary to protect workers and the local community by broadcasting stations and mobile telephone will be implemented.</p>	No further action is recommended.
<b>Emergency Resources</b>	<p>Provision to be made for:</p> <ul style="list-style-type: none"> <li>• Finance and emergency funds – funding emergency activities</li> <li>• Fire services – whether sufficient capacity is available locally</li> <li>• Medical services – the company should provide first aid attendants as well as suitable medical equipment</li> <li>• Availability of resources – measures to be implemented to manage the availability of resources in case of an emergency, e.g.</li> </ul>	<p>There is a procedure for staff to respond in case of an emergency.</p> <p>The Health and Safety Plan which will be implemented during operation of the wind farm will include an Emergency Response plan.</p>	No further action is recommended.

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<p>providing personnel who can readily call up resources as required, tracking and managing costs associated with emergency resources</p> <ul style="list-style-type: none"> <li>• Mutual aid agreements - may decrease confusion and provide a clear basis for response by mutual aid providers, where appropriate mutual aid agreements should be maintained with other organisations to allow for sharing of personnel and specialised equipment</li> <li>• Contact list – to be maintained for all internal and external resources and personnel and maintained annually.</li> </ul>		
<b>Training and Updating</b>	<p>Programs should:</p> <ul style="list-style-type: none"> <li>• Identify training needs based on roles and responsibilities and requirements of personnel in an injury</li> <li>• Develop a training plan to address needs, particularly for fire fighting, spill response and evacuation</li> <li>• Conduct annual training at least</li> <li>• Provide training exercises to test emergency preparedness (debrief on completion and update plan as required)</li> </ul>	<p>Maintenance workers and security personnel will be provided with appropriate health and safety training and refresher training at least once per year.</p> <p>The Health and Safety Plan will include a training plan to address the requirements associated with the wind farm.</p>	No further action is recommended.
<b>Business Continuity and Contingency</b>	<p>Measures to address business continuity and contingency include:</p> <ul style="list-style-type: none"> <li>• Identifying replacement supplies or facilities to allow business continuity following an emergency</li> <li>• Using redundant or duplicate supply</li> </ul>	Not applicable	No further action is recommended.

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<p>systems as part of facility operations to increase the likelihood of business continuity</p> <ul style="list-style-type: none"> <li>• Maintaining back-ups of critical information in a secure location to expedite the return to normal operations following an emergency.</li> </ul>		
<b>4.0 Construction and Decommissioning</b>			
<b>4.1 Environment</b>			
<b>Noise and Vibration</b>	<ul style="list-style-type: none"> <li>• Noise reduction and control strategies to consider in areas close to community areas include: <ul style="list-style-type: none"> <li>- Planning activities in consultation with local communities to minimise disturbance</li> <li>- Using noise control devices, such as temporary barriers and muffling devices</li> <li>- Avoiding or minimising project transportation through community areas</li> </ul> </li> </ul>	<p>The EIA Report discusses basic aspects of acoustics and presents a noise map covering a section of the wind farm, quoting a noise target to not exceed 45dB(A) (assumed to be <math>L_{Aeq,T}</math>).</p>	<p>Noise monitoring should be undertaken at the nearest noise sensitive property to demonstrate compliance with EHS Guidelines.</p>
<b>Soil Erosion</b>	<p>Soil erosion and water system management approaches include:</p> <ul style="list-style-type: none"> <li>• Reducing or preventing erosion (e.g. by re-vegetating areas promptly, contouring and minimising steepness of slopes)</li> <li>• Reducing or preventing off-site sediment transport through use of settlement ponds, silt fences and water treatment and modifying or suspending activities during extreme rainfall.</li> </ul>	<p>No soil erosion or water system management approaches are considered to be required at the site.</p>	<p>No further action is recommended.</p>

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<ul style="list-style-type: none"> <li>• Clean runoff management – segregating or diverting clean water runoff to prevent it mixing with water containing a high solids content</li> <li>• Road design – limiting access road gradients to reduce run-off induced erosion, providing adequate road drainage</li> <li>• Disturbance to water bodies – depending on the potential for adverse impacts install free-spanning structures, restrict the duration and timing of in-stream activities to lower flow periods and avoiding periods critical to biological cycles, using isolation techniques such as berming</li> <li>• Structural (slope) stability – providing short-term measures for slope stabilisation, sediment control and subsidence control until long-term measures can be implemented, providing adequate drainage systems to minimise and control infiltration.</li> </ul>		
<b>Air Quality</b>	<p>Techniques to reduce and control air emissions from construction and decommissioning site include:</p> <ul style="list-style-type: none"> <li>• Minimising dust from material handling sources by using covers and/or control equipment,</li> <li>• Minimising dust from open area sources, including storage piles, by use of covers and increasing the moisture content</li> <li>• Dust suppression techniques such as</li> </ul>	<p>Due to the nature of the project, there are no atmospheric emissions from the operational stage.</p> <p>Section 4.13 of the EIA Report considers the potential impacts on air quality during the construction works. During this period mitigation measures and measures in accordance with environmental permits were carried out to limit air pollution.</p>	<p>A site restoration plan will be implemented during decommissioning to ensure that suitable control measures are implemented to avoid or minimise environmental impacts (such as noise, dust and potential spillage of oils).</p>

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<p>applying water to minimise dust from vehicle movements</p> <ul style="list-style-type: none"> <li>• Removing potential hazardous air pollutants, such as asbestos, from existing infrastructure prior to demolition</li> <li>• Managing emissions from mobile sources according to Section 1.1.</li> <li>• Avoiding open burning</li> </ul>		
<b>Solid Waste</b>	<ul style="list-style-type: none"> <li>• Techniques for preventing and controlling non-hazardous and hazardous construction site solid waste include those already discussed in Section 1.6</li> </ul>	<p>The EIA Report states methods by which solid hazardous waste will be dealt with during construction, operation and decommissioning.</p> <p>In addition, the EIA Report states that when the turbines are decommissioned various materials will be suitable for recycling.</p>	<p>No further action is recommended.</p>
<b>Hazardous Materials</b>	<p>Techniques for prevention, minimisation and control of impacts associated with the release of hazardous materials include:</p> <ul style="list-style-type: none"> <li>• Providing adequate secondary containment for fuel storage tanks and for the temporary storage of other fluids such as oils</li> <li>• Using impervious surfaces for refuelling areas</li> <li>• Training workers on correct transfer and handling of fuels and chemicals and spill response</li> <li>• Providing portable spill containment and cleanup equipment on-site and training in its deployment</li> </ul>	<p>The EIA Report does not refer to any stored hazardous materials on the site.</p> <p>The operation of the wind farm will not require the use of any significant quantities of hazardous materials.</p> <p>Trained specialists will carry out maintenance of the wind turbines and will ensure appropriate storage and disposal of any oils and lubricants, including clean and waste materials.</p>	<p>A site restoration plan will be implemented during decommissioning to ensure that suitable control measures are implemented to avoid or minimise environmental impacts (such as noise, dust and potential spillage of oils).</p>



IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<ul style="list-style-type: none"> <li>Assessing the contents of hazardous materials in building systems and process equipment and removing them prior to commencement of decommissioning activities and managing their treatment and disposal according to Sections 1.5 and 1.6.</li> <li>Assessing the presence of hazardous substances in or on building materials and decontaminating or properly managing contaminated building materials.</li> </ul>		
<b>Wastewater Discharges</b>	<ul style="list-style-type: none"> <li>Adequate portable or permanent sanitation facilities serving all workers should be provided at all construction sites.</li> <li>Sanitary wastewater in construction should be managed as described in Section 1.3.</li> </ul>	<p>The EIA Report (section 4.12) states that construction and operation waste water will be collected in special containers and transported off-site for disposal.</p> <p>There will be no connection to the site for water supply or sewerage.</p>	No further action is recommended.
<b>Contaminated Land</b>	<p>A basic strategy to manage the risk from contaminated land should include:</p> <ul style="list-style-type: none"> <li>Managing contaminated media with the object of protecting the safety and health of occupants of the site, the surrounding community and the environment</li> <li>Understanding the historic use of the land with regard to the potential presence of hazardous materials or oil prior to commencement of construction or decommissioning activities</li> <li>Preparing plans and procedures to respond to the discovery of contaminated</li> </ul>	Measures to protect the ground from spillages and hazardous substances are provided in section 4.14 of the EIA Report.	No further action is recommended.

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<p>media to minimise or reduce the risk to health, safety and the environment consistent with the approach in Section 1.6.</p> <ul style="list-style-type: none"> <li>Preparation of a management plan to manage obsolete, abandoned, hazardous materials or oil consistent with Section 1.6.</li> </ul>		
<b>4.2 Occupational Health and Safety</b>			
<b>Over-exertion</b>	<p>Recommendations to prevent and control injuries from over-exertion and ergonomic injuries include:</p> <ul style="list-style-type: none"> <li>Training of workers in lifting and materials handling techniques</li> <li>Planning work site layout to minimise the need for manual transfer of heavy loads</li> <li>Selecting tools and designing work station that reduce force requirements and holding times and which promote improved postures</li> <li>Implementing administrative controls into work processes, such as job rotations and rest or stretch breaks.</li> </ul>	<p>Staff involved in maintenance of the turbines will be appropriately trained in respect of manual handling, working at heights and other specialist areas. Maintenance staff will work in teams of at least 2 personnel.</p> <p>According to the provisions of law 319/2006 and GD 1425/2006 a health and safety procedure has to be prepared for all activities carried out within the wind farm.</p>	No further action is recommended.
<b>Slips and Falls</b>	<p>Recommended methods for the prevention of slips and falls from, or on, the same elevation include:</p> <ul style="list-style-type: none"> <li>Implementing good housekeeping practices</li> <li>Cleaning up excessive waste debris and liquid spills regularly</li> <li>Locating electrical cords and ropes in common areas and marked corridors</li> </ul>	<p>Protection measures in respect of slips and falls will be implemented in accordance with legal requirements. Specific protection measures against slips and falls shall be included in the training program for all workers.</p> <p>According to the provisions of law 319/2006 and GD 1425/2006 a health and safety</p>	No further action is recommended.

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<ul style="list-style-type: none"> <li>Use of slip retardant footwear.</li> </ul>	<p>procedure has to be prepared for all activities carried out within the wind farm.</p>	
<b>Work at Heights</b>	<p>If fall hazards exist a fall protection plan should be in place which includes one or more of the following, depending on the nature of the fall hazard:</p> <ul style="list-style-type: none"> <li>Training and use of temporary fall protection devices, such as rails, when working at heights equal or greater than 2 meters or at any height if the risk includes falling into operating machinery, water or other liquid, into hazardous substances or through an opening in a work surface</li> <li>Training and use of personal fall arrest systems, such as full body harnesses and energy absorbing lanyards able to support 5,000 pounds, as well as fall rescue procedures to deal with workers whose fall has been successfully arrested.</li> <li>Use of control zones and safety monitoring systems to warn workers of their proximity to fall hazard zones as well as securing, marking and labelling covers for openings in floors, roofs or walking surfaces</li> </ul>	<p>Protection measures in respect of working at height will be implemented in accordance with legal requirements.</p> <p>According to the provisions of law 319/2006 and GD 1425/2006 a health and safety procedure has to be prepared for all activities carried out within the wind farm.</p>	<p>No further action is recommended.</p>
<b>Struck By Objects</b>	<p>Techniques for the prevention and control of hazards from being struck by objects include:</p> <ul style="list-style-type: none"> <li>Using a designated and restricted waste drop or discharge zones and a chute for safe movement of wastes from upper to lower levels</li> </ul>	<p>According to the provisions of law 319/2006 and GD 1425/2006 a health and safety procedure has to be prepared for all activities carried out within the wind farm. Measures to prevent and control the risk of hazards from being struck by objects will be</p>	<p>No further action is recommended.</p>

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<ul style="list-style-type: none"> <li>• Maintaining clear traffic ways</li> <li>• Use of temporary fall protection measures in scaffolds</li> <li>• Evaluating work areas during blasting and using blast mats</li> <li>• Wearing appropriate PPE, such as safety glasses with side shields, face shields hard hats and safety shoes</li> </ul>	<p>implemented by the equipment manufacturer. These measures will comply with the requirements of national legislation.</p> <p>In addition, staff will be trained and provided with appropriate PPE (e.g. head protection) for use in situations where there is a risk of being struck by an object.</p>	
<b>Moving Machinery</b>	<p>Techniques for the prevention and control of impacts from moving machinery include:</p> <ul style="list-style-type: none"> <li>• Planning and segregating the location of vehicle traffic, machine operation and walking areas, establishment of speed limits</li> <li>• Ensuring visibility of personnel through use of high visibility vests when working in or waling through heavy equipment operating areas</li> <li>• Ensuring moving equipment is fitted with audible back-up alarms</li> <li>• Using inspected and well maintained lifting devices appropriate for the load</li> </ul>	<p>According to the provisions of law 319/2006 and GD 1425/2006 a health and safety procedure has to be prepared for all activities carried out within the wind farm.</p> <p>Measures to prevent and control impacts from moving equipment will be implemented by the equipment manufacturer and the operator of the equipment. These measures will comply with the requirements of national legislation</p>	No further action is recommended.
<b>Dust</b>	<ul style="list-style-type: none"> <li>• Dust suppression techniques should be implemented</li> <li>• PPE, such as dust masks, should be used where dust levels are excessive.</li> </ul>	No significant sources of dust are associated with operation of the wind farm.	No further action is recommended.
<b>Confined Spaces and Excavations</b>	In addition to the guidance provided in Section 2.8 the occupational hazards associated with confined spaces and excavations in construction and decommissioning sites should be prevented according to the following	According to the provisions of law 319/2006 and GD 1425/2006 a health and safety procedure has to be prepared for all activities carried out within the wind farm.	No further action is recommended.

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<p>recommendations:</p> <ul style="list-style-type: none"> <li>Controlling site-specific factors which may contribute to excavation slope instability, such as use of excavation dewatering, side-walls support</li> <li>Providing safe means of access and egress from excavations</li> <li>Avoiding operation of combustion equipment for prolonged periods inside excavation areas where workers are required to enter unless the area is actively ventilated.</li> </ul>	<p>Measures to prevent and control hazards associated with working in confined spaces and excavations will be implemented. These measures will comply with the requirements of national legislation.</p>	
<b>Other Site Hazards</b>	<p>Risk of exposure to dust, chemicals, hazardous or flammable materials and wastes should be prevented through the implementation of project-specific plans and other applicable management practices, including:</p> <ul style="list-style-type: none"> <li>Use of specially trained personnel to identify and remove waste materials from tanks, vessels or contaminated land</li> <li>Use of specially trained personnel to identify and selectively remove potentially hazardous materials in building elements prior to dismantling or demolition</li> <li>Use of waste-specific PPE based on the results of an occupational health and safety assessment, including respirators, clothing/protective suits, gloves and eye protection.</li> </ul>	<p>According to the provisions of law 319/2006 and GD 1425/2006 a health and safety procedure has to be prepared for all activities carried out within the wind farm.</p> <p>Measures to prevent and control hazards associated with working in confined spaces and excavations will be implemented. These measures will comply with the requirements of national legislation.</p>	<p>No further action is recommended.</p>
<b>4.3 Community Health and Safety</b>			

IFC EHS General Guidelines	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
<b>General Site Hazards</b>	<ul style="list-style-type: none"> <li>Projects should implement risk management strategies to protect the community from physical, chemical or other hazards associated with sites under construction and decommissioning.</li> <li>Risk management strategies may include:               <ul style="list-style-type: none"> <li>- Restricting access to the site, including fencing, signage and communication of risks to the local community</li> <li>- Removing hazardous conditions on construction sites that cannot be controlled effectively with site access restrictions, such as covering openings to small confined spaces.</li> </ul> </li> </ul>	No further action is recommended.	No further action is recommended.
<b>Disease Prevention</b>	<ul style="list-style-type: none"> <li>Recommendations for the prevention and control of communicable and vector-borne diseases also applicable to construction phase activities are provided in Section 3.6 (Disease Prevention).</li> </ul>	Due to the nature of the scheme, the potential for community exposure to disease is not considered to be an issue.	No further action is recommended.
<b>Traffic Safety</b>	<ul style="list-style-type: none"> <li>The incidence of road accidents should be minimised through a combination of education and awareness-raising and the adoption of procedures described in Section 3.4 (Traffic Safety).</li> </ul>	No transport effects are associated with operation of the wind farm.	No further action is recommended.

**Table 2c) European Best Practice Guidelines for Wind Energy Development**

European Best Practice Guidelines for Wind Energy Development	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
<b>1.0 Site Selection</b>			
<b>1.3 Initial Environmental Considerations</b>			
<b>Visual aspect</b>	<ul style="list-style-type: none"> <li>The visibility of the proposed site and the potential visibility from important public viewpoints should be assessed</li> </ul>	<p>The EIA report discusses the potential impacts of the proposed development on the existing landscape. The EIA Report states that the wind turbines will have a positive impact on the landscape.</p> <p>The EIA Report states that, as the visual impacts of the proposed development have been identified as positive, then there has been no requirement to consider measures to minimise visual impacts.</p> <p>The assessment methodology in respect of the visual impact of the wind farm and information relating to a baseline landscape survey of the site and surrounding area are not included in the EIA Report. Assessment of the landscape and visual impacts has been provided in a Supplementary Information Report.</p>	Further consideration of visual and landscape impacts is provided in the Supplementary Information Report.
<b>Proximity to dwellings</b>	<ul style="list-style-type: none"> <li>Wind turbines should not be located so close to domestic properties that they unreasonably affect the amenity of such properties through noise, shadow</li> </ul>	Predicted noise levels are low. The closest wind turbine to a residential property is approximately 600 metres away.	Noise monitoring is to be undertaken to demonstrate compliance with EHS Guidelines.

European Best Practice Guidelines for Wind Energy Development	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	flicker, visual domination or reflected light		
<b>Ecology</b>	<ul style="list-style-type: none"> <li>Developers should take account of existing information relating to both ecological designations which cover a particular area and particular protected species that are found in the area either year round or seasonally</li> </ul>	<p>Section 4.2 of the EIA Report describes the impact of the proposed wind farm on biodiversity. Field surveys and desk based studies were undertaken to identify the habitats present on the Site and in the surrounding area, this included field surveys to review the habitats in the area, the bird population, bats and other fauna.</p> <p>The EIA Report does not include consideration of the power transmission lines or pylons associated with the wind farm.</p> <p>Throughout site visits undertaken over a period of three months (March to May 2008), three species of birds were identified on the site, these were: Sparrow (<i>Passer Montanus</i>), Black crow (<i>Corvus Corone</i>) and Thrush Nightingale (<i>Luscinia, luscinia</i>). Although there were occasional sightings of hare and rodents, there was no evidence of resident animals on site. In addition, no bird nests were found on site. The site is located away from forested areas and water bodies. It is concluded that the wind farm will have no significant effect on terrestrial wildlife (including birds) and the site is not located on migration routes used by birds. The land has low</p>	<p>Further ecological assessment and an assessment of cumulative impacts associated with other wind farms in the area (based on a zone of influence of 10-15km of the Vutcani wind farm) has been undertaken and the results are presented in the Supplementary Information Report.</p> <p>An Independent Ornithological Expert (IOE) is to be appointed by EDPR. The IOE will have responsibility for bird and bat monitoring and surveys and for the implementation of appropriate mitigation measures as required.</p> <p>A Collision Risk Assessment is to be completed within two years of the wind farm becoming operational.</p> <p>Development and implementation by the IOE of a detailed shut down procedure for the wind farm in accordance with EBRD and IFC standards. The IOE will have the authority to implement appropriate mitigation measures based on an agreed protocol, including reducing the speed of the turbines or, potentially, for the turbines to be temporarily turned off should a</p>



European Best Practice Guidelines for Wind Energy Development	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
		biological value and is currently used for crop production. There are no forests or rare / sensitive plant species found within the area.	<p>migrant flock be observed to be approaching.</p> <p>Monitoring should be undertaken for 1 year and completed in accordance with the conditions of the various environmental permits and authorisations.</p> <p>The monitoring results should be sent to the appropriate authorities and will inform future monitoring and survey techniques.</p> <p>The nearest wind farm to the Vutcani site is an operational wind farm at Muntenii de Jos approximately 16km north of Vutcani commune. Given the distance between the Vutcani wind farm and the nearest operational wind farm no cumulative ecological impacts are anticipated.</p> <p>Due to their location and the lack of semi-natural habitats on the Vutcani site it is predicted that the nearby wind farm developments would not contribute towards any significant cumulative barrier effect on birds.</p>
<b>Archaeological historical heritage</b>	<ul style="list-style-type: none"> <li>The existence of listed buildings, Conservation Areas and archaeological sites may have an influence</li> </ul>	There are no buildings within the project site. Section 4.7 of the EIA Report finds that there will be no impacts on archaeological, ethnic, cultural or heritage assets.	No further action is recommended.

European Best Practice Guidelines for Wind Energy Development	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	on the acceptability of a particular site	An archaeological surveillance contract was put in place during the construction works in the event that archaeological remains were found during excavations for the foundations of the turbines and underground cabling. However no remains were found during the construction works and no archaeological work was required.	
<b>Recreational uses</b>	<ul style="list-style-type: none"> <li>Any areas on or close to the site identified in development plans for recreational use should be considered</li> </ul>	No information on recreational areas is provided in the EIA Report and it is understood that there are no recreational areas close to the site.	No further action is recommended
<b>Telecommunications</b>	<ul style="list-style-type: none"> <li>Microwave, TV, radar or radio transmissions may be affected by the presence of wind turbines. Consideration should be given to situations where this might occur</li> </ul>	Section 4.10 of the EIA Report states that the project does not affect communication systems such as microwave, TV, radar or radio transmissions.	No further action is recommended
<b>Civil and military airports</b>	<ul style="list-style-type: none"> <li>For sites close to airport, the relevant airport authority should be consulted</li> </ul>	<p>No airports are known in proximity of the site.</p> <p>Red flashing lights have been provided on top of the turbines.</p> <p>If any airports are located within approximately 60km from the development the influence on airport radar is possible.</p>	No further action is recommended.
<b>Restricted areas</b>	<ul style="list-style-type: none"> <li>There may be restrictions to be development of wind turbine projects in the proximity of security areas,</li> </ul>	There are no restricted areas within the site boundary.	No further action is recommended.

European Best Practice Guidelines for Wind Energy Development	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	such as military installation, telecommunications installations etc.		
<b>1.4 Dialogue and Consultation</b>			
<b>Initial consultations</b>	<ul style="list-style-type: none"> <li>Developers should have initial discussions with the local planning authority and statutory consultees to identify and agree potential issues which should be addressed</li> </ul>	During the construction of the wind farm, EDPR undertook a number of actions in order to raise the awareness of the local community. Local meetings with City Hall were held to provide information on the constructions activities.	No further action is recommended.
<b>2. Project Feasibility</b>			
<b>2.3 Environmental Considerations</b>			
<b>Scoping</b>	<ul style="list-style-type: none"> <li>The developer should agree the scope of the environmental assessment required by the local planning authority</li> </ul>	In accordance with Romanian National Law, a screening assessment was undertaken. It was confirmed by the screening that an EIA was not required for the Vutcani site. However, for completeness, an EIA was undertaken in accordance with national legislation.	No further action is recommended.
<b>Dialogue consultation and</b>	<ul style="list-style-type: none"> <li>The developer should open a dialogue with the local community about the project. The developer should nominate a point of contact with a telephone number and/or address</li> </ul>	<p>During the construction of the wind farm, EDPR undertook a number of actions in order to raise the awareness of the local community. Local meetings with City Hall were held to provide information on the constructions activities.</p> <p>A Stakeholder Engagement Plan will be prepared which will include a point of contact for members of the public.</p>	Further consultation as described in the SEP will be undertaken.
<b>Local planning authority</b>	<ul style="list-style-type: none"> <li>The developer should notify</li> </ul>	An urban certificate was issued to the City Hall	No further action is recommended.

European Best Practice Guidelines for Wind Energy Development	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	the local planning authority of its intention to study the feasibility of the selected site.	in respect of the project, in accordance with the legal procedure for construction development.	
<b>Local communities</b>	<ul style="list-style-type: none"> <li>The developer should work with the local planning authority to consider how the informal public consultation should be conducted and how its results should be taken into account.</li> <li>This consultation should be with non-statutory groups and individuals who have an interest in the proposed development</li> <li>Comments received from this consultation will give an indication of local views which may be useful in reappraisals of the project design</li> </ul>	<p>In Vutcani, a public debate was not required by law provisions and thus no formal public meeting was held. The local people are aware about the project through informal networks and direct contact with the employees of the commissioned firms in the construction phase (as the site visit revealed) and the general perception seems to be highly positive.</p> <p>A Stakeholder Engagement Plan will be prepared which will include a point of contact for members of the public.</p>	Further consultation with the local community is programmed during the operation to assist the local community and to understand any potential future commitments which may be required. Information on the proposed further consultation is provided in the Stakeholder Engagement Plan.
<b>3. Detailed Assessment</b>			
<b>3.3.2 Topics that could be considered in the environmental statement</b>			
<b>Site selection</b>	<ul style="list-style-type: none"> <li>Explain why the particular site under assessment has been selected</li> </ul>	<p>The site was selected following completion of a comprehensive wind survey programme. Key factors in the site selection included:</p> <ul style="list-style-type: none"> <li>Sites to be located outside of protected ecological areas; and</li> <li>Compliance with legislation relating to</li> </ul>	Mitigation measures as set out in the environmental permits should be implemented.

European Best Practice Guidelines for Wind Energy Development	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
		<p>distances from existing electrical lines, roads and residential areas.</p> <p>The layout of the wind farm and the design and choice of turbines are based on the optimum performance in terms of energy generation.</p> <p>It is understood that the turbines to be used for the Vutcani wind farm were originally Vestas V90 3.0MW, providing an overall capacity of 36MW. However the size of the turbines were reduced at a later stage in the project design to Vestas V90 2.0MW. The EIA Report for Vutcani relates to turbines of 3.0MW. There is no physical difference between these two types of turbine, only the power is limited to 2.0 MW through Vestas Scada system.</p> <p>In accordance with Governmental Decision GD 445/2009 regarding the EIA framework procedure, the Vutcani project was classified as category B insignificant environmental impact (Annex 2 of GD 445/2009).</p>	
<b>Visual and landscape assessment</b>	<ul style="list-style-type: none"> <li>Existing landscape should be described</li> <li>A Zone of Visual Influence should be defined and a map produced which indicates where the proposal may be visible from within a radius</li> </ul>	<p>The visual impacts of the proposed development have been identified as positive in the EIA report, there has been no requirement to consider measures to minimise visual impacts.</p> <p>The EIA Report does not include a zone of</p>	<p>Further assessment of visual and landscape impacts together with cumulative impacts associated with other wind farms in the local area is provided in the Supplementary Information Report.</p>

European Best Practice Guidelines for Wind Energy Development	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<p>agreed with the local planning authority</p> <ul style="list-style-type: none"> <li>Consider the proximity of proposed project to already existing wind projects and whether it will be possible to see one or more such projects from agreed viewpoints in the surrounding area. The significance of this should be assessed</li> <li>The movements of the sun should be taken into consideration – to assess the movement of the shadow of the turbine on sunny days.</li> <li>Dazzling light from rotor blades can be prevented by using an anti-reflection layer on the rotor blades</li> </ul>	<p>visual influence plan. A full assessment of visual impacts has not been presented in the EIA Report. Photomontages have been prepared.</p> <p>Therefore it has not been possible to assess the methodology used in respect of the landscape and visual impact assessment.</p> <p>It is considered that the movement of the sun is not be relevant given that there are no residential properties close enough to the project site to be affected by this.</p>	
<b>Noise assessment</b>	<ul style="list-style-type: none"> <li>The advisable distance between residences and the proposed development will depend on various factors, e.g. topography, character and level of background noise and the size of development</li> <li>Prediction of the sound produced by the proposed</li> </ul>	<p>Noise predictions were undertaken as part of the EIA for a sample of wind turbines. Predictions have been undertaken as part of the Gap Analysis. Noise levels are predicted to comply with all relevant international guidance documents.</p>	<p>Noise monitoring should be undertaken to demonstrate compliance with EHS Guidelines.</p>

European Best Practice Guidelines for Wind Energy Development	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<p>development in the surrounding area should be made and presented to the local planning authority</p> <ul style="list-style-type: none"> <li>• Key dwelling (normally the nearest in each direction) should be identified in consultation with the local planning authority from where background noise measurement should be taken.</li> <li>• A survey should be undertaken of the character and level of the background noise.</li> </ul>		
<b>Ecological assessment</b>	<ul style="list-style-type: none"> <li>• The fauna and flora that are found at the proposed site (either year round or seasonally) should be considered in relation to the loss of habitat, their sensitivity to disturbance and to their importance (based on national law or policy).</li> <li>• It is important the ecological survey work is undertaken at the appropriate time of the year to take account of the seasonal nature of some</li> </ul>	<p>Biodiversity monitoring is required for the first 12 months of operation as set out in the Environmental Authorisation.</p> <p>EDPR will appoint an IOE who will be responsible for bird monitoring and mitigation as well as bat surveys at the site.</p> <p>The site walkover visit in May 2012 recorded a number of bird species, including species listed in Annex 1 of the Birds Directive and species of significance due to the unfavourable conservation status within Europe.</p>	<p>An independent Ornithological Expert (IOE) is to be appointed by EDPR. The IOE will have responsibility for bird and bat monitoring and surveys and for the implementation of appropriate mitigation measures as required. periods, should it be required. Specially designed nest boxes for birds should be installed in appropriate locations on the poles along the overhead power line grid connection.</p> <p>The power lines should be fitted with bird deflectors.</p>

European Best Practice Guidelines for Wind Energy Development	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<p>potential impacts.</p> <ul style="list-style-type: none"> <li>Developer should meet with the local planning authority and relevant consultees to discuss the timing of the construction and amendment of the wind turbine positions to avoid important species or habitats.</li> <li>There may be requirement for on-going monitoring or an overall Environmental Management Plan for the construction period or for a defined number of years post-construction, this should be discussed with the local planning authority and relevant consultees.</li> <li>A well designed project should not result in loss of valuable habitat or adverse impact on protected species</li> </ul>		<p>The monitoring activities to be undertaken by the IOE will include:</p> <ul style="list-style-type: none"> <li>Vantage point and mortality surveys. The frequency of the surveys, seasons in which they are carried out and the methods used should be those which are established and recognised as providing valid data (such as those set out in Scottish Natural Heritage 2010)</li> <li>The IOE should monitor continuously the vicinity of each turbine to identify any bird and bat carcasses present as a result of collisions with the turbines and these will be reported immediately so that corrective and preventative measures can be taken. Should bat carcasses be found it may be necessary to carry out bat activity surveys across the site during the spring, summer and autumn to determine if activity is taking place in certain areas or at certain times of the year.</li> <li>The results of vantage point and mortality monitoring should be recorded and reported to SOR.</li> </ul>
<b>Archaeological and historical assessment</b>	<ul style="list-style-type: none"> <li>The physical impact of the proposal and the effect on</li> </ul>	There are no buildings within the project site. Section 4.7 of the EIA Report finds that there	No further action is recommended.



European Best Practice Guidelines for Wind Energy Development	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<p>setting should be examined.</p> <ul style="list-style-type: none"> <li>Mitigating measures should be discussed with the local planning authority and relevant consultees.</li> </ul>	<p>will be no impacts on archaeological, ethnic, cultural or heritage assets.</p> <p>An archaeological surveillance contract was put in place during the construction works in the event that archaeological remains were found during excavations for the foundations of the turbines and underground cabling. However no remains were found during the construction works and no archaeological work was required.</p>	
<b>Hydrological assessment</b>	<ul style="list-style-type: none"> <li>An assessment of the impact of the proposed development on water courses, their quality and quantity may be necessary.</li> <li>An assessment of spring water supplies should be undertaken where appropriate</li> </ul>	<p>There are no hydrological networks on the site. The closest water feature is Lake Idrici (1.5km from the site).</p>	<p>No further action is recommended.</p>
<b>Interference with telecommunications systems</b>	<ul style="list-style-type: none"> <li>Communication system users should be approached for their views.</li> <li>Technical solutions should be considered if required.</li> </ul>	<p>Section 4.10 of the EIA Report states that the project does not affect communication systems such as microwave, TV, radar or radio transmissions.</p>	<p>No further action is recommended</p>
<b>Aircraft safety</b>	<ul style="list-style-type: none"> <li>Wind energy projects need to be sited so as not to cause a hazard to aircraft safety through any effects on radar systems or low flying aircraft.</li> </ul>	<p>No airports are known within close proximity of the site.</p> <p>Red flashing lights have been provided on top of the turbines.</p>	<p>No further action is recommended.</p>

European Best Practice Guidelines for Wind Energy Development	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<ul style="list-style-type: none"> <li>The civil and military authorities must be consulted.</li> </ul>	<p>If any airports are located within approximately 60km from the development an influence on airport radar is possible.</p>	
<b>Safety assessment</b>	<ul style="list-style-type: none"> <li>A safety assessment should be made to consider the structural integrity of the wind turbines intended for use on the site.</li> <li>Other issues which may be considered include highway safety and shadow flicker</li> </ul>	<p>The distance to the closest residence is more than 500m from the site</p> <p>The wind turbines will be provided with appropriate technical systems, such as imbalance detection and shut down system, to minimise the risks associated with blade / ice throw.</p> <p>Appropriate warning signs relating to the risk of blade / ice throw will be provided at least 150m from the turbines in all directions.</p> <p>The access roads around the wind farm will need to be properly marked for use during the night-time.</p>	No further action is recommended
<b>Traffic management and construction</b>	<ul style="list-style-type: none"> <li>The impacts of construction (including access roads) should be assessed as part of the visual, ecological, hydrological and archaeological assessments.</li> <li>Any road improvement needed to accommodate the development should be discussed and agreed with the local authority.</li> </ul>	<p>As part of the construction works some roads local to the site were upgraded in order to accommodate heavy vehicle movements associated with transportation of the turbine components and underground and overhead powerlines during construction.</p>	No further action is recommended.

European Best Practice Guidelines for Wind Energy Development	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
<b>Electrical connection</b>	<ul style="list-style-type: none"> <li>Careful account should be taken of the potential impacts on the environment and on land use and appropriate measures taken to avoid unnecessary adverse impacts during installation of electrical cables.</li> <li>Details of the electrical connection (overhead or underground) should be examined as part of the assessment.</li> </ul>	<p>The EIA report does not include consideration of environmental impacts associated with the connection to the national grid, including overhead transmission lines and associated infrastructure.</p> <p>The required permits have been issued in respect of the electrical connection for the wind farm. It is noted that approximately 600m of overhead transmission lines and three pylons are located within the Deniz Tepe SPA. A permit has been issued by EcoPontica and the SOR with appropriate conditions and mitigation measures which are in the process of being implemented.</p>	No further action is recommended.
<b>Effects on the local economy</b>	<ul style="list-style-type: none"> <li>The environmental statement may include an estimate of the number of temporary and permanent jobs created and the value of the contracts available locally</li> </ul>	<p>The EIA Report has considered the potential impact of the proposed development on the existing environment, community and socio-economic conditions. The EIA Report states that there will be positive impacts on the local economy through the creation of jobs and the indirect impact from increased visitors spending in the area.</p>	Where possible the local workforce should be used for non-specialist tasks. Vocational training / education should be undertaken where practicable during construction.
<b>Global environmental effects</b>	<ul style="list-style-type: none"> <li>The environmental statement should include estimates of the amount of electricity the wind energy project will produce and the quantity of polluting emissions that would be produced from a</li> </ul>	<p>The wind farm is expected to have an annual generation of 56,000 KWh.</p> <p>No comparative assessment has been done against the emissions from a conventional power station.</p>	No further action is recommended.

European Best Practice Guidelines for Wind Energy Development	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	conventional power station producing the equivalent power.	Energy production from coal creates: <ul style="list-style-type: none"> <li>- 700 ton CO<sub>2</sub>/GWh</li> <li>- 3 ton SO<sub>2</sub>/GWh</li> <li>- 2.6 ton Nox/GWh)</li> </ul>	
<b>Tourism and recreational effects</b>	<ul style="list-style-type: none"> <li>• Public rights of way within the site should be identified.</li> <li>• Visitor facilities, if appropriate, should be discussed with the local authority and relevant consultees</li> <li>• Existing nearby tourist and recreational facilities should be identified</li> </ul>	<p>Areas around the wind farm are accessible by local residents for continued agricultural use. Access roads through the wind farm are available for use by local residents.</p> <p>There are no recreational areas at the site or nearby.</p>	No further action is recommended.
<b>Decommissioning</b>	<ul style="list-style-type: none"> <li>• The assessment should cover decommissioning of the wind energy project.</li> <li>• Consideration should be given to restoration measures including the removal of above ground equipment, landscaping the foundations and whether tracks or roads will re-seed naturally or require additional treatment</li> </ul>	<p>The EIA Report states that the wind turbines will be easily dismantled and removed because the construction is modular. Many of the resulting materials (such as steel, aluminium, lead, copper etc.) can be reused or recycled.</p> <p>A site restoration plan will be implemented during decommissioning to ensure that suitable control measures are implemented to avoid or minimise environmental impacts (such as noise, dust and potential spillage of oils).</p>	A decommissioning plan should be prepared.
<b>5. Construction</b>			
<b>5.3 Environmental Considerations</b>			
	<ul style="list-style-type: none"> <li>• Areas of construction work</li> </ul>	The environmental authorisation has been	No further action is recommended

European Best Practice Guidelines for Wind Energy Development	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	on-site should be delineated in consultation with the local planning authority and measures taken to avoid unnecessary impacts, such as vehicle use, on areas outside the defined working boundary	obtained and the wind farm is operational.	
	<ul style="list-style-type: none"> <li>If the environmental assessment has identified areas of ecological or archaeological importance a record of pre-construction site conditions should be made. Such areas should be notified to the contractors to avoid damage.</li> </ul>	<p>The environmental authorisation has been obtained and the wind farm is operational.</p> <p>Biodiversity monitoring is required for the first 12 months of operation of the wind farm and recommendations for further monitoring are made in the Supplementary Information Report.</p> <p>No areas of archaeological importance have been identified on the site.</p>	Further ecological monitoring is required as detailed in the Supplementary Information Report.
	<ul style="list-style-type: none"> <li>Due regard should be given to the safety of those using public rights of way.</li> </ul>	<p>There are no public rights of way at the site or nearby.</p> <p>Access roads through the wind farm are available for use by local residents.</p>	No further action is recommended
	<ul style="list-style-type: none"> <li>Developer should ensure that on-site and off-site works are undertaken with minimal disruption to the local residents.</li> <li>Any information board should</li> </ul>	A Stakeholder Engagement Plan has been prepared which includes a point of contact for member of the public. This person will be responsible for discussing problems with any representative of the community interested in raising concerns and the City Hall will have the	No further action is recommended

European Best Practice Guidelines for Wind Energy Development	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<p>be displayed in a publicly accessible location at all time giving the name and number of the developer's representative or other contact.</p> <ul style="list-style-type: none"> <li>• Consideration should be given to the formation of a community liaison group.</li> <li>• Developer should establish a programme of emergency procedures for 24 hour support in case of unforeseen problems. These procedures should be registered with the local emergency services and the local planning authority and noted on the site information board.</li> </ul>	name of this person and the contact details.	
<b>6. Operation</b>			
<b>6.2 Environmental Considerations</b>			
	<ul style="list-style-type: none"> <li>• Potential issues relate to effects on human activities and site flora and fauna.</li> </ul>	Avifauna monitoring (for birds and bats) is to be undertaken during operation in accordance with the Environmental and Social Action Plan.	An Environmental and Social Action Plan has been prepared and will be implemented.
	<ul style="list-style-type: none"> <li>• The owner/operator should have a formal procedure for recording and dealing with complaints from the public.</li> </ul>	A Stakeholder Engagement Plan has been prepared which includes a point of contact for member of the public. This person will be responsible for discussing problems with any	The Stakeholder Engagement Plan has been prepared and made available to the general public.

European Best Practice Guidelines for Wind Energy Development	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<ul style="list-style-type: none"> <li>The owner/operator should investigate any complaints and work with the authorities to address issues raised.</li> </ul>	<p>representative of the community interested in raising concerns and the City Hall will have the name of this person and the contact details.</p>	
	<ul style="list-style-type: none"> <li>Wildlife disturbance is most likely to become apparent as a result of specific studies carried out by the owner/operator.</li> <li>These studies would normally come about from undertakings made during the planning process although there may be instances where concerns are raised by individuals after the facility has been built leading to such studies.</li> <li>If it should come apparent that there is a significant ecological impact the owner/operator should co-operate with individuals concerned and the statutory and voluntary conservation bodies to determine the nature of the problem and to work towards a solution.</li> </ul>	<p>Based on a review of the EIA Report it is not clear whether any site specific ecological surveys have been undertaken, so the significance of disturbance effects (and what needs to be done to mitigate against them) cannot be assessed.</p> <p>Avifauna monitoring is to be undertaken during the operational phase in accordance with the requirements of the Environmental Authorisation.</p> <p>In addition, an Environmental and Social Action Plan has been prepared for the wind farm.</p>	<p>The Environmental Monitoring Plan and Environmental and Social Action Plan have been prepared and will be implemented.</p>
<b>Dialogue and consultation</b>	<ul style="list-style-type: none"> <li>An owner/operator has a responsibility as a member of</li> </ul>	<p>A Stakeholder Engagement Plan will be prepared which will include a point of contact</p>	<p>The Stakeholder Engagement Plan has been prepared and will be made available</p>

European Best Practice Guidelines for Wind Energy Development	High Level Requirement	Review of Project Information / Comments Compliance	Recommendation
	<p>the community to allow local individuals to raise any concerns they may have about operation of the project.</p> <ul style="list-style-type: none"> <li>• The owner/operator should have a local representative to whom individuals can voice their concerns.</li> <li>• The owner/operator should make themselves easily accessible to local people within the community through a variety of methods.</li> <li>• Following commissioning an owner/operator should operate a good neighbour policy and encourage a greater understanding of wind energy within the local communities.</li> </ul>	<p>for member of the public. This person will be responsible for discussing problems with any representative of the community interested in raising concerns and the City Hall will have the name of this person and the contact details.</p>	<p>to the general public.</p>
<b>7. Decommissioning</b>			
<b>No specific environmental considerations</b>			

Source documents: IFC Environmental, Health and Safety (EHS) Guidelines Wind Energy (April 30, 2007)  
 IFC General Environmental, Health and Safety (EHS) General Guidelines (April 30, 2007)  
 European Best Practice Guidelines for Wind Energy Development (2002)



**Table 3 EU EIA Directive and Romanian EIA Legislation Requirements – Sarichioi**

Item	Information Requirements set out in Directive 97/11/EC	Requirements of Romanian Legislation on EIA (GD 445/2009; MO 860/2002; MO 863/2002)	Have the Requirements been Adequately Addressed?	What Further Information is Needed?
<b>Section 1 Description of the Project</b>	<ul style="list-style-type: none"> <li>• Description of the physical characteristics of the whole project and land use requirements during construction and operation</li> <li>• Description of the main characteristics of the production processes, e.g. nature and quantity of materials used</li> <li>• Estimate, by type and quantity, of expected residues and emissions (water, air and soil pollution, noise, vibration, light, heat radiation etc.) resulting from the operation of the project</li> </ul>	<ul style="list-style-type: none"> <li>- project description and stages</li> <li>- functioning period</li> <li>- info on physical and biological pollutants; description of the alternatives; location; existing documents / regulations on land use planning, connections to existing infrastructure</li> <li>- description of technological processes, techniques and equipments, alternatives;</li> <li>- limit values for the techniques proposed and achieved through the BAT</li> <li>- subject;</li> <li>- technologies for decommissioning;</li> <li>- equipments and protection conditions</li> </ul>	<p>The EIA Report includes a description of the physical characteristics of the Projects (including technical information relating to the wind turbines and wind conditions), construction activities and likely emissions or pollutants, where appropriate.</p> <p>It should be noted that further detail relating to the operation of the wind farms has become available since completion of the EIA Report in 2009. Examples include the continuous presence of security personnel at the site and details of associated welfare facilities as well as security arrangements (e.g. fencing around transformer station and the internal areas of turbines not being accessible).</p>	<p>The EIA Report does not include consideration of the environmental effects associated with transmission lines required for each of the wind farms.</p> <p>Further information in respect of the environmental effects of the transmission lines (including on visual amenity and ecology) is provided in the Supplementary Information Report.</p>

Item	Information Requirements set out in Directive 97/11/EC	Requirements of Romanian Legislation on EIA (GD 445/2009; MO 860/2002; MO 863/2002)	Have the Requirements been Adequately Addressed?	What Further Information is Needed?
<b>Section 2 Consideration of Alternatives</b>	<ul style="list-style-type: none"> <li>• Outline of the main alternatives studied by the developer</li> <li>• Indication of the main reasons for this choice, taking into account the environmental effects</li> </ul>	<ul style="list-style-type: none"> <li>- description of alternatives;</li> <li>- analysis of the impact, duration, reversibility, viability and efficiency of mitigation measures for each alternative and for each environmental aspect</li> </ul>	<p>Based on discussions with EDPR, it is understood that the site was selected after a comprehensive wind survey programme had been undertaken to identify suitable locations for wind farm developments in the region.</p> <p>The layout of the wind farms was developed by specialist consultants. The designs and choice of turbines are based on optimum performance in terms of energy generation.</p> <p>Section 1.4.9 of the EIA report includes a discussion on the consideration of alternatives, although this is restricted to alternative methods of generating electricity, i.e. using fossil fuels, photovoltaic cells and wind turbines. The EIA report does not explore alternative sites for the development.</p> <p>It is understood that the Sarichioi wind farm was originally proposed to comprise 20 wind turbines but this was subsequently reduced through discussions with the Environmental Protection Agency (EPA) in Tulcea and this wind farm now contains 11 wind turbines. One of the wind turbines is located within a designated ecological site (Dealurile</p>	<p>No further information relating to alternatives is required.</p>

Item	Information Requirements set out in Directive 97/11/EC	Requirements of Romanian Legislation on EIA (GD 445/2009; MO 860/2002; MO 863/2002)	Have the Requirements been Adequately Addressed?	What Further Information is Needed?
			<p>Agighiolului, Agighiol Hills Site of Community Importance, SCI) and was agreed during consultation with the EPA in March 2009.</p> <p>During construction of the overhead transmission lines required to serve the wind farm it was necessary to make some changes from a technical perspective and the locations of three pylons (an area of 0.1ha) were revised such that they are located on agricultural land within the Deniz Tepe Special Protection Area (SPA), together with approximately 600m of overhead transmission line. Consultation was held with Tulcea EPA, the SOR and EcoPontica regarding this change and a permit was obtained, requiring the implementation of bird monitoring and certain mitigation measures to deter bird species from the wind farm.</p> <p>The discussion of alternatives presented in the EIA report is limited. However, discussions with EDPR have confirmed that alternative sites and layouts have been considered.</p>	
<b>Section 3 Description of</b>	<ul style="list-style-type: none"> <li>Description of the likely significant effects of</li> </ul>	Water management: - hydrogeological status of	Information on the current land use, cultural heritage, geological conditions and	Additional information on the existing environment is included

Item	Information Requirements set out in Directive 97/11/EC	Requirements of Romanian Legislation on EIA (GD 445/2009; MO 860/2002; MO 863/2002)	Have the Requirements been Adequately Addressed?	What Further Information is Needed?
<b>Environment Likely to be Affected by the Project</b>	the proposed project, including in particular: - population, fauna, flora, soil, water, air, climatic factors, material assets, including the architectural and archaeological heritage, landscape and the inter-relationship between the above factors	<p>the site</p> <p>Air:</p> <ul style="list-style-type: none"> <li>- general data</li> </ul> <p>Noise and vibration:</p> <ul style="list-style-type: none"> <li>- general data</li> </ul> <p>Shadow effect:</p> <ul style="list-style-type: none"> <li>- general data</li> </ul> <p>Soil and geology:</p> <ul style="list-style-type: none"> <li>- Baseline</li> </ul> <p>Biodiversity:</p> <ul style="list-style-type: none"> <li>- biotopes on the site;</li> <li>- info on local flora;</li> <li>- habitats included in the Red Book;</li> <li>- info on local fauna;</li> <li>- migration routes;</li> <li>- info on local species of mushrooms</li> </ul> <p>Landscape:</p> <ul style="list-style-type: none"> <li>- baseline info</li> <li>- characteristics and geomorphology on the</li> </ul>	<p>protected areas is provided in the EIA Report.</p> <p>This is based on desk study and does not include site surveys undertaken as part of the EIA or site specific data relating to the baseline environmental conditions at the site. Baseline data is given although no data relating to site-specific surveys for birds or bats is provided. An intrusive site investigation has been completed to confirm geological conditions beneath the site although these details are not incorporated into the EIA Report.</p> <p>Monitoring to be undertaken during operation includes avifauna and bat monitoring and searches for bird and bat carcasses and noise monitoring.</p>	<p>in the Supplementary Information Report.</p> <p>EDP will appoint an Independent Ornithologist Expert (IOE) to undertake monitoring of avifauna at the site during operation to increase the current understanding of the ecological value of the site for avifauna. The IOE will also be responsible for instigating appropriate mitigation measures as required.</p>

Item	Information Requirements set out in Directive 97/11/EC	Requirements of Romanian Legislation on EIA (GD 445/2009; MO 860/2002; MO 863/2002)	Have the Requirements been Adequately Addressed?	What Further Information is Needed?
		<p>site</p> <ul style="list-style-type: none"> <li>- forest zones in the site area</li> </ul> <p>Socio and economic management:</p> <ul style="list-style-type: none"> <li>- potential impact on demographical / local population characteristics</li> <li>- number of inhabitants in the area, changes of populations</li> <li>- impact on local economical conditions</li> <li>- potentially dissatisfied public on project commissioning</li> <li>- info on public health</li> </ul> <p>Cultural and ethnical conditions, cultural heritage:</p> <p>Risk situations:</p> <ul style="list-style-type: none"> <li>- natural hazards</li> </ul>		
<b>Section 4</b> <b>Description of the Likely</b>	Description of the likely significant effects of the proposed project on the	Including transboundary effects	The EIA Report includes a discussion of the potentially significant effects on water, air quality, soil, geology, biodiversity,	Further information on ecology (including the results of the monitoring undertaken between

Item	Information Requirements set out in Directive 97/11/EC	Requirements of Romanian Legislation on EIA (GD 445/2009; MO 860/2002; MO 863/2002)	Have the Requirements been Adequately Addressed?	What Further Information is Needed?
<b>Significant Effects of the Project</b>	<p>environment resulting from:</p> <ul style="list-style-type: none"> <li>- the existence of the project</li> <li>- the use of natural resources</li> <li>- the emission of pollutants, the creation of nuisances and the elimination of waste</li> </ul> <p>Description of the forecasting methods used to assess the effects on the environment</p>	<p>Water management:</p> <ul style="list-style-type: none"> <li>- water supply;</li> <li>- wastewater management;</li> <li>- impact prognosis</li> </ul> <p>Air:</p> <ul style="list-style-type: none"> <li>- generated pollutants and air pollution sources</li> <li>- air pollution prognosis</li> </ul> <p>Noise and vibration:</p> <ul style="list-style-type: none"> <li>- noise and vibration sources</li> <li>- impact prognosis</li> </ul> <p>Shadow effect:</p> <ul style="list-style-type: none"> <li>- shadow sources</li> <li>- impact prognosis</li> </ul> <p>Soil and geology:</p> <ul style="list-style-type: none"> <li>- soil pollution sources</li> <li>- impact prognosis</li> </ul> <p>Biodiversity:</p> <ul style="list-style-type: none"> <li>- impact prognosis</li> </ul>	<p>landscape, social and economic conditions and cultural heritage during construction, operation and decommissioning phases.</p> <p>The discussion of impacts on biodiversity includes consideration of the potential effects of wind turbines on avifauna and bird migratory routes but impacts on other species (such as bats) are not discussed.</p> <p>Bird monitoring was undertaken at the Sarichioi site during construction (between April and September, and September to December 2011). No dead birds were recorded on the site during the monitoring. Further monitoring has been ongoing at the Sarichioi site since March 2012 when the wind farm became operational, in accordance with the EcoPontica Permit, the requirements of the permit issued by ABRDD and Environmental Authorisation issued by Tulcea EPA for the site.</p> <p>In addition, video cameras have been installed in meteorological tower and substation and these are controlled from a computer installed in the substation building.</p> <p>The EIA Report does not describe the approach or methodologies that have</p>	<p>April and December 2011), landscape and visual impacts is included in the Supplementary Information Report.</p> <p>The monitoring and surveys to be completed by the IOE, including breeding, wintering and migratory bird surveys and vantage point bird surveys, will be undertaken for 5 years.</p> <p>Details of the proposed monitoring measures and programme are provided in the Supplementary Information Report and the Environmental and Social Action Plan (ESAP).</p>

Item	Information Requirements set out in Directive 97/11/EC	Requirements of Romanian Legislation on EIA (GD 445/2009; MO 860/2002; MO 863/2002)	Have the Requirements been Adequately Addressed?	What Further Information is Needed?
		<p>Landscape:</p> <ul style="list-style-type: none"> <li>- impact prognosis</li> </ul> <p>Socio and economic management:</p> <ul style="list-style-type: none"> <li>- potential impact on life conditions</li> </ul> <p>Cultural and ethnical conditions, cultural heritage.</p> <p>Risk situations:</p> <ul style="list-style-type: none"> <li>- natural hazards</li> <li>- potential accidents</li> <li>- potential industrial accidents with significant impact, including transboundary negative significant impact</li> <li>- risk situations plans</li> <li>- accidents prevention measures</li> </ul>	<p>been used in the impact assessment. In addition the conclusions reached do not specify the significance of likely effects in accordance with clearly defined significance criteria. These deficiencies are particularly evident in respect of landscape and visual effects and effects on birds and bats which may experience significant effects as a result of the wind farms. These issues have, however, been addressed in the Supplementary Information Report that has been produced.</p> <p>No assessment of potential cumulative environmental effects associated with other projects in the local area (including other wind farm developments) is included in the EIA Report. This is particularly relevant in view of the proximity of the sites to protected areas and known bird migration routes and in respect of similar projects which will reduce the amount of airspace available for use by birds and bats. Again, this has been addressed in the Supplementary Information Report that has been produced.</p> <p>A Construction Environmental Management Plan (CEMP) was implemented for each Project to manage</p>	

Item	Information Requirements set out in Directive 97/11/EC	Requirements of Romanian Legislation on EIA (GD 445/2009; MO 860/2002; MO 863/2002)	Have the Requirements been Adequately Addressed?	What Further Information is Needed?
			<p>environmental effects during the construction works and environmental monitoring visits were undertaken during construction, approximately every two weeks, with the site visit findings being presented in a separate report.</p> <p>The Environmental Agreement for the Project requires that that supplementary monitoring is undertaken for at five years following commissioning to quantify the impact on flora, habitats and avifauna, the results are to be submitted to the EPA every three months.</p>	
<b>Section 5 Description of Mitigation</b>	Description of the measures envisaged to prevent, reduce and where possible offset any significant adverse effects on the environment	<p>Mitigation measures to be adopted in respect of:</p> <ul style="list-style-type: none"> <li>- Water management:</li> <li>- Air</li> <li>- Noise and vibration</li> <li>- Shadow effect:</li> <li>- Soil and geology</li> <li>- Biodiversity</li> <li>- Landscape</li> <li>- Socio and economic management</li> <li>- Cultural and ethnical conditions, cultural</li> </ul>	<p>Mitigation measures to be implemented during construction, operation and decommissioning phases are discussed in outline in the EIA Reports. EDPR has confirmed that the mitigation measures required are in the process of being implemented.</p> <p>In terms of the mitigation measures identified by EcoPontica and in the Environmental Agreement these measures are in the process of being implemented at the time of compiling this report. Mitigation measures which have been implemented to date by EDPR include installation of artificial nesting platforms for</p>	<p>Further mitigation measures are required in respect of potential effects on avifauna. These are detailed in the Supplementary Information Report and include:</p> <ul style="list-style-type: none"> <li>• Appointment of an IOE (it is understood that an IOE has been appointed)</li> <li>• Additional monitoring and surveys in respect of avifauna</li> <li>• A Collision Risk Assessment</li> <li>• Development and implementation by the IOE of a detailed shut down</li> </ul>



Item	Information Requirements set out in Directive 97/11/EC	Requirements of Romanian Legislation on EIA (GD 445/2009; MO 860/2002; MO 863/2002)	Have the Requirements been Adequately Addressed?	What Further Information is Needed?
		<p>heritage</p> <ul style="list-style-type: none"> <li>- Risk situations</li> </ul> <p>Monitoring requirements:</p> <ul style="list-style-type: none"> <li>- environmental components to be monitored</li> <li>- monitoring period and frequency</li> <li>- monitoring parameters</li> </ul>	<p>Saker falcon on each pole and near high voltage overhead lines within the Deniz Tepe SPA, installation of flashing beacons on the turbines and painting of the turbine blades. These measures will be implanted on a phased basis as the project progresses.</p> <p>Some monitoring is recommended in the EIA Reports although this relates mainly to operation of the turbines rather than environmental monitoring to determine changes in baseline conditions or to identify the effectiveness of mitigation measures which have been implemented.</p> <p>Discussions with EDPR have confirmed that noise and ecological monitoring will be undertaken during operation.</p>	<p>procedure for the wind farm in accordance with EBRD and IFC standards.</p> <ul style="list-style-type: none"> <li>• The IOE having the authority to implement appropriate mitigation measures based on an agreed protocol, including reducing the speed of the turbines or, potentially, for the turbines to be temporarily turned off should a migrant flock be observed to be approaching either site</li> <li>• Marking overhead powerlines with bird deflectors to increase visibility.</li> </ul>
<b>Section 6 Non-Technical Summary</b>	A non-technical summary of the information provided under the above headings	A non-technical summary is to be provided	<p>A non-technical summary has been prepared as part of the EIA Report.</p> <p>The non-technical summary is incomplete such as in respect of landscape and ecology and cumulative effects, and not easily understood by a lay person.</p>	A separate Non-Technical Summary has also been prepared for the Project as part of the gap analysis and due diligence.
<b>Indication of Any Difficulties Encountered in Compiling the</b>	An indication of any difficulties (technical deficiencies or lack of know-how) encountered	Difficulties encountered during the EIA development	The EIA Report does not identify any limitations relating to the data or assessment methodologies that have been used.	Further information on landscape and visual effects and potential cumulative ecological effects due to the

Item	Information Requirements set out in Directive 97/11/EC	Requirements of Romanian Legislation on EIA (GD 445/2009; MO 860/2002; MO 863/2002)	Have the Requirements been Adequately Addressed?	What Further Information is Needed?
Information	by the developer in compiling the required information		As identified above there are some deficiencies in the data which are presented in the EIA Report in respect of ecology, landscape and visual effects and cumulative effects.	effects of the Projects together with other wind farms nearby is provided in the Supplementary Information Report.
<b>Section 7 Quality of Presentation</b>	<p>Is the document logically organised and clearly structured?</p> <p>Is there a clear description of the process which has been followed?</p> <p>Is there effective use of tables, figures, maps, photographs and other graphics?</p> <p>Are all analyses and conclusions adequately supported with data and evidence?</p> <p>Are all sources of data properly referenced?</p> <p>Is consistent terminology used throughout the documents?</p>	No specific requirements relating to EIA Report presentation	<p>The EIA Report is clearly presented and contains technical information relating to the equipment associated with the wind farms (Sections 1 and 2 of the EIA Report). Various technical data are provided, together with photographs, drawings and diagrams.</p> <p>Some of the findings of the EIA Report are not adequately supported by site-specific information, such as relating to the conclusion that there will be a positive landscape and visual effect. In addition, a significant amount of information within the EIA report relates to a larger area (such as county or regional level) than the site itself which is indicative of the lack of site-specific data.</p>	<p>Further information on landscape and visual effects and potential cumulative ecological effects due to the effects of the Projects together with other wind farms nearby is provided in the Supplementary Information Report.</p> <p>In addition, the results of further monitoring and surveys (as identified in the Supplementary Information Report) will confirm the assessment of significance of residual effects.</p>
<b>Others e.g. consultation with the public, authorities and other</b>	None specified in EIA Review Checklist	- including public proposals and minutes from the public debate	In accordance with the requirements of National legislation public announcements were made in the media regarding the request for the Environmental Agreement, the commencement of the EIA studies and	Although not a specific requirement of the Environmental Agreements that have been issued for the Projects, in accordance with the

Item	Information Requirements set out in Directive 97/11/EC	Requirements of Romanian Legislation on EIA (GD 445/2009; MO 860/2002; MO 863/2002)	Have the Requirements been Adequately Addressed?	What Further Information is Needed?
stakeholders			regarding the issue of the Environmental Agreement and a Public Debate on the EIA was held in Sarichioi.	<p>Equator Principles (Principle 6) further additional public consultation will be undertaken.</p> <p>The programme and format of this is outlined in the Stakeholder Engagement Plan (SEP) that has been produced for the project.</p> <p>The SEP is available to the public and also outlines the grievance mechanism that has been implemented for the project.</p>

Source documents: Council Directive 97/11/EC of 3 March 1997 amending Directive 85/337/EEC of 27 June 1985 on the assessment of the effects of certain public and private projects on the environment  
Romanian legislation relating to EIA: Governmental Decision 445/2009; Ministerial Orders 860/2002, 863/2002 and 135/2010  
European Commission Guidance on EIA, EIS Review (June 2001)

**Table 3 EU EIA Directive and Romanian EIA Legislation Requirements – Vutcani**

Item	Information Requirements set out in Directive 97/11/EC	Requirements of Romanian Legislation on EIA (GD 445/2009; MO 860/2002; MO 863/2002)	Have the Requirements been Adequately Addressed?	What Further Information is Needed?
<b>Section 1 Description of the Project</b>	<ul style="list-style-type: none"> <li>• Description of the physical characteristics of the whole project and land use requirements during construction and operation</li> <li>• Description of the main characteristics of the production processes, e.g. nature and quantity of materials used</li> <li>• Estimate, by type and quantity, of expected residues and emissions (water, air and soil pollution, noise, vibration, light, heat radiation etc.) resulting from the operation of the project</li> </ul>	<ul style="list-style-type: none"> <li>- project description and stages</li> <li>- functioning period</li> <li>- info on physical and biological pollutants; description of the alternatives; location; existing documents / regulations on land use planning, connections to existing infrastructure</li> <li>- description of technological processes, techniques and equipments, alternatives;</li> <li>- limit values for the techniques proposed and achieved through the BAT</li> <li>- subject;</li> <li>- technologies for decommissioning;</li> <li>- equipments and protection conditions</li> </ul>	<p>The EIA Report includes a description of the physical characteristics of the Project (including technical information relating to the wind turbines and wind conditions), construction activities and likely emissions or pollutants, where appropriate.</p> <p>It should be noted that further detail relating to the operation of the wind farm has become available since completion of the EIA Report in 2009. Examples include the continuous presence of security personnel at the site and details of associated welfare facilities as well as security arrangements (e.g. fencing around transformer station and the internal areas of turbines not being accessible).</p>	<p>The EIA Report does not include consideration of the environmental effects associated with transmission lines required for the wind farm.</p> <p>Further information in respect of the environmental effects of the transmission lines (including on visual amenity and ecology) is provided in the Supplementary Information Report.</p>

Item	Information Requirements set out in Directive 97/11/EC	Requirements of Romanian Legislation on EIA (GD 445/2009; MO 860/2002; MO 863/2002)	Have the Requirements been Adequately Addressed?	What Further Information is Needed?
<b>Section 2 Consideration of Alternatives</b>	<ul style="list-style-type: none"> <li>Outline of the main alternatives studied by the developer</li> <li>Indication of the main reasons for this choice, taking into account the environmental effects</li> </ul>	<ul style="list-style-type: none"> <li>- description of alternatives;</li> <li>- analysis of the impact, duration, reversibility, viability and efficiency of mitigation measures for each alternative and for each environmental aspect</li> </ul>	<p>Based on discussions with EDPR, it is understood that the site was selected after a comprehensive wind survey programme had been undertaken to identify suitable locations for wind farm developments in the region.</p> <p>The discussion of alternatives presented in the EIA report is limited. However it does explore the 'do nothing' alternative. Discussions with EDPR have confirmed that alternative sites and layouts have been considered.</p>	No further information relating to alternatives is required.
<b>Section 3 Description of Environment Likely to be Affected by the Project</b>	<ul style="list-style-type: none"> <li>Description of the likely significant effects of the proposed project, including in particular: <ul style="list-style-type: none"> <li>- population, fauna, flora, soil, water, air, climatic factors, material assets, including the architectural and archaeological heritage, landscape and the inter-relationship between the above factors</li> </ul> </li> </ul>	<p>Water management:</p> <ul style="list-style-type: none"> <li>- hydrogeological status of the site</li> </ul> <p>Air:</p> <ul style="list-style-type: none"> <li>- general data</li> </ul> <p>Noise and vibration:</p> <ul style="list-style-type: none"> <li>- general data</li> </ul> <p>Shadow effect:</p> <ul style="list-style-type: none"> <li>- general data</li> </ul> <p>Soil and geology:</p> <ul style="list-style-type: none"> <li>- Baseline</li> </ul> <p>Biodiversity:</p>	<p>Information on the current land use, cultural heritage, geological conditions and protected areas is provided in the EIA Report.</p> <p>This is based on desk study and does not include site surveys undertaken as part of the EIA or site specific data relating to the baseline environmental conditions at the site. Baseline data is given although no data relating to site-specific surveys for birds or bats is provided. An intrusive site investigation has been completed to confirm geological conditions beneath the site although these details are not incorporated into the EIA Report.</p>	<p>Additional information on the existing environment is included in the Supplementary Information Report.</p> <p>EDP will appoint an Independent Ornithologist Expert (IOE) to undertake monitoring of avifauna at the site during operation to increase the current understanding of the ecological value of the site for avifauna. The IOE will also be responsible for instigating appropriate mitigation measures as required.</p>

Item	Information Requirements set out in Directive 97/11/EC	Requirements of Romanian Legislation on EIA (GD 445/2009; MO 860/2002; MO 863/2002)	Have the Requirements been Adequately Addressed?	What Further Information is Needed?
		<ul style="list-style-type: none"> <li>- biotopes on the site;</li> <li>- info on local flora;</li> <li>- habitats included in the Red Book;</li> <li>- info on local fauna;</li> <li>- migration routes;</li> <li>- info on local species of mushrooms</li> </ul> <p>Landscape:</p> <ul style="list-style-type: none"> <li>- baseline info</li> <li>- characteristics and geomorphology on the site</li> <li>- forest zones in the site area</li> </ul> <p>Socio and economic management:</p> <ul style="list-style-type: none"> <li>- potential impact on demographical / local population characteristics</li> <li>- number of inhabitants in the area, changes of populations</li> <li>- impact on local</li> </ul>	Monitoring to be undertaken during operation includes avifauna and bat monitoring and searches for bird and bat carcasses and noise monitoring.	

Item	Information Requirements set out in Directive 97/11/EC	Requirements of Romanian Legislation on EIA (GD 445/2009; MO 860/2002; MO 863/2002)	Have the Requirements been Adequately Addressed?	What Further Information is Needed?
		<p>economical conditions</p> <ul style="list-style-type: none"> <li>- potentially dissatisfied public on project commissioning</li> <li>- info on public health</li> </ul> <p>Cultural and ethnical conditions, cultural heritage:</p> <p>Risk situations:</p> <ul style="list-style-type: none"> <li>- natural hazards</li> </ul>		
<b>Section 4 Description of the Likely Significant Effects of the Project</b>	<p>Description of the likely significant effects of the proposed project on the environment resulting from:</p> <ul style="list-style-type: none"> <li>- the existence of the project</li> <li>- the use of natural resources</li> <li>- the emission of pollutants, the creation of nuisances and the elimination of waste</li> </ul> <p>Description of the</p>	<p>Including transboundary effects</p> <p>Water management:</p> <ul style="list-style-type: none"> <li>- water supply;</li> <li>- wastewater management;</li> <li>- impact prognosis</li> </ul> <p>Air:</p> <ul style="list-style-type: none"> <li>- generated pollutants and air pollution sources</li> <li>- air pollution prognosis</li> </ul> <p>Noise and vibration:</p> <ul style="list-style-type: none"> <li>- noise and vibration</li> </ul>	<p>The EIA Report includes a discussion of the potentially significant effects on water, air quality, soil, geology, biodiversity, landscape, social and economic conditions and cultural heritage during construction, operation and decommissioning phases.</p> <p>The discussion of impacts on biodiversity includes consideration of the potential effects of wind turbines on avifauna and bird migratory routes but impacts on other species (such as bats) are not discussed.</p> <p>The EIA Report does not describe the approach or methodologies that have been used in the impact assessment. In addition the conclusions reached do not specify the significance of likely effects in accordance</p>	<p>Further information on ecology, landscape and visual impacts is included in the Supplementary Information Report.</p> <p>The monitoring and surveys to be completed by the IOE, including breeding, wintering and migratory bird surveys and vantage point bird surveys, will be undertaken for at least one year.</p> <p>Details of the proposed monitoring measures and programme are provided in the Supplementary Information Report and the Environmental</p>

Item	Information Requirements set out in Directive 97/11/EC	Requirements of Romanian Legislation on EIA (GD 445/2009; MO 860/2002; MO 863/2002)	Have the Requirements been Adequately Addressed?	What Further Information is Needed?
	forecasting methods used to assess the effects on the environment	<p>sources</p> <ul style="list-style-type: none"> <li>- impact prognosis</li> </ul> <p>Shadow effect:</p> <ul style="list-style-type: none"> <li>- shadow sources</li> <li>- impact prognosis</li> </ul> <p>Soil and geology:</p> <ul style="list-style-type: none"> <li>- soil pollution sources</li> <li>- impact prognosis</li> </ul> <p>Biodiversity:</p> <ul style="list-style-type: none"> <li>- impact prognosis</li> </ul> <p>Landscape:</p> <ul style="list-style-type: none"> <li>- impact prognosis</li> </ul> <p>Socio and economic management:</p> <ul style="list-style-type: none"> <li>- potential impact on life conditions</li> </ul> <p>Cultural and ethnical conditions, cultural heritage.</p> <p>Risk situations:</p>	<p>with clearly defined significance criteria. These deficiencies are particularly evident in respect of landscape and visual effects and effects on birds and bats which may experience significant effects as a result of the wind farms. These issues have, however, been addressed in the Supplementary Information Report that has been produced.</p> <p>The EIA Report includes an assessment of cumulative impacts in relation to in-combination effect of the potential impacts arising from the project. However, no assessment of potential cumulative environmental effects associated with other projects in the local area (including other wind farm developments) is included in either of the EIA Reports. This is particularly relevant in view of the proximity of the sites to protected areas and known bird migration routes and in respect of similar projects which will reduce the amount of airspace available for use by birds and bats. Again, this has been addressed in the Supplementary Information Report that has been produced.</p> <p>A Construction Environmental Management Plan (CEMP) was implemented to manage environmental effects during the</p>	and Social Action Plan (ESAP).



Item	Information Requirements set out in Directive 97/11/EC	Requirements of Romanian Legislation on EIA (GD 445/2009; MO 860/2002; MO 863/2002)	Have the Requirements been Adequately Addressed?	What Further Information is Needed?
		<ul style="list-style-type: none"> <li>- natural hazards</li> <li>- potential accidents</li> <li>- potential industrial accidents with significant impact, including transboundary negative significant impact</li> <li>- risk situations plans</li> <li>- accidents prevention measures</li> </ul>	<p>construction works and environmental monitoring visits were undertaken during construction, approximately every two weeks, with the site visit findings being presented in a separate report.</p> <p>The Environmental Agreements for the Project requires that that supplementary monitoring is undertaken for one year for, following commissioning to quantify the impact on flora, habitats and avifauna, the results are to be submitted to the EPA every three months. EDPR has confirmed that IOE will be appointed to undertake monitoring at the site. Details of the proposed monitoring measures and programme are provided in the Supplementary Information Report and the Environmental and Social Action Plans (ESAPs) for each site.</p>	
<b>Section 5 Description of Mitigation</b>	Description of the measures envisaged to prevent, reduce and where possible offset any significant adverse effects on the environment	<p>Mitigation measures to be adopted in respect of:</p> <ul style="list-style-type: none"> <li>- Water management:</li> <li>- Air</li> <li>- Noise and vibration</li> <li>- Shadow effect:</li> <li>- Soil and geology</li> <li>- Biodiversity</li> </ul>	<p>Mitigation measures to be implemented during construction, operation and decommissioning phases are discussed in outline in the EIA Reports. EDPR has confirmed that the mitigation measures required are in the process of being implemented.</p> <p>Some monitoring is recommended in the EIA Report although this relates mainly to</p>	<p>Further mitigation measures are required in respect of potential effects on avifauna. These are detailed in the Supplementary Information Report and include:</p> <ul style="list-style-type: none"> <li>• Appointment of an IOE</li> <li>• Additional monitoring and surveys in respect of avifauna</li> </ul>

Item	Information Requirements set out in Directive 97/11/EC	Requirements of Romanian Legislation on EIA (GD 445/2009; MO 860/2002; MO 863/2002)	Have the Requirements been Adequately Addressed?	What Further Information is Needed?
		<ul style="list-style-type: none"> <li>- Landscape</li> <li>- Socio and economic management</li> <li>- Cultural and ethnical conditions, cultural heritage</li> <li>- Risk situations</li> </ul> <p>Monitoring requirements:</p> <ul style="list-style-type: none"> <li>- environmental components to be monitored</li> <li>- monitoring period and frequency</li> <li>- monitoring parameters</li> </ul>	<p>operation of the turbines rather than environmental monitoring to determine changes in baseline conditions or to identify the effectiveness of mitigation measures which have been implemented.</p> <p>Discussions with EDPR have confirmed that noise and ecological monitoring will be undertaken during operation.</p>	<ul style="list-style-type: none"> <li>• A Collision Risk Assessment</li> <li>• Development and implementation by the IOE of a detailed shut down procedure for the wind farm in accordance with EBRD and IFC standards.</li> <li>• The IOE having the authority to implement appropriate mitigation measures based on an agreed protocol, including reducing the speed of the turbines or, potentially, for the turbines to be temporarily turned off should a migrant flock be observed to be approaching either site.</li> <li>• Marking overhead powerlines with bird deflectors to increase visibility.</li> </ul>
<b>Section 6 Non-Technical Summary</b>	A non-technical summary of the information provided under the above headings	A non-technical summary is to be provided	<p>A non-technical summary has been prepared as part of the EIA Report.</p> <p>The non-technical summary is incomplete such as in respect of landscape and ecology and cumulative effects, and not easily understood by a lay person.</p>	A separate Non-Technical Summary has also been prepared for each Project as part of the gap analysis and due diligence.
<b>Indication of Any Difficulties</b>	An indication of any difficulties (technical	Difficulties encountered during the EIA	The EIA Report does not identify any limitations relating to the data or	Further information on landscape and visual effects

Item	Information Requirements set out in Directive 97/11/EC	Requirements of Romanian Legislation on EIA (GD 445/2009; MO 860/2002; MO 863/2002)	Have the Requirements been Adequately Addressed?	What Further Information is Needed?
<b>Encountered in Compiling the Information</b>	deficiencies or lack of know-how) encountered by the developer in compiling the required information	development	assessment methodologies that have been used.  As identified above there are some deficiencies in the data which are presented in the EIA Report in respect of ecology, landscape and visual effects and cumulative effects.	and potential cumulative ecological effects due to the effects of the Projects together with other wind farms nearby is provided in the Supplementary Information Report.
<b>Section 7 Quality of Presentation</b>	Is the document logically organised and clearly structured? Is there a clear description of the process which has been followed? Is there effective use of tables, figures, maps, photographs and other graphics? Are all analyses and conclusions adequately supported with data and evidence? Are all sources of data properly referenced? Is consistent terminology used throughout the documents?	No specific requirements relating to EIA Report presentation	The EIA Report is clearly presented and contains technical information relating to the equipment associated with the wind farms (Sections 1 and 2 of the EIA Report). Various technical data are provided, together with photographs, drawings and diagrams.  Some of the findings of the EIA Report are not adequately supported by site-specific information, such as relating to the conclusion that there will be a positive landscape and visual effect. In addition, a significant amount of information within the EIA report relates to a larger area (such as county or regional level) than the site itself which is indicative of the lack of site-specific data.	Further information on landscape and visual effects and potential cumulative ecological effects due to the effects of the Projects together with other wind farms nearby is provided in the Supplementary Information Report.  In addition, the results of further monitoring and surveys (as identified in the Supplementary Information Report) will confirm the assessment of significance of residual effects.
<b>Others e.g. consultation with the public,</b>	None specified in EIA Review Checklist	- including public proposals and minutes from the public debate	In accordance with the requirements of National legislation public announcements were made in the media regarding the	Although not a specific requirement of the Environmental Agreements that

Item	Information Requirements set out in Directive 97/11/EC	Requirements of Romanian Legislation on EIA (GD 445/2009; MO 860/2002; MO 863/2002)	Have the Requirements been Adequately Addressed?	What Further Information is Needed?
authorities and other stakeholders			request for the Environmental Agreement, the commencement of the EIA studies and regarding the issue of the Environmental Agreement and a Public Debate on the EIA was held in Vutcani.	<p>have been issued for the Projects, in accordance with the Equator Principles (Principle 6) further additional public consultation will be undertaken.</p> <p>The programme and format of this is outlined in the Stakeholder Engagement Plan (SEP) that has been produced for the project.</p> <p>The SEP is available to the public and also outlines the grievance mechanism that has been implemented for the project.</p>

Source documents: Council Directive 97/11/EC of 3 March 1997 amending Directive 85/337/EEC of 27 June 1985 on the assessment of the effects of certain public and private projects on the environment  
Romanian legislation relating to EIA: Governmental Decision 445/2009; Ministerial Orders 860/2002, 863/2002 and 135/2010  
European Commission Guidance on EIA, EIS Review (June 2001)

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## Appendix C - Environmental and Social Action Plans

## Environmental and Social Action Plan - Sarichioi

No	Action	Benefits / Reasons and Implementation	Legislative requirement / EBRD performance requirement / Best practice	Investment Needs / Resources / Responsibility	Timetable action to be completed by	Target and evaluation criteria for successful implementation
0	<p>Prepare and submit reports on status of ESAP implementation and environmental, health, safety and social performance, including resolution of grievances associated with the project.</p> <p>The Company will comply with the requirements of the Corporate ESAP.</p>	Continual assessment of EHSS performance against EBRD PRs	EBRD PR1, PR2 and PR10	Internal resource	Annually	<p>Submission of reports on environmental, health and safety, and social (EHSS) performance.</p> <p>These reports will be provided to the Lenders but also made available to stakeholders on request.</p>
1	Comply with all permits and permit conditions as well as results and recommendations of ornithological monitoring reports.	Best practice	Romanian law EBRD PR1	Internal resource	Continuously	Report any violations and consequences.
2	Develop and implement an Environmental, Health and Safety Management System (EMS) in accordance with corporate requirements.	Best practice	EBRD PR1, PR4	Internal resource (or supported by external consultant)	Q1 2014	<p>Development of an EMS.</p> <p>Attainment of ISO 14001 or equivalent.</p> <p>Annual EHS Report to be submitted to the Bank.</p>
3a	Undertake one-off noise monitoring surveys at sensitive receptors i.e. nearby residences to verify noise levels are acceptable.	Compliance with regulatory requirements	EBRD PR3, PR4	Internal resource (or resourced externally – up to €5000)	Six months following completion	Survey report, including compliance status.
3b	Monitor noise at any residence upon receipt of complaints or request by owner/occupant.	Ensure no disturbance of resi-	EBRD PR3, PR4	Internal resource (or resourced externally)	Throughout operation	Report on noise complaints and requests, and on results and mitigation

No	Action	Benefits / Reasons and Implementation	Legislative requirement / EBRD performance requirement / Best practice	Investment Needs / Resources / Responsibility	Timetable action to be completed by	Target and evaluation criteria for successful implementation
	Implement mitigation to reduce noise levels to acceptable levels if needed.	dents		-- up to €3000)		if required.
4a	<p>Appoint qualified Independent Ornithologist Expert (IOE) to develop and/or re-view/approve methodologies for seasonal bird monitoring and for mortality monitoring for birds and bats.</p> <p>The IOE will implement a formal turbine shut down system or reduce the speed of operation of wind turbines, when significant risks of bird collisions occur.</p> <p>The IOE will be approved by the Lender.</p>	Ensure representative quality data	Best practice PR3	€3000	Approved methodologies to be agreed within three months of Board approval	<p>Report on development/approval status.</p> <p>Annual report to the Lenders, and publishing of a report available to stakeholders on request. The report will also be sent to the Romanian Ornithological Society (SOR), EcoPontica and Tulcea Environmental Protection Agency (EPA).</p>
4b	Implement biodiversity monitoring programme developed under 4a.	Identify actual impacts on birds (and bats if applicable)	Best practice PR 3	€10000 per year	<p>Seasonal: at least 5 years, continued as required by Environmental Authorisaiton.</p> <p>Mortality: throughout operation of the wind farm</p>	

No	Action	Benefits / Reasons and Implementation	Legislative requirement / EBRD performance requirement / Best practice	Investment Needs / Resources / Responsibility	Timetable action to be completed by	Target and evaluation criteria for successful implementation
4c	Appoint qualified independent ornithologist to review results of each year's monitoring, and cumulative data, to determine (a) the need for additional mitigation measures if there are unacceptable impacts, (b) the need for continuing seasonal monitoring for another year.	Evaluate actual impacts, mitigate as needed, plan for future needs	Best practice PR 3	First 2 years: €2000 per year  Mortality monitoring: €1000 per year	Seasonal: annually as long as monitoring continues Mortality: annually throughout operation.	Report on monitoring and mortality, and on the ornithologist's recommendations.
4d	If needed based on ornithologist recommendation under 4c, develop and implement mitigation measures to reduce impacts to acceptable levels.	Reduced impacts, if necessary	Best practice PR 3	Not possible to estimate at present	As agreed with IOE	Report on mitigation and implementation.
4e	Within 2 years of the operation of the wind farms, undertake a bird collision assessment, in line with recognized international best practice and based on a model as advised by the IOE, and discuss with key stakeholders, inclusive of SOR and regulators. Revise the shut-down system/protocol based on the findings of the collision risk assessment. A report will be provided to the Lenders and a summary of the study published on the internet.	The collision risk assessment will enable a review of operational and monitoring data and to verify the assessment made in the initial studies. Based on the results of the study, the company will amend an action plan and operational conditions,	Lenders requirements	External consultants	Within 2 years of commissioning the project	Report on results of collision risk assessment and required mitigation measures and changes to monitoring plan if applicable.



No	Action	Benefits / Reasons and Implementation	Legislative requirement / EBRD performance requirement / Best practice	Investment Needs / Resources / Responsibility	Timetable action to be completed by	Target and evaluation criteria for successful implementation
		as far as these are possible.				
4f	Ensure conductor spacing on transmission line is sufficient to prevent electrocution of the largest birds expected to be present, or otherwise appropriate to eliminate the possibility of electrocution.	Reduced mortality	Best practice PR 3	Not possible to estimate at present	Q3 2013	Report on need for modifications.
5	Develop comprehensive waste management plans to include: 1. Procedures for proper handling of all waste generated 2. Methods to verify proper off-site management of related wastes by contractors 3. Measures to minimize waste generation and maximise re-use and recycling. Waste segregation and designated storage locations	Minimisation of waste for disposal	Best Practice / EBRD PR 3	Internal resource (provided by contractors)	To be implemented during operation	Waste management plan and audit of implementation.
6	Undertake a health and safety risk assessment of all staff job functions and activities, and implement health and safety action plan covering control measures and work instructions as required.	H&S risks	EBRD PR2, PR 4	Internal resource	July 2012	Risk Assessment.
7	Ensure contractors and staff have: 1. An emergency procedure developed.	Contractor management	EBRD PR1, PR 4	Internal resource (and provided by	July 2012	Contractor and company EHS performance data –

No	Action	Benefits / Reasons and Implementation	Legislative requirement / EBRD performance requirement / Best practice	Investment Needs / Resources / Responsibility	Timetable action to be completed by	Target and evaluation criteria for successful implementation
	2. Implemented HSE training of staff. Access to personal protective equipment and use such equipment.			contractors)		accidents and statistics.
8	Develop labour and social policies and incorporate into contractual arrangements with employees and contractors – to include terms of employment, skills, dismissal, discrimination, harassment, violations, human rights, forced and child labour, wages and social leave/benefits, health & safety and bribery and corruption.	Contractor management	EBRD PR1, PR 4	Internal resource (provided by contractors)	Q3 2012	Employment and social policies.
9	Maintain and further develop Stakeholder Engagement Plan (SEP), including a Grievance Mechanism.	EBRD performance standards	EBRD PR10	A SEP has been developed for use on this project	July 2012	SEP document to be updated every 3 years.
10	Implement the agreed SEP, inform stakeholders of activities and possible impacts, and receive and respond to grievances.	EBRD performance standards	EBRD PR10	Internal resource (appointment of project communications manager)	To be implemented during operation	SEP as amended, grievances and responses to grievances.
11	Develop and implement a decommissioning strategy that includes a plan for minimising environmental impacts during decommissioning.	Best practice	EBRD PR1	Internal resource	At end of the life of wind farm	Decommissioning plan.

## Environmental and Social Action Plan - Vutcani

No	Action	Benefits / Reasons and Implementation	Legislative requirement / EBRD performance requirement / Best practice	Investment Needs / Resources / Responsibility	Timetable action to be completed by	Target and evaluation criteria for successful implementation
0	<p>Prepare and submit reports on status of ESAP implementation and environmental, health, safety and social performance, including resolution of grievances associated with the project.</p> <p>The Company will comply with the requirements of the Corporate ESAP.</p>	Continual assessment of EHSS performance against EBRD PRs	EBRD PR1, PR2 and PR10	Internal resource	Annually	<p>Submission of reports on environmental, health and safety, and social (EHSS) performance.</p> <p>These reports will be provided to the Lenders but also made available to stakeholders on request.</p>
1	Comply with all permits, permit conditions and results of inspections and monitoring reports.	Best practice	Romanian law EBRD PR 1	Internal resource	Continuously	Report any violations and consequences.
2	Develop and implement an Environmental, Health and Safety Management System (EMS) in accordance with corporate requirements.	Best practice	EBRD PR1, PR4	Internal resource (or supported by external consultant)	Q1 2014	<p>Development of an EMS.</p> <p>Attainment of ISO 14001 or equivalent.</p> <p>Annual EHS Report to be submitted to the Bank.</p>
3a	Undertake one-off noise monitoring surveys at sensitive receptors i.e. at nearby residences to verify noise levels are acceptable.	Compliance with regulatory requirements	EBRD PR3, PR4	Internal resource (or resourced externally – up to €5000)	Six months following completion.	Survey report, including compliance status
3b	Monitor noise at residences upon receipt of complaints or request by own-	Ensure no disturbance of residents	EBRD PR3, PR4	Internal resource (or resourced externally)	Throughout operation.	Report on noise complaints and requests, and

No	Action	Benefits / Reasons and Implementation	Legislative requirement / EBRD performance requirement / Best practice	Investment Needs / Resources / Responsibility	Timetable action to be completed by	Target and evaluation criteria for successful implementation
	er/occupant. Implement mitigation to reduce noise levels to acceptable levels if needed			-- up to €3000)		on results and mitigation if needed.
4	Develop comprehensive waste management plans to include: 1. Procedures for proper handling of all waste generated. 2. Methods to verify proper off-site management of related wastes by contractors. 3. Measures to minimise waste generation and maximise reuse and recycling. Waste segregation and designated storage locations.	Minimisation of waste for disposal	Best Practice / EBRD PR3	Internal resource (provided by contractors)	To be implemented during operation.	Waste management plan and audit of implementation.
5	Undertake a health and safety risk assessment of all staff job functions and activities, and implement health and safety action plan covering control measures and work instructions as required.	H&S risks	EBRD PR2, PR4	Internal resource	Q4 2012	Risk Assessment. Report upon adoption of H&S action plan.
6	Ensure contractors and staff have: 1. An emergency procedure developed. 2. Implemented HSE training of staff. Access to personal protective equipment	Contractor management	EBRD PR1, PR4	Internal resource (and provided by contractors)	July 2012	Contractor and company EHS performance data – accidents and statistics. Report on training.

No	Action	Benefits / Reasons and Implementation	Legislative requirement / EBRD performance requirement / Best practice	Investment Needs / Resources / Responsibility	Timetable action to be completed by	Target and evaluation criteria for successful implementation
	and use such equipment.					
7a	<p>Appoint a qualified Independent Ornithological Expert (IOE) in accordance with corporate procedures to develop and/or review/approve methodologies for seasonal bird monitoring and for mortality monitoring for birds and bats.</p> <p>The IOE will implement a formal turbine shut down system or reduce the speed of operation of wind turbines, when significant risks of bird collisions occur.</p> <p>The IOE will be approved by the Lender.</p>	Ensure representative quality data	Best practice EBRD PR3	€3000	Approved methodologies to be agreed within three months of Board approval	<p>Report on development/approval status.</p> <p>Annual report to the Lenders, and publishing of a report to be made available to stakeholders on request. The report will also be sent to the Valsui Environmental Protection Agency (EPA).</p>
7b	Implement biodiversity monitoring programme developed under 7a.	Identify actual impacts on birds (and bats if applicable)	Best practice EBRD PR3	€10000 per year	See 7c	
7c	Appoint a qualified independent ornithologist to review results of each year's monitoring, and cumulative data, to determine (a) the need for additional mitigation measures if there are unacceptable impacts, (b) the need for continuing seasonal monitoring for another year.	Evaluate actual impacts, mitigate as needed, plan for future needs	Best practice EBRD PR3	<p>First 2 years: €2000 per year</p> <p>Mortality monitoring: €1000 per year</p>	Seasonal: at least 12 months in accordance with permit requirements, until ornithologist deems no longer needed.	Report on monitoring and mortality, and on the ornithologist's recommendations.

No	Action	Benefits / Reasons and Implementation	Legislative requirement / EBRD performance requirement / Best practice	Investment Needs / Resources / Responsibility	Timetable action to be completed by	Target and evaluation criteria for successful implementation
					Mortality: throughout operation.	
7d	If needed based on ornithologist's recommendation under 7c, develop and implement mitigation measures to reduce impacts to acceptable levels.	Reduced impacts, if necessary	Best practice EBRD PR3	Not possible to estimate at present	As agreed with IOE	Report on mitigation and implementation.
7e	Within 2 years of the operation of the wind farms, undertake a bird collision assessment, in line with recognized international best practice and based on a model as advised by the IOE, and discuss with key stakeholders, inclusive of SOR and regulators. Revise the shutdown system/protocol based on the findings of the collision risk assessment. A report will be provided to the Lenders and a summary of the study published on the internet.	The collision risk assessment will enable a review of operational and monitoring data and to verify the assessment made in the initial studies. Based on the results of the study, the company will amend an action plan and operational conditions, as far as these are possible.	Lenders requirements	External consultants	Within 2 years of commissioning the project	Report on results of collision risk assessment and required mitigation measures and changes to monitoring plan if applicable.
7f	Ensure conductor spacing on transmission line is sufficient to prevent electrocution of the largest birds expected to be present, or	Reduced mortality	Best practice EBRD PR3	Not possible to estimate at present	Q3 2013	Report on need for modifications.

No	Action	Benefits / Reasons and Implementation	Legislative requirement / EBRD performance requirement / Best practice	Investment Needs / Resources / Responsibility	Timetable action to be completed by	Target and evaluation criteria for successful implementation
	otherwise appropriate to eliminate the possibility of electrocution.					
8	Develop labour and social policies and incorporate into contractual arrangements with employees and contractors – to include terms of employment, skills, dismissal, discrimination, harassment, violations, human rights, forced and child labour, wages and social leave/benefits, health & safety and bribery and corruption.	Contractor management	EBRD PR1, PR4	Internal resource (provided by contractors)	Q1 2013	Employment and social policies.
9	Maintain and further develop a Stakeholder Engagement Plan (SEP), including a Grievance Mechanism.	EBRD performance standards	EBRD PR10	A SEP has been developed for use on this project	July 2012	SEP document to be updated every 3 years.
10	Implement the agreed SEP, inform stakeholders of activities and possible impacts, and receive and respond to grievances.	EBRD performance standards	EBRD PR10	Internal resource (appointment of project communications manager)	To be implemented during operation	SEP as amended, grievances and responses to grievances.
11	Develop and implement a decommissioning strategy that includes a plan for minimising impacts during decommissioning.	Best practice	EBRD PR1	Internal resource	At end of the life of wind farm	Decommissioning plan.

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