

# Investor CDP 2013 Information Request

## 0. Introduction to the document

EDP responds to the Carbon disclosure project since 2009. This activity has allowed us to systematize and reflect upon our CO2 emissions strategy, targets and projects thus giving us a deep insight about how we can pursue the path to a low carbon economy.

We attach a pdf file in order to provide a friendlier working version.

Please feel free to give us your feedback on any issue (luisa.serra@edp.pt).

We hope that you enjoy reading our CDP answer as much as we have enjoyed doing it.

## 0. Introduction to CDP

Please give a general description and introduction to your organization

Following our full disclosure policy, all information about Energias de Portugal (EDP) can be accessed in [www.edp.pt](http://www.edp.pt). In addition EDP strongly recommends the consultation of the 2012 Annual Report.

EDP is a vertically integrated utility company. EDP is the largest generator, distributor and supplier of electricity in Portugal, the third largest electricity generation company in the Iberian Peninsula and one of the largest gas distributors in the Iberian Peninsula.

EDP is also the third largest wind power operator worldwide with facilities for renewable energy generation in the Iberian Peninsula, the United States, Brazil, France, Belgium, Poland, Romania and Italy and is developing wind farms in the UK and Canada. Additionally, EDP has electricity generation, distribution and supply activities in Brazil and generates solar photovoltaic energy in Romania.

EDP has a relevant presence in the world energy outlook, being present in 13 countries, with more than 9.8 million electricity customers and 1.3 million gas supply points and over 12,000 employees around the world. On December 31, 2012, EDP had an installed capacity of 23.4GW, generating 54.7TWh, of which 60% comes from wind and hydro plants.

### 2012 in short figures:

Turnover	16,340 EUR Million
Gross Operating Profit	3,628 EUR Million
Net profit	1,012 EUR Million
Employees	12,382
Net assets	42,628 EUR Million
Equity	11,432 EUR Million
Net debt	18,233 EUR Million
ISIN	PTEDPOAM0009
SEDOL	4103596

EDP's vision is to be a global energy providing company, leader in creating value, innovation and sustainability.

EDP's values are: initiative, innovation, trust, excellence and sustainability.

EDP is strongly committed with Sustainability, People, Results and Clients. In what regards Climate Change EDP is committed to reduce in a sustainable manner the specific greenhouse gas emissions of the energy it produces. EDP is also committed to promote energy efficiency and the access to energy.

#### **0. Reporting year**

01.01.2012 – 31.12.2012

#### **0. Country list configuration**

Please select the countries for which you will be supplying data. This selection will be carried forward to assist you in completing your response

Portugal

Spain

USA

Brazil

Rest of the world

#### **0. Currency selection**

Euro

# Management

## 1. Governance

### Group and Individual Responsibility

1.1 Where is the highest level of direct responsibility for climate change within your company?

Individual/Sub set of the board or other committee appointed by the board.

*If an individual or committee is identified:*

1.1a. Please identify the position of the individual or name of the committee with this responsibility

#### i. identify the job title of the individual

António Pita de Abreu the member of EDP's corporate executive board that has the responsibility upon Sustainability issues. He is an engineer with a long time experience in the company having worked many years in generation, distribution and overseas.

#### ii. description of his position within the corporate structure

Mr. Pita de Abreu is a member of EDP's Corporate Executive Board. He has responsibilities upon the following areas: sustainability, labor relations, IT, ethics and electric generation.

## Individual Performance

1.2 Do you provide incentives for the management of climate change issues, including the attainment of targets?

Yes

*If yes: 1.2a Please complete the table*

Who is entitled to benefit from these incentives?	The type of incentives	Incentivized performance indicator
Board/Executive Board	Monetary reward	EDP's performance in the Dow Jones Sustainability index that includes three performance vectors: economic, environmental and social. CO2 emissions reduction is included in the environmental vector. The methodology is based on the Dow Jones Sustainability Index. Depending on the Dow Jones Sustainability index performance the Board is entitled to a monetary reward.
Environment/sustainability managers	Monetary reward	EDP's performance in the Dow Jones Sustainability index that includes three performance vectors: economic, environmental and social. CO2 emissions reduction is included in the environmental vector. The methodology is based on the Dow Jones Sustainability Index. The employees entitled to this benefit are: - The Corporate Sustainability Department - Members of Financial Control Department of EDP - Some colleagues from the BUs that collaborate with the corporate Sustainability Department.
Employees EDP Brazil	Monetary reward	All employees of EDP Brazil have the ISE Bovespa index performance in their KPI's. The ISE Bovespa includes CO2 emission reduction in its environmental vector evaluation.

## 2. Strategy

### Risk Management Approach

2.1 Please select the option that best describes your risk management procedures with regard to climate change risks and opportunities.

Integrated into multidisciplinary companywide risk management processes

*If “integrated into company-wide risk management process”, “a specific climate change risk management process”, or “a process that forms part of the company’s overall approach to governance/compliance” are selected:*

#### 2.1a Please provide further details (see guidance)

##### **i. The scope of the process – type of risks and opportunities considered by the process such as regulatory, customer behavior changes, reputational and weather related**

EDP has a Corporate Policy on Enterprise-Wide Risk Management (CPEWRM), that states: Principles, Structure and Governance and identifies all company departments that have responsibilities in risk management. Governance and Control are established in CPEWRM and were stated by the Executive Board of Directors (EBD). The EBD decides about the company’s risk appetite and the acceptable level of risk exposure, it also delegates tasks and responsibilities, defines the overall risk limits and ensures that risk management policies and procedures are observed.

The EBD is supported by a group of committees, among them the Risk Committee, chaired by the CEO, composed by: CFO, CRO, Corporate Financial Department Director, Iberian Trading Unit manager, Energy Strategic Planning Department Director and other senior management members who are invited upon agenda request. The main objective of the Risk Committee is to support the EBD decisions in what regards risk identification, evaluation, management and control. The responsibilities of the Risk Committee are: to monitor key risks and risk appetite of EDP Group, to approve reporting and monitoring mechanisms, to approve or define recommendations concerning key risks or extraordinary risk events and approve or define recommendations concerning the Group Risk Policy, procedures and limits.

At corporate level, there is a Risk Management Department that is responsible for keeping updated the most significant risks database, to promote and monitor risk management actions, to systematically evaluate specific risks, to define the main concepts, methods, risk measures and key risk indicators, to support the EBD in what regards Crises Management and Business Continuity.

The type of risks considered is vast and is listed in the Risk Types at EDP Risk Portal, the corporate Risk database, among others one can find:

- Credit Risks – Clients, counterparties, among others
- Market – Forex, liquidity, price (fuel, electricity, financial instruments and others) and tax rates
- Business Risks – Environmental – Climate change, biodiversity, weather related, among others
- Operational – Extreme weather events, among others
- Regulatory

##### **ii. how risks opportunities are accessed at a company level**

Business Units (BU) manage their own risks (down side) and opportunities (upside) within the established mandates. BU Risk Officers articulate both with their hierarchies, and with the CRO, thus ensuring the alignment of objectives, processes, report and control.

The methodology developed for risk management (identification, scoring and monitoring) is supported by a software platform, web based, named “Portal de Risco do Grupo EDP” (Risk Portal- EDP Group). This was internally developed to consistently collect information on each relevant risk. It is widely used in EDP Group and provides data with qualitative and quantitative risks assessment. All actions regarding a particular risk are registered and can be followed up on the tool. In the Risk Portal the risk maps are automatically produced for all the identified risks. EDP works with the following two-dimensional risk maps: (1) risk manageability vs. expected risk; (2) risk control vs. expected risk; (3)(manageability-control gap) vs expected risk where "expected risk"= frequency x severity.

Financial and Business Risks exposure are analyzed with Monte Carlo simulations and stochastic methods, applying VaR, CFaR, PaR, among others.

Credit risk (counterparty or client default) is analyzed by external and internal rating and multivariate methodologies that allow the identification of financial and business risk exposures.

Multi-dimensional stress tests and scenario analysis are also applied to the bi-annual business plan and budget. Water and climate risks and crisis management are ultimately delegated in the CEO and in the Board. In order to succeed in this mission, the CEO is assisted by the Board, namely by the officer in charge of Environment and Sustainability and by the officer in charge of Generation. Operational Climate Change Risk is managed by BUs and followed at corporate level by the Corporate Risk Management Department and by the Sustainability Department (DSA). DSA has developed a project, ClimEDP, transversal to the company that has evaluated the impact of Climate Change Risk in EDP's processes and assets. This project is in the Risk Portal.

### **iii. how risks opportunities are assessed at an asset level (individual sites)**

The risk assessments that lead to the Risk Portal were performed on an asset base approach for each relevant BU.

### **iv. the frequency of monitoring in terms of weeks/months/ years**

Risk follow-up depends on its materiality and control status, that is, risks that can cause a major impact or that are not properly managed are followed up on a regular basis - weekly to bi-annual. Usually, risks in this situation are under some corrective action towards mitigation, either by increasing its control either by transferring the risk. The most common monitoring frequency is annual.

### **v. criteria for determining materiality/priorities**

The risk materiality is decided upon its impact on the BU as well as its impact on EDP Group. In a small BU a risk may be important, but when evaluated at group level it may be almost irrelevant, either because of its value, either because it is naturally hedged. All risks are evaluated taking into account these two vectors. A risk that has an important impact at Group Level is considered a priority and is addressed in an urgent manner with actions to diminish or transfer it.

### **vi. to whom are the results reported**

The actions/projects developed to manage these risks are reported to BU management as well as to the Risk Management Corporate Department and to the Board.

Furthermore for the fifth consecutive year, EDP Group is recognized by the Dow Jones organization and it has been considered in 2011 and in 2012 the world leading company in the electric sector. In 2013 EDP achieved its best ever mark ex-equo with the electric sector leader. For the third consecutive year EDP is leader in social dimension and maintains leadership in areas such as: Risk management, management control systems, biodiversity, Human capital development, stakeholder engagement, social reporting, corporate citizenship, supply chain management and environmental reporting.

## **Business Strategy**

2.2 Is climate change integrated into your business strategy?

Yes

If yes: 2.2a Please describe the process and outcomes (see guidance)

EDP's strategic plan, issued by the Executive Board of Directors (EBD on Investor's Day in 2008, stated that CO2 emission factor (EF) would be reduced by 56% by 2012 in comparison with 2005 emissions. EF would drop from 600KgCO2/MWh in 2005 to 270KgCO2/MWh by 2012.

In 2009, EDP committed itself to a more ambitious target, to reduce by 2020 by 70% EF, in comparison to 2008. EF will drop from 400KgCO2/MWh in 2008 to 120KgCO2/MWh by 2020. This reduction is a result of the Group's Strategy and will be achieved through substantial business decisions:

- Investment in wind power – CO2 free electricity generation
- Switch from coal and fuel oil to CCGT - contributes to CO2 intensity reduction
- Construction of new hydropower plants, some of them with pumped storage capability – CO2 free electricity generation
- Repowering existing hydropower plants – CO2 free electricity generation
- Investment in smart grids – increases electrical system efficiency
- Investment in innovative efficiency projects in demand side management- increases electrical end users efficiency

The EF evolution in KgCO<sub>2</sub>/MWh was 2006: 490, 2007: 460, 2008: 400, 2009: 360, 2010: 244, 2011: 285 and 2012:323.

2012 year was characterized by a number of exogenous and market circumstances that had a significant impact on the energy sector and a decisive influence on the energy/environmental performance of EDP Group. The circumstances were:

- Low rainfall in Portugal and Spain (with a Hydroelectric Production Index [HPI] lower than 50%), affecting the generation mix and calling for more intensive operation of thermal power stations
- Lack of an effective CO<sub>2</sub> market, with prices falling heavily in 2011 and 2012 (down to €6/ton in 2012) due to licenses surplus, affecting the generation order of merit
- Low price of CO<sub>2</sub> licenses and coal generation in comparison to natural gas generation, which has naturally been reflected in the Iberian market, thus increasing CO<sub>2</sub> emissions.

Also the economic and financial crisis in Europe, and the presence of the Troika (EC/ECB/ IMF) in Portugal, has substantially changed the energy market, causing the contraction in electricity consumption (-3.6%) and a decrease in renewable generation incentives, amongst others.

In comparison to 2011, in which 16.9 Mton of CO<sub>2</sub> were emitted, there was a 6% increase in emissions in the context of the EU-ETS, which is explained by a higher use of coal-fired power stations. Consequently, the overall specific emissions for the EDP Group rose from 0.285 CO<sub>2</sub>/MWh in 2011 to 0.323 tCO<sub>2</sub>/MWh in 2012, away from the target of 0.27 tCO<sub>2</sub>/MWh set for 2012. This target was set in 2005 and was based on a generation mix corresponding to an average water year (HPI=1). Therefore, if 2012 had been an average year, hydroelectric generation in Portugal would have been 100% higher, up to 5,6 TWh, which would have avoided the generation of the same amount of energy by thermal power stations, namely coal-fired power stations. These plants are the main contributors to the load diagram base line.

**If the real 2012 emission factor is calibrated to an HPI of 1, the overall specific emissions value for EDP Group is 0.265 tCO<sub>2</sub>/MWh, fully aligned with the established target.**

**i. How the business strategy has been influenced, i.e., internal communication/reporting processes that achieve this**

EDP's strategy is based on three pillars: controlled risk, superior efficiency and focused growth. Controlled risk addresses many types of risk: Strategic, Business, Market, Operational, Credit and Regulatory Risks. Climate risk is dealt within the Strategic and Operational risks, through an on-going project, ClimEDP, in which Climate Change risk is assessed as well as company adaptation, there are also specific risks analyses that evaluate Climate Change impact, namely water shortage.

EBD defines the corporate strategy based on the inputs from corporate departments such as Energy Strategic Department, Risk Department, and relevant BU: electrical generation company, electrical distribution, gas distribution, among others. These inputs include market analysis, scenario analysis, technology analysis, regulation analysis, among others.

The data produced incorporates important climate change issues such as emissions regulation, CO<sub>2</sub> price, and extreme weather events, among others. Fuel use and availability is also considered, although it is not directly connected with climate change.

**ii. What aspects of climate change have influenced the strategy, e.g., need for adaptation, regulatory changes, opportunities to develop green business**

The main aspects of climate change that have influenced the strategy are:

- Opportunities to develop new businesses – namely renewable energy
- Regulation- namely the EU-ETS
- Opportunities to develop green businesses – green electricity generation in Europe and in USA
- Market – Volatility in fuel and CO<sub>2</sub> licenses prices

EDP's compliance strategy for the EU-ETS is based on emission reduction as well as in allowances purchase.

EDP searches for the best cost-efficient strategy to comply, using both European Union Allowances (EUA) and the maximum of carbon credits (CER and ERU) possible for each installation.

As to the management of the compliance portfolio, we hedge our emissions through primary and secondary market operation, both on spot and long term contracts.

Especially on the CDM/JI portfolio we favored several different types of approaches, from our own originations, to CO2 funds, CO2 project auctions and one-to-one (projects) purchase agreements.

In other geographies EDP has strongly invested in CO2 free generation, thus generating electricity with low or none CO2 emissions.

In Brazil, where there is no carbon market in operation, EDP has been a pioneer in the electricity sector in developing carbon credit projects.

It has five Clean Development Mechanism (CDM) projects registered with the Executive Board of the UNFCCC (United Nations Framework Convention on Climate Change): repowering of the fourth machine at its Mascarenhas hydroelectric power station; the Sao Joao and Paraíso hydroelectric power stations; and the Agua Doce and Horizonte wind farms. To date, the UN has issued 40 426 Certified Emission Reductions (CERs).

EDP's strategy also incorporates climate change in the short term, through adaptation measures that EDP has undertaken in order to reduce climate change impacts on its assets, such as the placement of equipments at a superior height (TER), the installation of algae cleaning systems (in Sines the algae explosive growth in the cooling source was due to a local increase in sea temperature), the duplication of floodgates circuits and the placement of diesel emergency groups in flood protected sites in hydropower plants. These initiatives are registered and followed up by the ClimEDP project. Next steps of the project will be the incorporation of climate change weather scenarios in the climate change risk analysis. These scenarios are under production of the Portuguese Meteorological Institute and will be used as soon as they are available.

### **iii. The most important components of the short term strategy that have been influenced by climate change**

EDP's strategic agenda addresses key market concerns that that have been influenced by climate change:

- (1) Diversified and high quality portfolio of assets - investment in high value renewable generation, investment in low carbon generation (CCGT - Combined Cycle Gas Turbines)
- (2) Low risk business model – investment in renewables under regulated and long term contracts, adaptation measures to protect assets and cash-flow from extreme weather events.

### **iv. The most important components of the long term strategy that have been influenced by climate change**

The most important components of the long term strategy that have been influenced by climate change are:

- (1) Generation mix – to include more renewable
- (2) CO2 emissions of EDPs power plants – considerably curbed
- (3) Adaptation measures– to reduce EDP's assets exposure to extreme weather risk.

### **v. How this is gaining you strategic advantage over your competitors**

The strategy adopted by EDP has proven to be successful. The significant investment EDP has made in low or zero emissions generation technologies, namely wind generation, has allowed EDP to own the third global wind generation company – EDP Renováveis (EDPR). This company works mainly on regulated environments and has been able to collect incentives given to green power generation. EDPR has been able to deploy projects under risk controlled and adequate returns framework, either through Power Purchase Agreements (PPA) either through tax credits or others. Due to the global economy downturn, those incentives are declining and companies that were able to collect them in due time won a very strong competitive advantage.

EDP has also changed its generation mix promoting energy source diversification thus protecting the company from fuel price volatility. The change in generation mix has also attenuated the effect of CO2 price when it was high.

Furthermore, when CO2 licenses were at a high price and it was expected that they would be substantially expensive EDP has invested in CO2 license generating funds, in order to guarantee fully regulation compliance.

EDP has also taken regards adaptation measures that diminish EDP's risk and protect EDP's assets and cash flow generation.

### **vi. what have been the most substantial business decisions made during the reporting year that have been influenced by the climate change driven aspects of the strategy**

As announced in the Financial Report, several relevant substantial business decisions occurred in 2012 that were related with Climate Change:

- The partnership with China Three Gorges Corporation (CTG) continued, CTG is committed to invest until 2015 €2bn in Renewable Projects, corresponding to 1.5 GW net capacity. This partnership will provide cash flow for EDP's investments in Renewable Projects
- In Portugal (PT) Carregado and Setúbal power plants (fuel and dual with natural gas) were deactivated
- PT - The Alqueva hydropower plant repowering was completed – 256 MW

- EDPR increased its installed capacity in 504 MW (7%)
- EDP Brazil finished Mascarenhas hydropower plant 4,5 MW
- EDP Brazil continued the construction of Santo Antônio do Jari hydropower plant, located at the border of Pará and Amapá States. Its installed capacity will be 373 MW, and its due by January 2015.
- EDP Brasil acquired the Cachoeira Caldeirão hydropower plant, located at Amapá State - 219 MW
- PT - Safe to compete program – partnership among EDP and the Portuguese Industrial Confederation to promote energy efficiency
- PT - Energy Efficiency Services – Integrated energy projects – 15 GWh saved in 2012 representing 4 thousand ton CO2e avoided
- PT - ease – system that performs a real time monitoring of energy and water consumption, allowing analyses and benchmark
- PT - Micro generation projects – 46 photovoltaic plants on the roof of a Portuguese chain of supermarkets, 125 GWh (in 25 years) avoiding 42 thousand Ton CO2e
- PT - Since 2010 EDP leads the Portuguese electric mobility project ([www.mobie.pt](http://www.mobie.pt)) – 1100 charging points and 500 users
- PT - EDP continues the wind off-shore project - Windfloat - experimental 2MW turbine at the Portuguese north sea. It is now under tests.
- PT – Sunlab – a laboratory that tests photovoltaic modules.
- Foundation of the A2E (Access to Energy) Company – A technical non-profit facilitator to promote the access to energy in poor regions of developing countries
- EDP’s 2050 energy simulator ([www.2050.edp.pt](http://www.2050.edp.pt)) this tool allows several energy simulations and scenarios for Portugal thus providing a physical and economical model to access the strategic options that can be taken in the energy sector.
- SF6 – All electrical transformers are being replaced by sealed for life ones.
- EDP participates in I&D CCS projects: CCS I&D projects under the FP7th – The EU 7th Framework Program: Project Decarbit, Flexiburn CFB and CMET.

**Companies should explain what they mean by long and short term**

Less than 3 years - short term, more than 3 years medium/long term.

**Engagement with Policy Makers**

2.3 Do you engage in activities that could either directly or indirectly influence policy on climate change through any of the following?

X	Direct Engagement
X	Trade Associations
X	Funding Research Organizations
X	Other
	No

2.3a On what issues have you been engaging directly?

Focus of legislation	Corporate position	Details of engagement	Proposed solution
Cap and trade	Support	EDP has supported a cap and trade approach to GHG emissions. This position was expressed in Eurelectric in the “Environmental and Sustainable Development Policy Committee” and in the “Energy Policy and Generation” Committee. Follow-up with the Portuguese Government of the PNALE (Climate Change National Plan).	Cap and trade scheme the EU-ETS.
Energy efficiency	Support	EDP is a member of Eurelectric and is strongly engaged in promoting Energy efficiency through its action in the “Energy Efficiency” Working Group. EDP is a member of the Portuguese Tariff Council and Advisory Council of the Portuguese Energy Services Regulator, participating in public discussions regarding : (1) the consumer efficiency promotion plans, (2) technical advices on the electrical grid operation and commercialization regulation	

Clean energy generation	Support	EDP participated in the public discussion of the PNAER (National Renewable Energies Action Plan) EDP is a member of the Portuguese Tariff Council and Advisory Council of the Portuguese Energy Services Regulator, participating in public discussions regarding (1) technical advices on the electrical grid operation and commercialization regulation, (2) harmonization of integration of renewable and special regime production in MIBEL, (3) Electricity and Gas regulations	
Adaptation resilience	Support	EDP has worked with the Portuguese government in the Portuguese Adaptation Strategy (for the energy sector)	Improve asset resilience Dissemination of information about adaptation Co-joint efforts to promote adaptation, among private companies and public entities.
Climate finance	Support	EDP has subscribed and strongly supported Climate Finance in Eurelectric, in the “Environmental and Sustainable Development Policy Committee” and in the “Energy Policy and Generation” Committee.	
Other – Climate change in the energy sector	Support	EDP in Brazil participates in the Brazilian fora related to climate change that were created to discuss the proposed Sectorial Plans from the governmental National Policy on Climate Change. EDP is engaged in meetings and working groups to discuss the responsibility of the Brazilian energy sector in tackling climate change and reducing GHG emissions. Example of an Fora to which the Company is engaged - “Energy for sustainability development – The National Policy on Climate Change within Energy Sector”	EDP has participated in discussions and proposed solutions for CDM and other emissions reduction programs. Furthermore, the Company supported the interaction between the Energy Sector Companies and Federal government to achieve mitigation and adaptation to climate change events.

2.3b Are you on the Board of any trade associations or provide funding beyond membership?

Yes

2.3c Please enter the details of those trade associations that are likely to take a position on climate change legislation:

Trade association	Is your position on climate change consistent with theirs?	Please explain the trade association's position	How have you, or are you attempting to influence the position?
APE – Portuguese Energy Association	Consistent	APE is the Portuguese Association that represents the World Energy Council. APE strongly supports: cap and trade, energy efficiency, clean energy generation and adaptation and resilience.	EDP has a strong influence in APE. Usually EDP is a member of the board, either president or Vice-president.
Eurelectric	Consistent	EU institutions: should promote GHG reduction, give strong support to EU-ETS, support intelligent grids and transport electrification, R&D and incentives for early deployment of not-yet-mature renewable technologies.	EDP is a member of the Board of Director and participates in several groups such as the “Environmental and Sustainable Development Policy Committee”, in the “Energy Policy and Generation” Committee, among others.
European Wind Energy Association	Consistent	Voice of the wind industry, actively promoting the utilization of wind power in Europe and worldwide, and representing the wind sector development before the European Commission.	
ADENE – Agência para a Energia	Consistent	The association promotes the rational use of energy and renewable energy generation	EDP is a member of the social bodies
Asociación Empresarial Eólica	Consistent	Association with the objectives of overcoming the technical and statutory barriers that affects the growth of wind power, maintaining and consolidating the retributive regimen of the electrical production of wind origin that allows the sustainable development of the sector.	

APREAN Renewable Spain	Consistent	APREAN Renewable works as a negotiator/speaker with the Autonomic, Central and Local Administration and with any public or private organization. Its main objective is to represent, coordinate and defend the common professional, economic and business interests of its members and as an instrument to participate in the development of policies, especially energetic and environmental.	
Asociación de Promotores Eólicos de Aragón AEA	Consistent	Aragon investigation is an outreach program of research carried out in the autonomous region, sponsored by the Government of Aragon.	
Asociación Eólica del Principado de Asturias (AEPA)	Consistent	AEPA is a nonprofit association founded in Mieres (Asturias). AEPA was born as a sectoral group representing 100% of the companies that promote electricity generation projects from wind power already installed	
Asociación Eólica de Cantabria	Consistent	The Asociación Eólica de Cantabria was born so that all companies, within the sector, would be able to participate actively in the sustainable and stable development of this energy in the community.	
APRECAM CLM	Consistent	APRECAM offers its support to the Junta de Castilla - La Mancha to facilitate the implementation of wind farms and maximize economic benefits for the whole of the Autonomous Community.	
Asociación Eólica de Galicia EGA	Consistent	The union aims to strengthen the business sector's presence in the wind Galician national and international scene, as well as creating a regulatory framework and with a serious charge that fits the needs of economic and environmental Galicia.	
APREN - Associação Portuguesa de Produtores de Energia Eléctrica de Fontes Renováveis	Consistent	Non-profit association that aims the coordination and representation of its Associates, in developing energetic and environmental policies in renewable energies (hydro, wind, biomass, biogas, solar, offshore).	
Syndicat des Énergies Renouvelables (SER-FEE)	Consistent	Association in permanent contact with political officials, ministerial offices and the administration to defend the interests of the sector.	
Asociația Română Rentrú Energie Eoliană	Consistent	Association to promote the benefits of wind energy and ensuring a legal framework for its development and optimal investment in Romania.	
CANWEA	Consistent	Non-profit trade association that promotes the appropriate development and application of all aspects of wind energy in Canada, including the creation of a suitable policy environment.	
AWEA	Consistent	US trade association representing wind power project developers, equipment suppliers, services providers, parts manufacturers, utilities, researchers, and others involved in the wind industry. AWEA represents wind energy advocates from around the world.	
Wind Energy Foundation	Consistent	The Wind Energy Foundation is a Washington, D.C.-based organization founded in 2010 to educate the public about the benefits of wind power.	
Wind Coalition	Consistent	The Wind Coalition is a non-profit association formed to promote an economic and regulatory climate that encourages the development of the vast wind energy industry.	

2.3d Do you publicly disclose a list of all the research organizations that you fund?

Yes

2.3e Do you fund any research organizations to produce public work on climate change?

Yes

2.3f please describe the work and how it aligns with your own strategy on climate change

EDP has financed a study on “Biodiversity and Climate Change in the Iberian Peninsula” of the Museu Nacional de Ciências Naturais de Madrid and the Évora Rui Nabeiro CBIO Catedra. This study has performed an evaluation on the effects of Climate Change on the Iberian biodiversity. This is of particular interest due to the environmental compensation measures that EDP has to deliver due to the construction of new hydro power plants.

EDP has also developed some Climate Change risk evaluations in which it has used scientific data. These evaluations have supported the EDP’s strategy of mitigation and adaptation.

2.3g Please provide details of the other engagement activities that you undertake

### **1. engagement process**

EDP has dedicated structures in each geography that manage the relation with the supervisory bodies of the energy sector:

- Portugal: Corporate Regulation and Competition Department, Stakeholders Department
- Spain: Regulación y Relaciones Institucionales Department (Regulation and Institutional Relationship Department)
- EDPR (Europe and USA): Market Analysis & Regulation Department
- Brazil: “Área de Assuntos Regulatórios” (Regulatory Issues Department)

#### **i. Method of engagement**

Through trade/Industry organization (among others):

- EURELECTRIC, the European electricity sector association, EDP participates as a member of ELECPOR, the Portuguese Association of Electricity Companies. EDP is represented, amongst others, in the Environmental and Sustainable Development Policy Committee, the Markets Committee, the Energy Policy and Generation Committee and in some of its various working groups, subgroups and task forces, namely the Working Groups “Climate Change”, “Environmental Protection” and “Energy Efficiency”
- APE, Portuguese Energy Association
- NGVA – The Natural and bio gas Vehicle Association
- WEC, the World Energy Council
- AGN, Natural Gas Association
- APREN – Portuguese renewable energy association
- COGEN – The Portuguese cogeneration association
- AEE, Wind Industrial Association (EDPR Spain)
- CCE, Conseil de Cooperation Economique
- RWEA – Romanian Wind Energy Association, (EDPR Romania), participation in task groups
- SER-FEE - French Wind Energy Federation, EDPR participates in the technical groups: acoustics, dangers studies, environmental, security, economic, law and regulation, offshore and marine energy and site
- WEWAG - Wind Energy Whopping Crane Action Group – EDPR collaborates with WEWAG that is developing a habitat conservation plan to address the potential impacts of wind energy the whooping crane and lesser prairie chicken within the central United States. WEWAG works in coordination with the U.S. Fish and Wildlife Service and nine state wildlife agencies
- ABRADÉE - Brazilian electric distribution association
- APINE - Brazilian electric generation association
- ABEEólica – Brazilian wind generation association

Through ONG:

- Joint projects with WWF
- Participation in the COP side events
- WBCSD - World Business Council for Sustainable Development ([www.wbcsd.org](http://www.wbcsd.org)), a CEO-led, global association of some 200 companies dealing exclusively with business and sustainable development issues
- BCSD Portugal - the Portuguese Business Council for Sustainable Development, member of the WBCSD regional network
- CBDES Sustentável Brazilian council for sustainable development

Through Institutional Authorities:

- EWP- European Water Partnership – Stakeholder participation in the the EU Blueprint to Safeguard Europe's Water, EDP is part of the steering committee

- Portuguese government - Contribution to the Portuguese Climate Change Adaptation Strategy with technical expertise on the energy sector. Contribution with information, opinions and recommendations regarding co-generation and the transposition into national law of the EU energy legislation. Participation in the public discussion of the PNAER (National Renewable Energies Action Plan) and PNAEE (National Energy Efficiency Action Plan). Follow up of the PNALE - (Climate Change National Plan). Participation in ENAAC, the Portuguese National Adaptation Strategy Plan.

- ERSE Portuguese Energy Services regulator – Member of the Tariff Council and the Consultive Council, Participation in the public discussions of: (1) the consumer efficiency promotion plans, (2) technical advices on the electrical grid operation and commercialization regulation, (3) harmonization of integration of renewable and special regime production in MIBEL, (4) Electricity and Gas regulations

- EER European Energy Regulators – EDP participated in the Public Consultation on Harmonization of Renewable Support Schemes and CEER's advice on the take-off of a demand response electricity market with smart meters

- DG Competition – Public discussion on guidelines for State Aid related to environmental projects

#### **ii. topic of engagement**

- CO2 emissions regulation

- EU-ETS

- MIBEL Iberian electricity market

- EU regulation

- EU Regulatory trends

- Climate change Risk and Opportunities

- Climate change mitigation

- Climate change adaptation

- Energy efficiency

- Renewable energy

- Offshore energy

- Wave energy

- Photovoltaic

- Electrical / Natural gas mobility

#### **iii. nature of engagement**

EDP participates in all forms: (1) Answer to consultations: EWP, EURELECTRIC, Government, among others. (2) Participation in working group: SER-FEE, WEWAG, ENAAC, WBCSD, among others. (3) participation in research: Winfloat (off-shore wind energy), Sunlab (photovoltaic), (4) Meetings with ERSE, EU, USA, Government Officials

#### **(2) actions advocated – the nature of the advice given/endorsement or opposition of policy proposals or were you encouraging action on mitigation /adaptation**

EDP supports both mitigation and adaptation. Examples:

- At the COP 15 in Copenhagen EDP produced a statement sustaining the summit objectives: global participation of countries, strong support to renewable energy and to implementation mechanisms.

- Encouraging adaptation strategy and actions, through participation in ENAAC, EWP, among others.

- Development of clean electrical production, through the support to renewable generation, namely the Sunlab photovoltaic and windfloat off-shore wind turbine projects, among others.

2.3h What processes do you have in place to ensure that all of your direct and indirect activities that influence policy are consistent with your overall climate change strategy?

EDP's approach to climate has been stated since 2006 when EDP has announced a shift towards sustainable energies. This approach to Climate Change has been stressed in all the fora in which EDP participates, as well as with all regulatory bodies with whom EDP interacts with. In each geography EDP has dedicated structures that manage the relation with the supervisory bodies of the energy sector:

- Portugal: Corporate Regulation and Competition Department, Stakeholders Department

- Spain: Regulación y Relaciones Institucionales Department (Regulation and Institutional Relationship Department)

- EDPR (Europe and USA): Market Analysis & Regulation Department

- Brazil: "Área de Assuntos Regulatórios" (Regulatory Issues Department)

These structures are fully aligned with EDP's strategy.

### 3. Targets and Initiatives

#### Targets

3.1 Did you have an emissions reduction target that was **active** (ongoing or reached completion) in the reporting year?

*If you have an absolute target:*

3.1a Please provide details of your absolute target

Yes.

*If it is an absolute target:*

3.1a Please provide details of your **absolute** target

ID	Scope	% of emissions in Scope	% reduction from base year	Base year	Base year emissions	Target year	Comment
A-1	Scope 1* (absolute)	99,8%	20% decrease	2005	28 255 kton Specific – 0.600 ton/MWh	2015	<p>The projected company's absolute target for 2015 is 22.7 Mton of CO<sub>2</sub>, while keeping approximately the same emission intensity (0,285 ton CO<sub>2</sub>/MWh) as of 2011. This target is based on projections made in EDP Business Plan 2012-2015, assuming the following generation mix: 21.4% of Coal, 14.3% of CCGT, 2.1% of Co-generation, 30.2% of Hydro, 31.7% of Wind and 0.3% of Biomass.</p> <p>CO<sub>2</sub> emissions are expected to increase in the near future due to:</p> <ul style="list-style-type: none"> <li>- Very low price of CO<sub>2</sub> in the European market</li> <li>- High natural gas price compared with coal. Consequently, CCGT are less competitive than coal-fired power plants</li> <li>- Significant load factor decrease of CCGT in Portugal and Spain</li> <li>- Start-up of the Brazilian coal power plant (Pecém) in 2103 which will add about 1.7 Mton CO<sub>2</sub> per year to EDP's expected emissions (from the Iberian market)</li> <li>- Slightly lower investment in renewable worldwide in the period 2012-2015 (due to the economic crises)</li> </ul> <p>These trends, however, will likely change if the market circumstances change, namely CO<sub>2</sub> and fuel prices, which have a significant impact on the generation mix of the EDP Group.</p> <p>In order to integrate these circumstances, EDP is updating the former Business Plan 2012-2015. The updated version (2013 – 2015) has not yet been approved.</p> <p>It is expected that the company's global emission intensity will start to decrease from 2014/15 on, when the new hydropower plants and repowering under development, (representing about 2 GW additional capacity) will be fully operational.</p> <p>In spite of this expected increase in emissions in the near future, from 2005 to 2015E absolute emissions are likely to decrease 20%.</p>

Additional information

\* Only stationary combustion in power generation.

If it is an intensity target:

3.1b Please provide details of your **intensity** target

ID	Scope	% of emissions in Scope	% reduction from base year	Metric denominator (intensity targets only)	Base year	Base year emissions	Target year	Comment
I-1	Scope 1* (intensity)	99,8%	55%	MWh	2005	Absolute – 28 255 kt  Specific- 0,600 ton/MWh	2012	55% reduction of CO <sub>2</sub> emission factor (EF) from 2005 to 2012, in order to achieve an EF from 0,600 to 0,270 tonCO <sub>2</sub> /MWh. Due to a particularly dry year (very low hydro generation in Portugal) and market circumstances (the lack of an effective EU CO <sub>2</sub> market – very low price of CO <sub>2</sub> ; low price of coal in comparison to natural gas in the Iberian market; and the economic and financial crisis in Europe) the real EF value was 0,323 tonCO <sub>2</sub> /MWh. However, one should notice that this target, which was set in 2005, was based on generation mix trends that took into consideration mean hydrological years (IPH=1). Therefore, if 2012 had been an average year, hydroelectric generation in Portugal would have increased by approximately 100% (+5,6 TWh) and thus avoiding the same amount of generation by thermal power plants, in particular coal-fired, that operate in the diagram base-load. As a result, <b>the EF figure for the EDP Group would have been 0,265 tonCO<sub>2</sub>/MWh, i.e, in line with the established target.</b>
I-2	Scope 1* (intensity)	99,8%	70%	kWh	2008	Absolute – 19 784 kt  Specific – 0,400 ton/MWh	2020	In 2009, EDP committed itself to a more ambitious target, to reduce EF in 2020 by 70%, in comparison to 2008, in order to achieve an EF of 0,120 tonCO <sub>2</sub> /MWh.

3.1c Please also indicate what change in **absolute emissions** this intensity target reflects

ID	Direction of change anticipated in absolute Scope 1+2 emissions at target completion?	% change anticipated in absolute Scope 1+2 emissions	Direction of change anticipated in absolute Scope 3 emissions at target completion?	% change anticipated in absolute Scope 3 emissions	Comment
I-1	Decrease	36	No change	n.a.	Only scope 1 stationary combustion.
I-2	Decrease	50	No change		Only scope 1 stationary combustion.

For both types of target, also:

3.1d Please provide details on your progress against this target made in the reporting year

	% complete (time)	% complete (emissions)	Comment
I-1	100%	83%	Due to a particularly dry year (very low hydro generation in Portugal) and market circumstances (the lack of an effective EU CO <sub>2</sub> market – very low price of CO <sub>2</sub> ; low price of coal in comparison to natural gas in the Iberian market; and the economic and financial crisis in Europe) the real EF value was 0,323 tonCO <sub>2</sub> /MWh. However, one should notice that this target, which was set in 2005, was based on generation mix trends that took into consideration mean hydrological years (IPH=1). Therefore, if 2012 had been an average year, hydroelectric generation in Portugal would have increased by approximately 100% (+5,6 TWh) and thus avoiding the same amount of generation by thermal power plants, in particular coal-fired, that operate in the diagram base-load. <b>As a result, the EF figure for the EDP Group would have been 0,265 tonCO<sub>2</sub>/MWh, i.e, in line with the set target.</b>
I-2	33%	27,5%	Due to a particularly dry year (very low hydro generation in Portugal) and market circumstances (the lack of an effective EU CO <sub>2</sub> market – very low price of CO <sub>2</sub> ; low price of coal in comparison to natural gas in the Iberian market; and the economic and financial crisis in Europe) the real EF value was 0,323 tonCO <sub>2</sub> /MWh. However, one should notice that this target, which was set in 2005, was based on generation mix trends that took into consideration mean hydrological years (IPH=1). Therefore, if 2012 had been an average year, hydroelectric generation in Portugal would have increased by approximately 100% (+5,6 TWh) and thus avoiding the same amount of generation by thermal power plants, in particular coal-fired, that operate in the diagram base-load. <b>As a result, the EF figure for the EDP Group would have been 0,265 tonCO<sub>2</sub>/MWh, i.e, in line with the set target.</b>
A-1	71	100	

### Emissions Reduction Initiatives

3.2 Does the use of your goods and/or services directly enable GHG emissions to be avoided by a third party?

Yes

If yes: 3.2a Please provide details (see guidance)

#### i. How the emissions are/were avoided

ii. An estimate of the amount of emissions that are/were avoided over time, e.g. x metric tonnes CO<sub>2</sub>e per year with a 2007 baseline; x metric tonnes per year over a period of 10 years (2003- 2013)

iii. The methodology, assumptions, emission factors and global warming potentials (if you have expressed your carbon saving figure in CO<sub>2</sub>e) used for your estimations

iv. Whether you are considering generating CERs or ERUs within the framework of CDM or JI (UNFCCC).

i. On the supply side, the most significant initiative of EDP the 15.3 GW of wind and hydro installed capacity, which produces energy substituting power which would otherwise be produced by burning fossil fuels.

ii. In 2012, the total generation from Renewables was about 33 TWh that is estimated to avoid the emission of 22 million tons of CO<sub>2</sub> eq to EDP and to all clients using EDP's electricity.

iii. Assumptions: the renewable energy production avoids thermal generation.

The annual thermal emission factors for each country or state (USA) include just fossil fuel that emit CO<sub>2</sub> (coal, fuel oil, gas) and exclude nuclear and Special Regime Production (e.g, CHP, Biomass).

The calculation is based on the following sources: Portugal - EDP, Turbogás, Pego, Rede Eléctrica Nacional (REN), and Entidade Reguladora dos Serviços Energéticos (ERSE); Spain - Rede Eléctrica de Espanha (REE); Brazil - Ministry of Science and Technology - SIN (National Interconnected System); USA - state emission factors; Other European Companies - CERA, Global Insight.

iv. This activity will not generate CER or ERU.

In Portugal EDP has created an ESCO company – EDP Serviços – that provides energy efficiency services.

EDP has also many projects/businesses that avoid third party emissions. Examples:

(1) EDP Gás has a natural gas refuelling station at Braga, Portugal that provides fuel to public buses. In 2012 provided

593 755 m3 of CNG to Braga public bus, avoiding 358 TCO2e per year. In ten years EDP estimates to avoid 3581 TCO2e. Warming potentials from GHG protocol: 74.01 KgCO2/GJ gasoil, 56.06 KgCO2/GJ natural gas, 0.0336 GJ/m3 natural gas. This project will generate neither CERS nor ERUs.

(2) Electrical vehicle – EDP is one of the partners of the Portuguese MOBI.E program. This supports electrical vehicles providing the electrical supply infrastructure. Between 2010 and 2012 MOBI.E supplied 70 MWh thus avoiding approximately 100 TON CO2, about 33 Ton CO2 per year.

GHG emission factors diesel (2.798e-4 ton CO2/km), Portuguese national grid emission factor 2012 (228.61kgCO2/MWh). This project will generate neither CERS nor ERUs.

(3) EDP in Portugal, Spain and Brazil developed commercial services that promote energy efficiency and reduce CO2 emissions

(4) EDP promoted Energy Efficiency projects, the global energy saved these was 58.74 GWH (2012), thus avoiding 10,95TCO2.

The actions taken were: Advice on electricity savings (residential, tertiary, industry and public sector);Advice on energy rehabilitation of buildings; On Line Home Energy Management system with different servicing levels; Building and residential energy certification and auditing services; Energy certification (public sector, Industry, Commercial and Services); Household maintenance and repairs services on electrical installations; Monitoring electrical appliances consumption habits (Energy Efficiency Barometer); Gas Services (similar to the services offered in Spain); Energy efficient products (bulbs, lamps, solar electric bicycles, etc.); Installation services and modification of facilities; Technical services (installation and maintenance of transformers, power factor correction and support for maintaining the client’s electrical infrastructure); Energy Efficiency integrated solutions for businesses and public sector in public or private lighting systems; Distributed generation: solutions for micro and mini-generation, mainly through PV solar systems.

(5) EDP also promoted energy efficiency measures under the Portuguese Electrical consumption Plan (PPEC)- the global energy saved these was 164 GWH (2012), thus avoiding 60 TCO2.

The actions taken were: CFL distributed through IPSS (Social Solidarity Institutions), Efficient House Kit: LED + Standby Killer, Promotion of Efficient Lighting – LED, Standby killer – remote control, Knowatt, Astronomical digital time switch control for street lighting, Standard CFL in IPSS (Social Solidarity Institutions), LED traffic lights, Freecooling, Optimizing Cooling on large distributors – installation of evaporative condensation systems, high efficiency motors, Replacing discharge lamps with tubular fluorescent lamps, Variable Speed Drive (VSD) for ventilation systems, for refrigeration systems and for pumping systems.

(6) EDP is replacing transformers to sealed ones.

(7) Video conference

(8) Business travel – EDP has restricted plane travel within small distances. Comparing 2012 to 2011 EDP has saved about 1700 Ton CO2

(9) Heat transfer equipments in balnearies – Energy savings from 2 to 5%

(10) Vehicle geo location – Fuel consumption reduction of about 2%.

None of the above mentioned activities will generate CER or ERUs.

3.3 Did you have emissions reduction initiatives that were active within the reporting year (this can include those in the planning and/or implementation phases)

Yes.

*If yes, complete questions 3.3a, 3.3b and 3.3c:*

3.3a Please identify the total number of projects at each stage of development, and for those in the implementation stages, estimated CO2e savings (New for CDP 2012)

Stage of development	Number of projects	Total estimated annual CO2e savings (only for rows marked *)
Under investigation	5	1, 2 and 3 – CCS I&D projects under the FP7 <sup>th</sup> – The EU 7 <sup>th</sup> Framework Program: Project Decarbit, Flexiburn CFB and CMET. 4 – Electrical mobility – Pilot project of public charging infra-structures – 1030 charging points and 500 users; Commercial offer for home charging services 5 – Inovgrid – Till 2020 80% of the Portuguese clients will have access to intelligent grids. In Brazil there is also a smart grid project – Inovcity.

To be implemented*	4	<p>1- The EDP growth plans on renewable assets represent a solid commitment to foster the use of green energy sources. Over the next three years we expect to avoid above 75 million tons of CO<sub>2</sub>. In Portugal, in the next 5 years, EDP will add 1.7 GW of hydro capacity which, on an average hydrological year, will avoid about 5 million tons of CO<sub>2</sub>/year (assuming coal replacement). In Brazil, EDP is building a new hydro power plant (Santo António de Jari, 373 MW), which is expected to be fully operational by the end of 2014. This plant, assuming it replaces coal, will avoid about 1.4 million tons of CO<sub>2</sub> per year.</p> <p>2- PPEC 2013-2014: If all 25 tangible measures submitted were approved, the expected impact would be annual savings of about 174 GWh and 64 thousand tons of CO<sub>2</sub> emissions avoided.</p> <p>3- Energy services in Portugal, Spain and Brazil: expected CO<sub>2</sub> savings about 21 thousand Ton CO<sub>2</sub>.</p> <p>4- Internal eco-efficiency campaign similar to the one already commenced in EDP Renewables, with a focus on fostering environmental best practices in our offices. The expected results are to reduce consumption of electricity (3%), water (2%), paper (5%), tonner and other consumables (10%), plastic (5%) and mobility costs. A 3% drop in electricity consumption in all EDP office buildings represents about 1.2 MWh/year, i.e., 450 tons of CO<sub>2</sub> avoided/year.</p>
Implementation commenced*	4	<p>1- Save-to-compete programme: launched in June 2012 by EDP Comercial in cooperation with CIP (Portuguese Industry Confederation), this web-based programme (<a href="http://www.savetocompete.com">www.savetocompete.com</a>) aims at promoting and supporting the implementation of energy efficiency projects in companies and thus helping to improve their competitiveness. All companies that join this initiative receive a free energy diagnosis where potential savings are identified. The implementation of energy efficiency measures identified is promoted and funded through the savings generated. During the first year of implementation, the programme has already supported about 90 companies and led to savings of nearly 1.8 GWh and more than 800 tons of CO<sub>2</sub> (these savings are displayed online on the website).</p> <p>2- Internal Eco-efficiency campaign referenced in EDP Renewables Annual Report 2012, including a list of initiatives <a href="http://2012annualreport.edprenovaveis.pt/our-performance/positive-impact-on-the-environment-and-society/">http://2012annualreport.edprenovaveis.pt/our-performance/positive-impact-on-the-environment-and-society/</a></p> <p>3- PPEC 2011-12: the implementation of the 13 tangible measures approved under PPEC will lead to estimated annual savings of 164 GWh (12 million € in customer's bill) and 60 thousand tons of CO<sub>2</sub> emissions avoided, for an average lifetime of 12,5 years.</p> <p>4- Energy Efficiency programme of EDP distribution companies in Brazil: The investment in energy efficiency projects in 2012 amounted to R\$ 28.4 million, with savings totalling 25,539.94 MWh/year (corresponding to an average annual consumption of 14,714 households and customers' bill savings of R\$ 4.74 million) and leading to a peak demand reduction of 14.4 MW.</p>
Implemented*	7	<p>1 -In 2012, EDP business activity in Renewables avoided the emission of about 22 million tons of CO<sub>2</sub>e. This figure is expected to grow in the near future thanks to the planned investment in renewables worldwide (hydro, wind and solar).</p> <p>2 – Econosco – Employer's energy saving campaign</p> <p>3 – Energy efficiency services Portugal</p> <p>4 – Energy efficiency services Spain</p> <p>5 – Energy efficiency services Brazil</p> <p>6 - – Energy efficiency measures</p> <p>7 – Distributed generation Portugal</p>
Not to be implemented	0	

### 3.3b For those initiatives implemented in the reporting year, please provide details in the table below

Activity type	Description of activity	Estimated annual CO <sub>2</sub> e savings	Annual monetary savings (unit currency)	Investment required (unit currency)	Payback period
Low carbon energy generation - Renewable energy generation	CO <sub>2</sub> e emissions avoidance due to electrical generation from renewable energy sources, instead of fossil fuel	22 million tons of CO <sub>2</sub> e, a 47% increase compared to 2009.	Monetary savings can be related to company revenues	Investment is the company CAPEX figure for renewables: 61.6% of the company operational investment in 2012 (2,011 million euros).	15 Years
Energy Efficiency processes Eco-efficiency campaign (EDP Renewables)	Campaign to adopt sustainable practices in offices has been designed, based in 4 pillars: - Reduction of Paper Consumption - Reduction of Waste - Reduction of Electricity Consumption - Reduction of Water Consumption	86.42 tons /year In addition, to water savings and trees saved.	35,524.97 €/year	36,955 €	1 year .

Energy Efficiency processes	Energy Efficiency Integrated Services for large consumers in the industry, Commerce and Service sectors	3.4 thousand tons (EF= 0.2286 tCO <sub>2</sub> /MWh)	Annual Savings: 15 GWh, corresponding to 2.5 million €	6 million €	4 years
Energy Efficiency Services in Portugal					
Energy Efficiency Services in Spain	Energy Efficiency Integrated Services for large consumers in the industry, Commerce and Service sectors	5.8 thousand tons (EF= 0.3214 tCO <sub>2</sub> /MWh)	Savings: 18.2 GWh, corresponding to about 3.31 M€	6 million €	4 years
Energy Efficiency Programme in Brazil	Energy Efficiency Integrated Services for large consumers in the industry, Commerce and Service sectors	1.75 thousand tons (EF= 0.0686 tCO <sub>2</sub> /MWh)	Savings: 25.54 GWh, corresponding to 4.74 million \$R	28.4 million \$R	c. 6 years
Energy Efficiency measures (PPEC programme)	CFL distributed through IPSS (Social Solidarity Institutions), Efficient House Kit: LED + Standby Killer, Promotion of Efficient Lighting – LED, Standby killer – remote control, Knowatt, Astronomical digital time switch control for street lighting, Standard CFL in IPSS (Social Solidarity Institutions), LED traffic lights, Freecooling, Optimizing Cooling on large distributors – installation of evaporative condensation systems, high efficiency motors, Replacing discharge lamps with tubular fluorescent lamps, Variable Speed Drive (VSD) for ventilation systems, for refrigeration systems and for pumping systems	60 thousand tons (EF=0.37 tCO <sub>2</sub> /MWh – figure recommended by ERSE)	Savings: 164 GWh, corresponding to about 12 million €	6.5 M€	Less than 1 year
Distributed generation Portugal	Photovoltaic systems mainly for B2C and B2B in a turn-key model	Total 1845 t (EF= 0,2286 tCO <sub>2</sub> /MWh)	8.0 GWh corresponding 1.93 million €	10.5 million €	5 years

### 3.3c What methods do you use to drive investment in emissions reduction activities? (CDP 2011 Q3.3b, no change)

Method	Comment
Compliance with regulatory requirements/standards	<ul style="list-style-type: none"> <li>- Switching electrical generation from gas and coal to wind and hydro is also a consequence of the restrictions to CO<sub>2</sub> emissions due to the European Trading System EU-ETS.</li> <li>- In Brazil, by regulatory obligation, EDP distribution companies dedicate 0.5% of their revenues for energy efficiency projects.</li> </ul>
Dedicated budget for energy efficiency	<ul style="list-style-type: none"> <li>- In Portugal, EDP dedicates about 2 M€/year for voluntary energy efficiency measures under the ECO EDP Programme (<a href="http://www.eco.edp.pt">www.eco.edp.pt</a>). The ECO EDP integrates, among other initiatives such as tools, simulators, tips, energy efficiency campaigns, etc., the measures carried out under the PPEC (Promotion of end-use electricity efficiency Plan) approved by ERSE, the Portuguese Energy Regulator (<a href="http://www.erse.pt">www.erse.pt</a>). EDP supports about 15% of the investment needed to carry out these measures and the remainder is supported either by PPEC and/or the target consumers.</li> <li>- In Portugal and in Spain, EDP provides energy efficiency services to all economic sectors as a new core business activity. For 2012/2015, the active promotion of DSM, either for b2c and b2b segment, will be strengthened and subject to massive phased roll-outs on the three strategic DSM axes (Energy Efficiency, Load Optimisation and Fuel Switching) due to: a greater customer orientation, the internal know-how developed so far on energy efficiency management and the pilot projects and on-going innovation activities in the pipeline (eg. SmartGrids, Innovcity, electric mobility). In Spain, the savings achieved in 2012 due to energy efficiency services to all customers amounted to 18.2 GWh, representing a 23% growth compared to 2011. In Portugal, besides the PPEC already mentioned above, the execution of PIEE (Energy Efficiency Integrated Services) in 2012 for large consumers in the industry, Commerce and Service sectors, lead to annual savings of 15 GWh, bill reduction of 2.5 M€ and about 4 kton CO<sub>2</sub> avoided.</li> <li>- In Brazil, by regulatory obligation, EDP distribution companies dedicate 0.5% of their revenues for energy efficiency projects.</li> </ul>
Dedicated budget for low carbon product R&D	EDP has a dedicated budget for low carbon product R&D, namely through its R&D company, EDP Inovação, this is developing projects such as off-shore wind power, wave power, CO <sub>2</sub> capture and storage, energy efficiency, smart grids, electric mobility, among others. The R&D and Innovation activities of the EDP Group totalled EUR 32 M in 2012. This includes a Venture Capital – Risk Capital Fund, which is managed by EDP VENTURES and had invested, by the end of 2012, more than EUR 7 million in innovative companies and funds in the clean tech area. It has also made an additional investment commitment of EUR 5 million.
Employee engagement	Electricity, water and paper consumption reductions in EDP's buildings, as well as waste management, are internal energy efficiency projects developed mainly by employees.

Financial optimization calculations	Emission reduction activities represent in some cases new business areas, and in a short time they can contribute to EDP's revenue.
Internal price of CO2	Factor taken into account when analysing investments in new projects such as new power plants.

If no: 3.3d If you do not have any emissions reduction initiatives, please explain why not (CDP 2011 Q3.3c, no change)

n.a.

#### 4. Communications

4.1 Have you published information about your company's response to climate change and GHG emissions performance for this reporting year in places other than in your CDP response? If so, please attach the publication(s)

Publication	Page/Section reference	Identify the attachment
EDP Annual report	19; 26; 30;62; 63; 64; 280	2012 EDP Annual Report
EDP website		
EDP 2050	This is an electrical market simulator that allows everybody to analyse future implications of current investment decisions.	<a href="http://www.2050.edp.pt/homepage.aspx">http://www.2050.edp.pt/homepage.aspx</a>
ON Magazine February 2013	54	
EDP Renováveis website		<a href="http://www.edpr.com/es/sostenibilidad/medio-ambiente-y-cambio-climatico/cambio-climatico/">http://www.edpr.com/es/sostenibilidad/medio-ambiente-y-cambio-climatico/cambio-climatico/</a>
EDP Renováveis Annual Report	Page 26, 30	<a href="http://2012annualreport.edprenovaveis.pt">http://2012annualreport.edprenovaveis.pt</a>
Save as portal		<a href="http://www.save-as.org/">http://www.save-as.org/</a>
Environmental Statement 2011 of Sines Thermal Power Plant	Page 64	
Environmental Statement 2011 of Ribatejo Thermal Power Plant	Page 57	
Environmental Statement 2011 of Hydro Power Plants	Pages 94, 96, 99, 101, 104	
A2E presentation		

# Risks & Opportunities

## 5. Climate Change Risk

5.1 Have you identified any climate change risks (current or future) that have the potential to generate a substantive change in your business operations, revenue or expenditure?

Please identify the relevant categories:

### 5.1.a. Risks driven by changes in regulation:

ID	Risk Driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood of impact	Magnitude of impact
RR01	Fuel energy taxes and regulations	Regulatory risk in Iberia Due to the economic crisis in Portugal and Spain there is a pressure on electricity tariff deficit reduction.	Increase in operational costs	Current	Direct	Likely	Low-medium
RR02	Fuel energy taxes and regulations	Changes in the legislator incentives to wind and solar energy. These incentives can be a feed in tariff, a tax credit or a capital incentive. Its decrease can cause a reduction in wind power revenues in Europe, USA and Brazil.	Other – Decrease in revenues	Current	Direct	More likely than not	Low-medium
RR03	Fuel energy taxes and regulations	Changes in wind farms permit regulation. Decrease in wind farms authorizations	Increased operational costs	Current	Direct	Very unlikely	Medium
RR04	CO2 Taxes	CO2 regulation in Europe. Volatility in thermal revenues.	Other – Decrease in revenues	Current	Direct	Likely	Low
RR05	Fuel energy taxes and regulations	Environmental laws and regulations that constrain the location of power plants and/or distribution grids	Other – Decrease in revenues	Current	Direct	About as likely than not	Medium
RR06	Fuel energy taxes and regulations, CO2 Taxes	Uncertainty surrounding new Federal regulation in Brazil	Reduction in capital availability	Unknown	Direct	More likely than not	Medium
RR07	CO2 Taxes	Creation of new Regional Markets (State Policies) in Brazil	Increased operational costs	1-5 years	Direct	More likely than not	Medium

### 5.1.b. Please describe:

i. the potential financial implications of the risk/opportunity before taking action

ii. the methods you are using to manage this risk/opportunity

iii. the costs associated with these actions

**Risk RR01** - Due to the economic crisis in Portugal and Spain there is a pressure on electricity costs thus decreasing renewable incentives. The most relevant decisions already taken for Portugal included cuts in capacity payments and the CMECs.

In Spain there were cuts in capacity payments, in the distribution revenues, in the national coal incentives, in the transport system operator, in the social tariff fund and in the gas access tariffs.

EDP considers this risk to be bigger in Spain.

EDP is much protected due to its diversified generation mix, diversified geographies, diversified asset maturities and diversified activities.

i. The potential financial implications of this risk are very low. The major changes were already made and represented less than 2% of EBITDA.

ii. This risk is mitigated through a close follow up of regulatory bodies and through generation mix, geography, asset maturity and market diversification. EDP works with governments, in Portugal EDP is a Member of the Tariff Council and the Consultive Council of ERSE Portuguese Energy Services regulator. Under this membership EDP has participated in public discussions of: (1) the consumer efficiency promotion plans, (2) technical advices on the electrical grid operation and commercialization regulation, (3) harmonization of integration of renewable and special regime production in MIBEL, (4) Electricity and Gas regulations

iii. The main cost associated with the regulatory follow-up is the annual budget for the Departments that do the regulatory follow-up. These Departments exist for Portugal Spain, Brazil and USA. Their budget is about 5 MEuro per year. On the other hand, generation mix, geography, asset maturity and market diversification of EDP's generation assets have no marginal cost, since they are consequence of the company's strategy.

**Risk RR02** - Changes in the legislator incentives to wind and solar energy. These incentives can be a feed in tariff, a tax credit or a capital incentive. Decrease in wind power revenues can impact business both in Europe and USA.

i. The potential financial implications of the risk before taking action depend on the country and on the intervention from the regulators/policy makers. It may affect the remuneration of the current wind farms, but mostly it can also affect company's growth (the intervention may make new investments less attractive). EDP's maximum exposure is very small since it is very unlikely and difficult to change past contracts, PPAs and regulated represent 90% of total output, the remaining 10% is not covered by this risk since they are on the spot market. Thus this risk is most likely smaller than 1% revenues, considering 2012 values it would be smaller than 10 MEuro.

ii. Same response of RR01

iii. Same response of RR01.

**Risk RR03** - Changes in wind farms permit regulation. Decrease in wind farms authorizations.

i. This risk may affect company's targets in terms of growth, and consequently EBITDA.

ii. This risk is mitigated through a close follow up of regulatory bodies and through generation mix, geography, asset maturity and market diversification.

iii. Same response of RR01.

**Risk RR04** - CO2 regulation in Europe. EU unclear signals regarding the EU-ETS. CO2 price heavily influences the return on investment, the current generation mix, and the future generation portfolio. These decisions represent large investments and need a long time frame to be in place, so the CO2 price strategy should be maintained in order to allow the market players to have some visibility about the future.

i. CO2 regulation heavily impact on electrical market. The financial impact is loss of EBITDA.

ii. This risk is largely mitigated through a technological and geographical diversified generation mix of EDP, namely the investment in CCGT and in wind, hydro and solar, and the investment in different geographies.

iii. The costs associated with these actions are the investment, in 2012, on renewable energy (wind) of 600 MEuro and on Hydro 450 MEuro. These investments are part of EDP's Strategic Plan.

**Risk RR05** - Environmental laws and regulations that constrain the location of power plants and/or distribution grids.

i. This risk affects capex expenditure and can also decrease the revenues from the project.

ii. During the project phase the project team takes into account the possible restrictions that might appear.

iii. The cost of this action is embedded in the project phase costs, thus being impossible to disaggregate.

**Risk RR06** - In December 2009, Brazil adopted Law No. 12187 which established the first National Policy on Climate Change. The policy aims to align the economic and social development with the climate change protection. In addition, sectorial plans will be established for mitigation and adaptation of climate change in order to achieve the national commitment to voluntary reductions of 36.1% to 38.9% GHG emissions by 2020, according to the national policy. In December 2010 some articles of the National Policy on Climatic Changes were regulated. The regulation mention the 'Ten Year Plan for Energy Expansion', where will be set reduction targets and procedures for energy sector, which currently presents 868 million tCO<sub>2</sub>e, 26% of the all Brazilians emissions. To achieve this commitment, actions aiming to expand supply hydroelectric power, supply from renewable sources (wind, small hydro, biofuels and bioelectricity) and increase energy efficiency will be implemented. EDP follows the updates of national and international regulations and is aware of sectorial plans, which will be defined over the coming years. EDP currently prepares its emissions inventory and evaluates potential opportunities to reduce emissions in their operational and administrative processes. In 2012, the environmental agency of the State of São Paulo, established the criteria for the greenhouse gases emissions inventories, thus establishing the bases for some of the most important economy sectors to evaluate and report their GHG emissions.

- i. The estimated Risk exposure of EDP to this risk is less than 10 MEuro per year.
- ii. The same of RR01. Also EDP participates in major discussion fora about regulation and taxation in Brazil, contributing to a better understanding of challenges and opportunities of climate change to the electricity sector, and to the national private sector. The company actively participates in national initiatives, such as the Brazil GHG Protocol Programme and EPC – Empresas pelo Clima (Companies working for Climate Change), led by Fundação Getúlio Vargas (Getúlio Vargas Foundation) and other international institutions. The company has also integrated the Brazilian Delegation in the last COPs.  
EDP in Brazil currently prepares its emissions inventory and evaluates potential opportunities to reduce emissions in operational and administrative processes for the last 6 years, setting reduction targets and considering climate change its activities. In addition EDP is constantly participating in internal and external fora about regulation and Climate Change issues in order to build up knowledge.
- iii. Monitoring of changes being undertaken within legislation and regulation and participation in fora to discuss how to influence regulation and to implement best practices and technologies related to climate change management. Costs are associated with investments in new technologies, associations funding and the EDP Brazil Regulation Department budget. The latest is about 1,6 million Euro annually.

**Risk RR07** – Currently some States in Brazil are organizing themselves to establish policies and regulations regarding GHG emission reduction. The most advanced State is Rio de Janeiro which has already established a State Policy on Climate Change with caps applied to some sectors. Currently the Energy sector is not required by law to reduce emissions. The law only states that the total clean or low carbon energy that has to be generated in Rio, have to increase in a rate of 40% between 2010 and 2030. In the next years it is expected for this law to evolve and include the energy Sector in the caps.

- i. This risk is considered to be less than 20 MEuro.
- ii. The same of RR01 and EDP currently prepares its emissions inventory and evaluates potential opportunities to reduce emissions in their operational and administrative processes.  
EDP Brazil considers that current operations, distribution and generation, are very much prepared to reduce GHG emissions. EDP Brazil participates in major discussion fora about regulation and taxation, EDP actively participates in national initiatives, such as the Brazil GHG Protocol Program and EPC – Empresas pelo Clima, led by Fundação Getúlio Vargas (Foundation) and other international institutions. The company has also integrated the Brazilian Delegation in the last four COPs.  
EDP has made its GHG Inventory in the last 5 years, setting reduction targets and considering climate change aspects on its activities.
- iii. To be part of EPC, FGV charges 19,444.44 USD per year. Next years laws shall mature and the energy Sector might be included in the caps.

### 5.1.c. Risks driven by changes in physical climate parameters:

Risk ID	Risk Driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood of impact	Magnitude of impact
RPC01	Precipitation and wind volatility	Hydro generation is an important component of our generation assets, especially in Portugal and Brazil. Any climate change implying a decrease in rainfall results in less hydropower generation. This decrease may not be balanced by higher energy prices. The wind volatility affects wind farms production.	Other – Decrease in operational income	Current	Direct	More likely than not	Low-medium
RPC02	Change in temperature extremes	<p>IMPACT ON GENERATION</p> <p>Higher temperatures can disturb power plant normal operation, due to the cooling source's temperature being already outside of its legally admissible values even before its use at the power plant.</p> <p>Higher temperatures decrease the volume compressed air inserted in the combustion chambers thus decreasing energy generation</p> <p>IMPACT ON WATER DEMAND</p> <p>Higher temperatures can also result in increased population's water consumption, thus reducing available water in multiple use reservoirs.</p>	Other – Decrease in operational income	Current	Direct	More likely than not	Low
RPC03	Change in extreme precipitation and droughts	Events, such as abnormal precipitation, droughts, extremely strong winds, pronounced sea waiving at seashore and sudden increases in algae coming in from the sea, can be accentuated by climate changes and have caused rare business interruptions at both thermal and hydropower plants. Extreme precipitation can also cause floods, dam overflow and landslides. Droughts may imply extra reservoir water expenditure in activities such as irrigation and maintenance of ecological flows, with inherent loss of energy generation/revenue, when these water flows are not turbinated or when they are released during off-peak hours (lower energy prices).	Increased operational costs	Current	Direct	More likely than not	Low
RPC04	Tropical cyclones	Under extreme winds, wind farms shut down for safety purposes. The increased frequency of wind automatic cut-off shut could have an effect on the turbine's wear, thereby increasing maintenance costs and/or reducing life span. Extreme winds can also affect distribution and the transmission grids likely limiting EDP's capacity to generate and supply energy in power stations.	Increased operational costs	Current	Direct	Likely	Medium
RPC05	Other physical climate drivers	Episodic events of particularly frequent and intense storms with lightning can be very damaging to electrical grids, wind turbines and any weather exposed electrical devices in general. This impact must be considered since the frequency and intensity of such storms may increase due to climate changes. The frequency and intensity of these events has already increased.	Increased operational costs	Current	Direct	Likely	Medium

RPC06	Other Physical climate drivers	Under a varying atmospheric pressure, the operation of natural gas pipelines, such as the ones EDP has in Portugal and Spain, can become more challenging, since safety controls are particularly sensitive to pressure, increasing the risk of preventive shut-down and, over time, increased wear of pipelines and valves, thus increasing operation and maintenance costs and/or reducing life span.	Increased operational costs	Current	Direct	Likely	Medium
RP07	Change in extreme temperature	Impact on demand The change in extreme temperatures might affect the peak load, increasing electricity demand and at the same time affect distribution and generation, causing less energy availability	Other – Decrease in operational income	Current	Direct	More likely than not	Low-medium

**5.1.d. Please describe:**

**i. the potential financial implications of the risk/opportunity before taking action**

**ii. The methods you are using to manage this risk/opportunity**

**iii. The costs associated with these actions**

EDP has the EMAS registration for 41% of installed capacity in Pt and Spain and ISO 14001 certification worldwide (76% installed capacity). The ISO 14001 section that addresses these subjects is 4.4.7 – emergency preparedness and response.

There is also a range of insurances for the Group's assets in operation. So, the maximum physical risk cost incurred is mostly transferred out of the EDP Group (except for partial revenue losses and tail-end events). EDP has also a strategic captive insurance policy based in Luxembourg (Energia RE) that secures the small losses not covered by the insurers' pool.

**Risk RPC01**

i. Depending on the regulatory context the financial implications of this risk could go from a negligible value until about a 10 M€.

ii. EDP is building reversible hydropower plants that allow the storage of electricity generated in base loads hours. The energy stored is mainly from wind farms and during peak hours it replaces mainly energy that would be produced from fossil fuel power plants. The Sabor dam, under construction, is a reservoir dam located in an upstream position of Douro, the most affluent river in Portugal. This dam will allow water storage for consumption and energy generation in all power stations in Douro located downstream the Sabor dam. This allows for Portugal to have electrical consumption independency (for peak hours) for about 30 days.

The wind farms are geographically diversified

iii. The new hydropower plants that EDP is building have investment costs. These are not direct costs associated with the management of this risk, but this risk will be partially mitigated by the new hydropower plants, it is a collateral benefit from building the dams. Investments in new hydro plants comprise: conclusion in 2011 of repowering works at Picote II (246MW) and Bemposta II (191MW). In 2012 conclusion of works in Alqueva II (256MW of hydro reversible plant with reservoir, 'HRPP with reservoir'), ongoing construction of Baixo Sabor (172MW of HRPP with reservoir), Ribeiradio-Ermida (81MW with reservoir), Foz Tua (252MW HRPP with reservoir), repowering of Venda Nova III (756 MW HRPP with reservoir) and Salamonde II (207MW HRPP with reservoir); and development of other hydro plants in pipeline, up to 1GW capacity. Investments in new hydro named above represented about 450 million Euro in 2012.

**Risk RPC02**

i. The potential financial implications is less than 500 thousand Euro, this value was obtained for an outage of a typical CCGT for a full week.

ii. In new thermal power plants, the cooling system is based on cooling towers instead of condenser, using a much lower water volume and introducing a much smaller change in temperature. In new CCGTs at higher temperatures there is also a decrease in efficiency, at high temperature the volume of compressed air fed into the combustion chamber is lower than at moderate temperatures. As an example EDP has built in Portugal, two CCGTs with this technology TER and Lares. Regarding the reservoirs multi use, EDP has been establishing long term partnerships with all stakeholders, namely the water supply companies.

iii. EDP's generation mix, geographical, asset maturity and market diversification also mitigates this risk. EDP's Capex is not a direct cost but this risk will be partially mitigated by the new plants and infrastructures, it is a collateral benefit. Capex for 2012 till 2015 will be approximately 2 billion Euro per year in wind and hydro.

#### Risk RPC03

i. The potential financial implications is less than 500 thousand Euro, this value was obtained for an outage of a typical CCGT for a full week.

ii. This risk is managed through risk prevention measures, such as: placing equipments at a superior height (Ribatejo), algae cleaning systems (in Sines the algae explosive growth in the cooling source was due to a local increase in sea temperature), in hydropower plants duplication of floodgates circuits and the placement of diesel emergency groups in flood protected sites. During the dry and the flood seasons EDP closely works with the Meteorological and Civil Protection authorities thus achieving better performance. EDP's hydropower plants are also projected to support the so called "flood of the millennium".

iii. The costs of these actions are evaluated, per example the algae cleaning systems did cost around 1.5 EUR Million.

#### Risk RPC04

i. The potential financial implications are less than 4 MEuro (before insurance). Insurance considerably reduces this cost.

ii. In electricity distribution, extreme winds can cause major incidents. In order to assess its influence, EDP (in Portugal) created an incident database and some conclusions are already available about predictable future risks. The extreme wind phenomena can cause supply interruptions causing economic and reputational costs: the fall of electric lines and the impossibility of power plants to connect to the grid and sell their generation, among others. The Distribution Company is developing a geo-referenced platform that will allow the assessment of any event's severity and help define operation, maintenance or engineering actions. In Portugal, during the storm and fire seasons, EDP manages differently the emergency teams and the stocks ensuring a faster and more effective corrective action. In most important urban areas, substations are also redundant. These actions reduce interruption in the event of a catastrophe.

In Brazil, EDP developed SITRaios to manage the grid physical risks. This system automatically detects thunder storms (that usually precede grid shutdowns), allowing real time intervention in the prevention of future grid shutdowns.

iii. The SITRaios project has an investment of approximately 850 thousand EUR.

Risk RPC05 – In the last years the frequency and the intensity of these extreme weather events are increasing. These can be particularly hard when there is a combination of extreme rain and extreme winds like the ones that occurred during the Gong Storm (2013) in Portugal.

i. The costs can be more than 15 million Euro before insurance only from equipment damage.

ii. EDP has business continuity procedures and in strategic areas EDP has created Business Continuity Departments to ensure that disregarding extreme weather events the key processes will not be affected.

In Brazil, EDP developed SITRaios to manage the physical risks of the grid. This system automatically detects thunder storms that usually precede grid shutdowns, allowing real time intervention in the prevention of future grid shutdowns.

iii. In Portugal the distribution company manages the storm and the wildfire seasons differently from the rest of the year increasing the material stock and enlarging the number of the emergency teams. All preventing activities are evaluated and its costs known. As an example a Business Continuity Department annual budget is around 500 thousand Euro.

In Brazil the SITRaios project has an investment of approximately 850 thousand EUR.

Risk RPC06 - The gas grid project incorporates best practices in what regards the avoidance of risk areas. These include the gas grid in ring layout that prevents supply interruptions.

EDP's gas company has also special procedures focused on physical risks, which are: the safety and health manual, the accident's analysis and the two-monthly safety and health follow-up meeting.

The costs of these actions are incorporated into the Gas Technical Division budget therefore not easy to quantify, but one can roughly estimate about 80 thousand Euro per year in Portugal.

RP07 - The change in temperatures might affect the peak load, increasing electricity demand and at the same time affect distribution and generation, causing less energy availability. High temperatures and increased demand can overload the electrical grid thus causing circuit breaks and distribution service interruption. Generation might be affected by the high temperature of the cooling source. In an event in which these factors do coexist the electrical service might be affected.

- i. This risk can cause a decrease in revenue in about 1-2% in the days in which it occurs, at the most 5 days per year
- ii. The best strategy for this risk is diversification, of assets, of technologies life cycle, geographical, among others.
- iii. The same as RPC01 and RPC02.

#### 5.1.e. Risks driven by changes in other climate-related developments:

Risk ID	Risk Driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood of impact	Magnitude of impact
RCC01	Reputation	Social liabilities - Operations in dam's reservoirs during floods - Water discharges in dam's reservoirs, in successive flood situations, are not always well understood by some stakeholders, such as environmental NGO. This may affect EDP's reputation.	Wider social disadvantages	Current	Direct	likely	Medium-low
RCC02	Induced changes in human and cultural environment	Personnel risk related to climate change, both directly, through death or illness in the event of extreme weather conditions (ex: heat waves, cold waves, hurricanes, bush fires, among others), and indirectly, through epidemics and facilitated disease spreading (ex: after floods), or chaos and disorder (ex: inability to reach working place or leave their home).	Reduction/Disruption in generation capacity	Current	Direct	likely	Medium-low
RCC03	Uncertainty in market signals	Climate change may cause consumer demand volatility or industrial consumption reduction or changes in sector tariffs causing reduction of energy market value in the energy sector	Reduced demand for goods/services	Current	Direct	unlikely	Medium-low
RCC04	Change in consumer behavior	EDP's Consumers (B2B and B2C) might be subjected to Climate Change Regulations like the use of low emission products. In order to cope with it, EDP clients may be forced into extra costs.	Reduced demand for goods/services	Unknown	Indirect	unlikely	Medium-low

**5.1.f. Please describe:**

**i. The potential financial implications of the risk/opportunity before taking action**

**ii. The methods you are using to manage this risk/opportunity**

**iii. The costs associated with these actions**

**Risk RCC01 – Reputation**

i. the potential financial implications of this risk can be brand value degradation. EDP's brand is evaluated (2012) in 2,4 Thousand Million Euro, if this risk occurs a reasonable value is about 5%, 240 Million Euro.

ii. EDP has been developing a pilot project, ComPro (Comunicação de Grandes Projectos - Communication Plans and Procedures for major Projects), whose main objective is the strengthening of the bi-directionality of the communication with stakeholders and the improvement of communication in sustainability and environmental issues. This project is being applied to some new investments such as new hydropower plants. In the near future, EDP aims to extend the ComPro methodology to the major investments.

EDP also has a dedicated website for the communication of new hydropower plants ([www.a-nossa-energia.edp.pt](http://www.a-nossa-energia.edp.pt)). EDP has developed social innovation projects in some of the regions in which new hydropower plants are being constructed. These projects include entrepreneurship enhancement through capacity building development (human capital), through product promotion in new markets, namely emerging ones, and through the empowerment in social institutions, among others.

iii. The dedicated website cost around 65 thousand Euro to implement and 5 thousand Euro annually to maintain. Social innovation projects – About 800 thousand Euro in 2010.

**Risk RCC02 – Induced changes in human and cultural environment**

i. the cost associated with this risk is the loss of revenue. This can be a loss in generation, distribution and commercialization; this would be less than 15 million.

ii. EDP has a Corporate procedure that establishes the principles, structure and procedures regarding the Crises and Business Continuity Plans (CCBCP), that must be produced by the main BU, these must address the mitigation actions that must be taken when some exceptionally harmful event occur. These plans are being developed, or already exist for key areas/events such as power plants, electrical distribution, main data processors, pandemics, among others. The plans (will) include emergency plans and frequent emergency drills. All key workers are (will be) identified, have (will have) a VPN access and know (will know) which should be their actions to cope with the situation. EDP has also personnel insurance that covers most of these events and support employees.

iii. The costs associated with the management of these risks are included in the Corporate Risk Department and in the Health and Safety Department Budgets, about 2 million.

**Risk RCC03 – Uncertainty market signals**

i. The impact is measured as a percentage of revenue, 4%.

ii. EDP manages the future risk through scenario analysis performed by the Energy Strategic Department. EDP performs long term energy outlook studies for new investment decisions, for adapting to new government or EU energy strategy. These were performed to renewable energy and electrical vehicle investments and demand trends, such as decentralized generation, decentralized storage, amongst others.

EDP has developed side demand models that incorporate changes in consumer volatility. This is perceived as a business opportunity and EDP has created EDP Serviços an ESCO company that provide efficiency and CO2 services

iii. The costs of these risks are included in the Department budgets, about 2 million Euro.

**Risk RCC04 – Changing consumer behavior**

This risk is rather unlikely and its impact is very much uncertain.

i. The financial impact is a reduction on electricity sales. The impact is measured as a percentage of revenue, about 4%.

ii. EDP manages the future risk through scenario analysis performed by the Risk and the Energy strategy department.

iii. The costs of these risks are included in the Department budgets and are about 2 million per year.

## 6. Climate Change Opportunities

6.1 Have you identified any climate change opportunities (current or future) that have the potential to generate a substantive change in your business operations, revenue or expenditure?

Please identify the relevant categories:

### 6.1.a. Opportunities driven by changes in regulation:

Risk ID	Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood of impact	Magnitude of impact
OR01	Cap and trade schemes	Cap and trade impact the electrical generation mix. EDP's strategy strongly supports renewable energy generation even if the regulatory signals are not so supportive.	Increase demand for products/services	Current	Direct	Virtually certain	High
OR02	Fuel energy taxes and regulations	Taxes and regulations on fossil fuel will most probably force the shift towards clean mobility (electric and natural gas).	New products/business	1-5 years	Direct	Virtually certain	High
OR03	Voluntary agreements	CO2 emission compensation services and green energy commercialization	New business/products	Current	Direct	Virtually certain	Medium
OR04	Cap and trade schemes	CDM projects developed by EDP in Brazil.	New products/business	Current	Direct	Virtually certain	Medium
OR05	Other regulatory drivers	Renewable generation in countries where wind power is currently underdeveloped	Increase demand for products/services	Current	Direct	Virtually certain	Medium
OR06	Fuel energy taxes and regulations	In regulated activities (distribution and last resource supply) costs may be recognized, if proven the need to invest more in assets in order to guarantee service quality levels, while selling electricity at a fixed price.	New products/business	Current	Direct	Likely	Low
OR07	Other regulatory drivers	Wind offshore generation regulation in Europe will most probably give EDP new opportunities. EDP has since January 2010 the permission to develop (with sea energy) 1.3 GW of offshore wind turbines in Scotland.	Increased generation capacity	Current	Direct	Likely	Medium-High
OR08	Other regulatory drivers	European and national legislation concerning ESCOs create a business opportunity in utilities	New products/business	Current	Direct	Very Likely	Medium
OR09	Other regulatory drivers	Financial incentives to reduce electricity use.	New products/business	Current	Direct	Very Likely	Medium

## 6.1.b Please describe:

### i. The potential financial implications of the risk/opportunity before taking action

### ii. The methods you are using to manage this risk/opportunity

### iii. The costs associated with these actions

Regulatory opportunities are constantly monitored by the Regulation and Competition Department in different companies and geographies, as well as by the Energy Strategic Departments, in Iberia and Brazil.

#### OR01

i. There is a considerable market for renewable energy reinforced by CO2 emissions restrictions. In the next years it is estimated that the operating cashflow from renewable will constantly grow. In 2012 it has already surpassed the billion Euro.

ii. This opportunity is managed by EDP Board using the inputs from the Regulation and Competition Department and the Energy Planning Departments. The strategy is implemented via the EDP Renewable company, EDPR.

iii. The cost associated with this opportunity is the Capex on wind and Hydro. Capex in renewable + hydro in 2012 was about than 1.2 Billion Euro.

#### OR02

Clean mobility is an opportunity because: it consumes electricity and gas. In electrical mobility vehicles have zero local emissions and can consume electricity mostly during off-peak hours this might help to regulate the grid. In natural gas mobility CO2 savings are materially relevant thus compensating other business emissions.

i. The potential market for electrical mobility for EDP is the sale of electricity for mobility that will account for about 8.5 MEuro, based on 19 000 vehicles for 2020.

The potential market for natural gas mobility is about 10 MEuro.

ii. In Portugal EDP has currently 17 electrical vehicles and EDP has also installed 400 charging locations. In next years it is planned to develop the business in two lines: pilot project of public charging infrastructure with 1030 charging points, and achieving the 500 users. At the same time there will be a commercial effort to provide home charging services.

In Spain EDP has a partnership with Mitsubishi in which when a car is sold EDP installs the charging system at the client's house. In 2010 EDP in Brazil has inaugurated the first electric vehicle recharging network, with 20 points in the Brazilian states of São Paulo and Espírito Santo. The network is used for recharging 90 bicycles donated by EDP to military and municipal police forces and environmental authorities.

In Portugal EDP is already selling natural gas for the public transport of Braga and Oporto.

iii. Investment associated – Electrical mobility 2 MEuro.

Natural gas mobility – 300 thousand euro per new client (infrastructure).

#### OR03

i. The potential market for the next years 5 could be about 10 MEuro just for the RECs business.

ii. Presently EDP sells green energy, energy certified by RECs, Renewable energy certificates issued by AIB, the Association of Issuing Bodies, to a small group of clients. EDP is currently developing a green services business area that will provide the clients with efficiency services, green energy and CO2 footprint evaluation and compensation. This is a promising area because many businesses are actually under great pressure to cope with voluntary sustainability evaluations in which these products are key factors.

iii. The costs associated with this opportunity are the commercial selling structures that not only sell these products but also sell electricity. A pro rata of the structure costs would be 50 KEuro per year.

#### OR04 CDM projects developed by EDP in Brazil generating voluntary certificates

i. In 2010 the South America VER market accounted about 17 MUSD. Brazil did play a significant part in this figure.

ii. In Brazil, where there is no carbon market in operation, EDP has been a pioneer in the electricity sector in developing carbon credit projects. It has five Clean Development Mechanism (CDM) projects registered with the Executive Board of the UNFCCC (United Nations Framework Convention on Climate Change): repowering the fourth group at Mascarenhas hydroelectric power station; the São João and Paraíso hydroelectric power stations; and Agua Doce and Horizonte wind farms. To date, the UN has issued 40 426 CER.

The revenue from the VERs is invested in socio-environmental projects supported or developed by Instituto EDP.

iii. The cost currently associated with this opportunity is about 50 k USD per year.

#### OR05 Renewable generation in countries where renewable is underdeveloped

i. There is a considerable market for renewable energy strongly reinforced by CO2 emissions restrictions. In the next years it is estimated that the operating cashflow from renewable will constantly grow. In 2012 renewable revenues have already surpassed the billion Euro.

These opportunities may arise at two scales. One is related with economies that although they have not fully developed their renewable potential, they are structured economies, as an example one has Romania, Poland, etc.

There is another category of opportunities related with totally disrupted economies or situations, such as the ones in the Kakuma refugees camp, in which EDP has developed a project that disseminated renewable energy generation and use, namely in cooking, in charging lights (to allow night study) and in water purification. These second type of opportunities have as main objective the improvement of human conditions to very poor people in unstructured societies. EDP has currently a company A2E (Access to Energy) dedicated to develop these opportunities.

ii. EDP renewable company, EDPR is the world third wind player. In 2012 EDP had 8 GW of installed power, a net capacity factor of 29% worldwide. EDP is focused in doing business in countries with under exploited wind potential and adequate incentive framework. Those incentives can be power purchase agreements, tax credits, among others. A2E is the company that manages the opportunities related to energy access.

iii. Investment associated - the Capex on wind in 2012 was 600 MEuro. The Capex of the Kakuma demonstration project was 1,3 MEuro

OR06 In regulated activities (distribution and last resource supply) costs may be recognized, if proven the necessity to invest more in assets in order to guarantee service quality levels, while selling electricity at a fixed price. This regulatory issue can decrease operational costs, increasing the margin and also contributing to a better reputation because EDP is able to invest more in these areas.

#### OR07 - Wind offshore generation regulation.

i. The potential market for offshore wind power is about 3 GW/year worldwide. EDP R being the third wind power company will most surely capture some of these opportunities.

ii. Wind offshore generation is an opportunity and may be supported by regulation. EDP has, since January 2010, the permission to develop (with Sea Energy) 1.3 GW offshore wind farms in Scotland. EDP is also developing a pioneer demonstration project, windfloat a 2 MW sea wind turbine. This project is currently included in an EU I&D project DemoWfloat that aims to develop a pre-commercial phase with 27 MW (5 windfloat units).

iii. The cost of the windfloat demonstration project is 20 MEuro.

#### OR08

i. In Portugal EDP's estimates the potential ESCO market to be about 1300 MEuro.

ii. EDP has created an ESCO company, EDP Serviços and ESCO company to supply energy efficiency and CO2 services.

iii. The costs associated with this opportunity are the commercial selling structures that not only sell these products but also sell electricity. A pro rata of the structure costs would be about 5 MEuro per year.

OR09 – PPEC Consumption Efficiency Promotion Plan - Project dedicated to promote energy efficiency in Portugal. This project promotes the active participation of consumers in sustainability, in terms of the efficient use of energy. This project is sponsored by the Portuguese Energy Regulator (ERSE).

i. The potential market is about 600 MEuro

ii. Efficiency is a major business area. PPEC initiatives do cover these.

iii. The annual cost is 900 Thousand Euro per year.

### 6.1.c. Opportunities driven by changes in changes in physical climate parameters:

Risk ID	Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood of impact	Magnitude of impact
OPC01	Change in precipitation pattern	Water scarcity is a strong scenario. EDP uses water in the thermal power plants cooling system and in the hydropower plant. Through the installation of cooling towers, instead of condensers, EDP has substantially reduced water use. Also the hydro reversible power plants have contributed to a decrease water use guaranteeing some power generation.	Increase generation capacity Increase power plants resilience	Current	Direct	Virtually certain	Medium - High
OPC02	Change in average temperature	Higher temperatures during summer and mild temperatures in winter may lead to increased electricity and/or gas sales in these periods as a result of intensive use of HVAC equipments.	Increase demand for products/services	Current	Direct	likely	Medium
OPC03	Change in extreme temperature	Resilient technologies may be needed to cope with extreme temperature and weather. Utilities should be able to develop this technologies in the market (ex: conductors for HV lines and cables that can bear higher temperatures with lower losses) and eventually lower the cost of both new and existing technologies by scale effect, e.g.: underground HV cables.	New business/products	1-5 years	Direct	Likely	Medium
OPC04	Increase grid resilience	Decentralized electrical generation and smart grids to improve the electrical system resilience to extreme weather events.	New business/products	Current	Direct	Likely	High

### 6.1.d. Please describe:

i. the potential financial implications of the risk/opportunity before taking action

ii. the methods you are using to manage this risk/opportunity

iii. the costs associated with these actions

EDP has the EMAS registration for 41% of installed capacity in Pt and Spain and ISO 14001 certification worldwide (76% installed capacity). The ISO 14001 section that addresses these subjects is 4.4.7 – emergency preparedness and response. These certifications guarantee that EDP is already prepared to a range of climactic events thus gaining an advantage regarding its competitors that do not have such a preparation.

OPC01 - Change in precipitation pattern

i. The potential financial revenue of this opportunity is the revenue that EDP obtains because EDP has pump and storage compared to the situation in which pump and storage did not exist, and the water use related savings associated related with the existing cooling towers instead of condenser units.

ii. Water scarcity is a strong scenario. EDP uses water in thermal power plants cooling systems and in hydropower plants. Through the installation of cooling towers instead of condensers, EDP has substantially reduced water use. Also the hydro reversible power plants have contributed to a use of a smaller amount of water guaranteeing the same power generation. These power plants allow hydro generation in drought situations and also pump water back

from the second to the first reservoir storing the energy generated in wind farms mainly in off-peak hours. The Sabor dam, under construction, is a reservoir dam located in an upstream position of Douro, the most affluent river in Portugal. This dam will allow water storage for consumption and energy generation in such a quantity that Portugal will have electrical consumption independency for peak hours for 30 days.

iii. The new hydropower plants that EDP is building have investment costs. These are not direct costs associated with the management of this risk, but this risk will be partially mitigated by the new hydropower plants, it is a collateral benefit from building the dams. Investments in new hydro plants comprise: conclusion in 2012 of repowering works at Picote II (246MW), Bemposta II (191MW) and Alqueva II (257MW of hydro reversible plant with reservoir, 'HRPP with reservoir'), ongoing construction of Baixo Sabor (172MW of HRPP with reservoir), Ribeiradio-Ermida (81MW with reservoir), Foz Tua (252MW HRPP with reservoir), repowering of Venda Nova III (756 MW HRPP with reservoir) and Salamonde II (207MW HRPP with reservoir); and development of other hydro plants in pipeline, fully secured representing over 1GW of additional capacity. Investments in hydro named above represented about 365 million Euro in 2012. These new power plants will increase EDP's cash flow because they will produce energy only with maintenance costs, they will not have fuel costs. In new thermal power plants the cooling system is based on cooling towers instead of condenser using a much lower water volume and introducing a much smaller change in temperature. In Portugal, the power plants build up with this technology are TER and Lares CCGT power stations.

#### OPC02 - Change in average temperature

i. Higher temperatures during summer may lead to increased electricity and/or gas sales in these periods as a result of intensive use of HVAC equipments. Increased electricity and/or gas sales will positively impact the company cash flow in about 2 a 3 %.

ii. EDP manages this opportunity by guaranteeing always energy supply, even in summer peaks, this is achieved by the diversified investments that EDP has done in generation.

iii. The investments in new power plants, see answer to OPC01. The Capex on renewable in 2012 was 1.3 billion Euro.

OPC03 - Change in extreme temperature - Resilient technologies may be needed to cope with extreme temperature and weather. Utilities should be able to support the development of this technologies in the market (ex: conductors for HV lines and cables that can bear higher temperatures with lower losses) and eventually lower the cost of both new and existing technologies by scale effect, e.g.: underground HV cables. These technologies will decrease operational costs.

#### OPC04 - Increase grid resilience

i. Decentralized electrical generation and smart grids to improve the electrical system resilience to extreme weather events.

The potential market for smart grids is about 600 to 1000 MEuro, just considering the distribution component. The micro generation, the electric vehicles and all other services will add up to this amount.

ii. Smart grids are the new technology that will allow a much more efficient electrical grid management and the incorporation of several features into the grid such as energy remote management, micro generation, distributed generation, electric vehicles, among others. Foreseeing this, EDP has launched a project, InovGrid, which is now in demonstration phase. Under this project, 70 MEuros will be invested in smart grids and in 200 thousand energy boxes (smart meters). With this project EDP will address three main drivers of the electrical sector: energy remote management, micro generation and smart grids. The project is now in demonstration in Évora where it was implemented in 31,000 consumers' homes. Success in these consumers will allow EDP to opt for a full rollout to consumers in Portugal, Spain and Brazil. To quantify the expected impact of this project EDP have also set our goals in terms of Key Performance Indicators, to be assessed at the main site in Évora after 2013. The project is aligned with the current European 20-20-20 goals and aims to demonstrate a full featured implementation of the smart Grid concept and show how to harness its potential to increase the share of small to medium size distributed generation. It will do so by enlisting the active participation of consumers and small producers, including them as relevant market-shaping forces.

iii. EDP's investment in smart grids totals 15 MEuros (31,300 smart meters installed; integration of IT systems; setting up communications infrastructures, remote network control systems).

### 6.1.e Opportunities driven by changes in other climate-related developments:

ID	Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood of impact	Magnitude of impact
OCC01	Other drivers	Economy decarbonization increase EDP's competitive advantage due to its low CO2 generation and also to its services in efficiency, green energy and CO2 compensation.	Increased demand for existing products/Services	Current	Direct	Virtually certain	Medium - High
OCC02	Consumer behavior	Clean mobility	New products /business services	10 years	Direct	likely	Medium - High
OCC03	Consumer behavior	Smart grids	New products /business services	5 years	Direct	Likely	Medium - High
OCC04	Induced changes human and cultural environment	RECs	New products /business services	Current	Direct	likely	Medium - High
OCC05	Consumer behavior	Energy services – efficiency and CO2 compensation	New products /business services	Current	Direct	Very likely	Medium - High
OCC06	Other drivers	Diversification – assets, geography and processes	Other –Asset and free cash flow protection	Current	Direct	Very likely	Medium - High
OCC07	Consumer behavior	Clean electricity production	New products, business, services	Current	Direct	Virtually certain	Medium

### 6.1.f Please describe:

#### i. The potential financial implications of the risk/opportunity before taking action

#### ii. The methods you are using to manage this risk/opportunity

#### iii. The costs associated with these actions

#### OCC01 - Economy decarbonization

i. The potential market for energy efficiency services is well above the 1300 MEuro

ii. Economy decarbonization increase EDP's competitive advantage due to its low emissions generation and also to its services in energy efficiency, green energy and CO2 compensation. Also, under the decarbonization trend, EDP sells green energy - energy certified by RECs, Renewable Energy Certificates issued by AIB, the Association of Issuing Bodies - to a small group of clients. EDP is currently developing a green services business area that will provide the clients with energy efficiency services, green energy and CO2 footprint evaluation and compensation. This is a promising area because many businesses are actually under great pressure to cope with voluntary sustainability evaluations in which these products are key factors.

iii. The costs associated with these opportunities are related to existing structures, and are about 150kEuro per year.

OCC02 - Clean mobility – Increasing emission regulations will cause the swift from fossil fuel mobility to clean one (electricity and natural gas)

i. The potential market for electrical mobility for EDP is the sale of electricity for mobility that will account for about 8.5 MEuro, based on 19 000 vehicles for 2020.

The potential market for natural gas mobility is about 10 million Euro.

ii. In Portugal EDP has currently 17 electrical vehicles and EDP has also installed 400 charging locations. In Spain EDP has a partnership with Mitsubishi in which when a car is sold EDP installs the charging system at the client's house. In 2010 EDP in Brazil has inaugurated the first electric vehicle recharging network, with 20 points in the Brazilian states of São Paulo and Espírito Santo. The network is used for recharging 90 bicycles donated by EDP to military and municipal police forces and environmental authorities.

In Portugal EDP is already selling natural gas for the public transport of Braga and Oporto.

iii. Investment associated – Electrical mobility 2 MEuro. Natural gas mobility – 300 thousand euro per new client (infrastructure).

#### OCC03 - Smart grids.

i. The potential market for smart grids is about 600 to 1000 MEuro, just considering the distribution component. The micro generation, the electric vehicles and all other services will add up to this amount.

ii. Smart grids are the new technology that will allow a much more efficient electrical grid management and the incorporation of several features into the grid such as energy remote management, micro generation, distributed generation, electric vehicles, among others. Foreseeing this, EDP has launched a project, InovGrid, which is now in demonstration phase. Under this project, 70 MEuros will be invested in smart grids and in 200 thousand energy boxes (smart meters). With this project EDP will address three main drivers of the electrical sector: energy remote management, micro generation and smart grids. The project is now in demonstration in Évora where it was implemented in 31,000 consumers' homes. Success in these consumers will allow EDP to opt for a full rollout to consumers in Portugal, Spain and Brazil. To quantify the expected impact of this project EDP have also set our goals in terms of Key Performance Indicators, to be assessed at the main site in Évora after 2013. The project is aligned with the current European 20-20-20 goals and aims to demonstrate a full featured implementation of the smart Grid concept and show how to harness its potential to increase the share of small to medium size distributed generation. It will do so by enlisting the active participation of consumers and small producers, including them as relevant market-shaping forces.

iii. EDP's investment in smart grids totals 15 MEuros (31,300 smart meters installed; integration of IT systems; setting up communications infrastructures, remote network control systems).

#### OCC04 – Renewable Energy Certificates (RECs).

i. The potential market for RECs is about 10 MEuro.

ii. RECs are certificates that proof that one megawatt-hour (MWh) of electricity was generated from a renewable energy resource. Currently EDP has the sourcing and a small client portfolio. The sourcing is produced in the new hydropower plants that are not under any special feed-in tariff. The clients exist and will increase due to the growing number of voluntary sustainability evaluations in which EDP's clients will need to score to keep up with their peers.

iii. The costs associated with this opportunity are the commercial selling structures that not only sell these products but also sell electricity. A pro rata of the structure costs would be 50 KEuro per year.

#### OCC05 - Energy services– energy efficiency and CO2 compensation.

i. The potential market for CO2 services can be up to 7 MEuro and for energy efficiency about 1300 MEuro.

ii. Efficiency services are an existing opportunity because services have a positive return, the major drawback is for some projects is its payback period. On the other hand CO2 compensation is a promising area because many businesses are actually under great pressure to cope with voluntary sustainability evaluations in which these products are key factors. And EDP has already the product and the sourcing at competitive prices.

iii. The costs associated with this opportunity are the commercial selling structures that not only sell these products but also sell electricity. A pro rata of the structure costs would be about 50 KEuro per year.

OCC06 - Diversification – assets, geography and processes. EDP operates in 13 countries, in four main business areas: generation (thermal and hydro), renewable generation (wind and photovoltaic), transport (gas) and distribution (gas and electricity). Businesses have natural hedges among themselves; per example in case of an oil price peak the cash flow from thermal assets will decrease, being partially compensated by the cash flow from renewable. Another example occurs in the case of increasing CO2 license prices, the cash flow from thermal assets will decrease, being compensated by the cash flow from renewable. The 13 countries are located in USA, Brazil and throughout Europe thus guaranteeing that if an extreme event such as a violent storm or earthquake occur, part of the assets will be protected somewhere else.

#### OC07 - Clean electricity production

EDP has created a Business Unit exclusively dedicated to the development of renewable cost effective energy supply in very underdeveloped situations: the A2E. Its objective is to promote the business of access to energy

i. The world potential market is 2.5 billion Euro in investment to provide access to energy worldwide (and access to the 1.5 billion people currently without it).

ii. Supply of solar portable light, solar ovens, water purifiers, and solar home systems, among others. A2E has performed a pilot in the Kakuma refugee camp and in the next 3 years is going to develop 6 projects in 3 continents that will impact the life of more than 70 thousand extremely poor people.

iii. The investment in the first project – in Kakuma – represented an investment of 1.3 million Euro

# Emissions

## 7. Emissions Methodology

### Base year

7.1 Please provide your base year and base year emissions (Scopes 1 and 2).

Use the table in the ORS to provide the following details for Scopes 1 and 2:

Base year	Base year emissions Scope 1	Base year emissions Scope 2
2005	28,255,003	1,861,319
2008	19,813,643	1,571,028

### Methodology

7.2 Please give the name of the standard, protocol or methodology you have used to collect activity data and calculate Scope 1 and Scope 2 emissions

#### Scope 1:

European Directive no. 2003/87/CE - EDP Scope 1 stationary combustion emissions were calculated using the methodology defined by the European Directive no. 2003/87/CE. This methodology calculates CO<sub>2</sub> emissions from fuel consumption using measured data, emission factor and oxidation factor.

GHG protocol (<http://www.ghgprotocol.org/>) - EDP's Scope 1 fleet emissions and Scope 2 emissions were calculated using the GHG protocol guidelines and EDP data.

Portugal - methodology approved by APA, I.P. (Agência Portuguesa do Ambiente, the Portuguese Environment Agency- [www.apambiente.pt](http://www.apambiente.pt)) - EDP power plants in Portugal report greenhouse gas emissions using the methodology approved by APA for the GHG national inventories and the EU-ETS (European Emission Trading Scheme). These reports are verified by APA certified auditors.

Spain - EMEP-CORINAIR and IPCC international methodology - EDP power plants quantify greenhouse gas emissions using the EMEP-CORINAIR and IPCC international methodology.

#### Scope2:

EDP Scope 2 emissions are only related to electricity consumption (office buildings, grid losses, back-feed power in wind farms, power plant auto-consumption). They are calculated using the annual emission intensity (tonnes CO<sub>2</sub>/MWh) of the countries in which EDP operates:

- Portugal: Electricity national emission factor (sources: Portuguese Regulator (ERSE), TSO (REN)).
- Spain: Electricity national emission factor (source: Spanish TSO (REE))
- Brazil: Electricity national emission factor – Brazil Minister of Science and technology
- USA: Electricity emission factor of the states in which EDP is operating
- Rest of Europe: Electricity emission factor of the countries in which EDP is operating (Source: CERA, Global Insight).

If you have selected "other":

7.2a Please provide further details

7.3 Please give the source for the global warming potentials you have used

Gas	Reference
SF <sub>6</sub>	IPCC 4th Assessment Report (GWP over a 100 year time span)
Other GHG (e.g., gas leakage, methane)	GHG Protocol (Stationary_combustion_tool_(Version_4(1).0)(2)_EF Gas)

7.4 Please give the emissions factors you have applied and their origin; alternatively, please attach an Excel spreadsheet with this data

Fuel/Material/Energy	Emission Factor	Unit	Reference
Airplane – long haul (>1000 km)	239.63	g CO2/pass/km	World Resources Institute (2008) GHG Protocol tool for mobile emissions V2.2
Airplane – short haul (500 to 1000 km)	92.45	g CO2/pass/km	World Resources Institute (2008) GHG Protocol tool for mobile emissions V2.2
Airplane – domestic (< 500 km)	171.47	g CO2/pass/km	World Resources Institute (2008) GHG Protocol tool for mobile emissions V2.2
Train	115.2	g CO2/pass/km	World Resources Institute (2008) GHG Protocol tool for mobile emissions V2.2
Marine Shipping	33.23	g CO2/t/km	World Resources Institute (2008) GHG Protocol tool for mobile emissions V2.2
Inland shipping	33.23	g CO2/t/km	World Resources Institute (2008) GHG Protocol tool for mobile emissions V2.2
Diesel heavy truck	204	g CO2/t/km	World Resources Institute (2008) GHG Protocol tool for mobile emissions V2.2
Bus diesel	66.59	g CO2/pass/km	World Resources Institute (2008) GHG Protocol tool for mobile emissions V2.2
Metro	101.7	g CO2/pass/km	World Resources Institute (2008) GHG Protocol tool for mobile emissions V2.2
Electricity Emission factor Portugal (Scope 2) 2012	226.7	kg CO2/MWh	Electricity national emission factor - Portuguese Regulator (ERSE), TSO (REN)
Electricity Emission factor Spain (Scope 2) 2012	171	kg CO2/MWh	Electricity national average emission factor - Spanish TSO (REE)
Electricity Emission factor Brazil (Scope 2) 2012	51.1	kg CO2/MWh	Electricity national emission factor – Brazil Minister of Science and technology
Electricity Emission factor USA (Scope 2) 2012	643.3	kg CO2/MWh	Electricity emission factor of the states in which EDP is operating
Electricity Emission factor RoE (Scope 2) 2011	643.3	kg CO2/MWh	Electricity emission factor of the countries in which EDP is operating – CERA, Global Insight
Gasoline (Europe and USA)	2.27	kg CO2/litre	Mobile combustion - GHG emissions calculation tool – version 2.3
Gasoline (Brazil)	2.27	kg CO2/litre	National emission factor – GHG Protocol Brazilian Programme
Diesel (Europe)	2.69	kg CO2/litre	Mobile combustion - GHG emissions calculation tool – version 2.3
Diesel (USA)	2.67	kg CO2/litre	Mobile combustion - GHG emissions calculation tool – version 2.3
Diesel (Brazil)	2.67	kg CO2/litre	National emission factor – GHG Protocol Brazilian Programme
CNG (Brazil)	1.99	kg CO2/m3	National emission factor – GHG Protocol Brazilian Programme
Alcohol (Brazil)	1.18	kg CO2/litre	National emission factor – GHG Protocol Brazilian Programme

## 8. Emissions Data

### Boundary

8.1 Please select the boundary you are using for your Scope 1 and 2 greenhouse gas inventory

Select from

<input checked="" type="checkbox"/>	Financial control
<input checked="" type="checkbox"/>	Operational control
<input type="checkbox"/>	Equity share
<input type="checkbox"/>	Climate Change Reporting Framework (CCRF)
<input type="checkbox"/>	Other

### Scope 1 and 2 Emissions Data

8.2 Please provide your gross global Scope 1 emissions figures in metric tonnes CO<sub>2</sub>e

18 045 570

8.3 Please provide your gross global Scope 2 emissions figures in metric tonnes CO<sub>2</sub>e

1 454 760

8.4 Are there any sources (e.g. facilities, specific GHGs, activities, geographies, among others.) of Scope 1 and Scope 2 emissions which are not included in your disclosure?

Yes

If yes: 8.4a Please complete the table

Source	Scope	Explain why the source is excluded
Methane	1 (stationary combustion)	Not materially relevant
N <sub>2</sub> O	1 (stationary combustion) & 2	Not materially relevant

### Data Accuracy

8.5 Please estimate the level of uncertainty of the total gross global Scope 1 and 2 emissions figures that you have supplied and specify the sources of uncertainty in your data gathering, handling and calculations

Scope	Uncertainty range	Main sources of uncertainty	Please expand on the uncertainty in your data
1	Less than or equal to 2%	GHG Protocol default or national (Brazil) emission factors; Fuel measurement (uncertainty 1.5%)	In Europe, GHG emissions evaluation follows the guidelines in Commission Decision n. 2007/589/CE. EDP's methodology is approved by APA (Agência Portuguesa do Ambiente) the Portuguese environmental authority who manages the national inventory system and CO <sub>2</sub> licenses under the EU-ETS. The values are fully audited. EDP considers as an acceptable figure an error of less than 2%.
2	Less than or equal to 2%	GHG Protocol default emission factors; national electricity emission factors	CO <sub>2</sub> emissions were obtained using company primary data (fuel use or distance) and converting to CO <sub>2</sub> using emission factors of the GHG Protocol or national (Brazil). The values are fully audited. EDP considers as an acceptable figure an error of less than 2%.

### External Verification or Assurance

8.6 Please indicate the verification/assurance status that applies to your Scope 1 emissions

If Scope 1 emissions have been verified or assured (complete or underway), answer questions 8.6a and 8.6b:

8.6a Please indicate the proportion of your Scope 1 emissions that are verified/assured

100%

8.6b Please provide further details of the verification/assurance undertaken, and attach the relevant statements

Type of verification or assurance	Relevant standard	Relevant statement attached?
Reasonable Assurance	ISAE 3000	yes

8.7 Please indicate the verification/assurance status that applies to your Scope 2 emissions

*If Scope 2 emissions have been verified or assured (complete or underway), answer questions 8.7a and 8.7b.*

8.7a Please indicate the proportion of your Scope 2 emissions that are verified/assured

100%

8.7b Please provide further details of the verification/assurance undertaken, and attach the relevant statements

Type of verification or assurance	Relevant standard	Relevant statement attached?
Reasonable Assurance	ISAE 3000	yes

### Carbon Dioxide Emissions from Biologically Sequestered Carbon

8.8 Are carbon dioxide emissions from the combustion of biologically sequestered carbon (i.e. carbon dioxide emissions from burning biomass/biofuels) relevant to your company?

Yes

*If yes:* 8.8a Please provide the emissions in metric tonnes CO<sub>2</sub>e

708,2 tCO<sub>2</sub>e (mobile combustion) + 901,6 tCO<sub>2</sub> (Biomass power plants), total 1609.8.

## 9. Scope 1 Emissions Breakdown

*Electric utilities should report emissions by country/region using the tables in QEU2 Oil and gas sector companies are requested to provide breakdowns of emissions by value chain segment and activity as shown in OG2 and OG3 ICT companies can use the sector module to respond to Q9.2d*

9.1 Do you have Scope 1 emissions sources in more than one country or region (if covered by emissions regulation at a regional level)?

Yes

If yes: 9.1a Please complete the table below

Country/Region	Scope 1 metric tonnes CO2e
Portugal	9 026 348
Spain	9 013 475
Brazil	5 192
USA	328
RoE (Rest of Europe - France, Belgium, UK, Italy, Poland and Romania)	228

9.2 Please indicate which other Scope 1 emissions breakdowns you are able to provide (tick all that apply)

By business division (9.2a)	
By facility (9.2b)	
By GHG type (9.2c)	X
By activity (9.2d)	X

Where a breakdown option has been ticked, a table appears to allow you to enter the relevant emissions data

9.2.c

GHG Type	Scope 1 metric tonnes CO2e
CO2	18 026 691
SF6 (GWP=22,800)	6 757
Methane (Gas losses) (GWP=25)	12 122

9.2.d

Activity	Scope 1 metric tonnes CO2e
Electricity generation and distribution	18 028 985
Gas transport and distribution	16 585

## 10. Scope 2 Emissions Breakdown

*Oil and gas sector companies are requested to provide the breakdown of emissions by value chain segment as shown in OG2 ICT companies can use the sector module to respond to Q10.2c*

10.1 Do you have Scope 2 emissions sources in more than one country or region (if covered by emissions regulation at a regional level)?

Yes

If yes: 10.1a Please complete the table below

Country/Region	Scope 2 metric tonnes CO2e	Purchased (MWh)	Purchased low carbon (MWh)
Portugal	1 105 520	1 099 487	472 780
Spain	132 969	91 280	49 291
Brazil	201 655	31 012	27 910
USA	12 627	23 962	n.a.
RoW (Rest of the world - France, Belgium, UK, Italy, Poland and Romania)	1 989	5 611	n.a.

10.2 Please indicate which other Scope 2 emissions breakdowns you are able to provide (tick all that apply)

By business division (10.2a)	
By facility (10.2b)	
By activity (10.2c)	X
By legal structure	

Where a breakdown option has been ticked, a table appears to allow you to enter the relevant emissions data

10.2.c

Activity	Scope 1 metric tonnes CO2e
Electricity generation and distribution	1 454 260
Gas transport and distribution	500

## 11. Energy

11.1 What percentage of your total operational spend in the reporting year was on energy?

81%

11.2 Please state how much fuel, electricity, heat, steam, and cooling in MWh your organization has consumed during the reporting year

Energy Type	MWh
Fuel	54 923 107
Electricity	8 219 389
Heat	0
Steam	0
Cooling	0

11.3 Please complete the table by breaking down the total "Fuel" figure entered above by fuel type

Fuel Type	MWh
Coal	40 140 013
Natural Gas	11 085 610
Gasoil	39 416
Fuel oil	179 904
Solid Biomass	910 514
Blast Furnace Gas	1 994 591
Coke Oven Gas	168 828
Oxygen Steel Furnace Gas	332 810
Fuel for mobile (Gasoline, diesel oil, alcohol, LNG)	71 421

11.4 Please provide details of the electricity, heat, steam or cooling amounts that were accounted at a low carbon emission factor

Basis for applying a low carbon emission factor	MWh associated with low carbon electricity, heat, steam or cooling	Comments
Supplier specific, not backed by instruments	549 981	

## 12. Emissions Performance

### Emissions History

12.1 How do your absolute emissions (Scope 1 and 2 combined) for the reporting year compare to the previous year?

Increased

*If emissions have increased, decreased or remained the same overall:*

12.1a Please complete the table

Reason	Emissions Value (percentage)	Direction of change	Comment
Change in physical operating conditions – affecting stationary combustion	20.23%	Increased	Scope 1+ Scope 2  20.23% increase is the theoretical value corresponding to EDP's emission without the new renewable capacity that was put in place in 2012. In order to attain the real value one must subtract 13.31% to 20.23% to get the real value of 6.92%.  In 2012 coal power plants have worked much above the average of previous years, due to a particularly dry year (very low hydro generation in Portugal) and market circumstances (the lack of an effective EU CO <sub>2</sub> market – very low price of CO <sub>2</sub> ; low price of coal in comparison to natural gas in the Iberian market; and the economic and financial crisis in Europe). Consequently Scope 1 emissions increased.
Emission reduction activities	13.31	Decrease	Renewable Installed capacity

### Emissions Intensity

12.2 Please describe your gross combined Scope 1 and 2 emissions for the reporting year in metric tonnes CO<sub>2</sub>e per unit currency total revenue (CDP 2011 Q13.2, amended)

Intensity figure	Metric numerator [mtCO <sub>2</sub> e]	Metric denominator [Turnover M€]	% change from previous year	Direction of change from previous year	Reason for Change
1 193	19 500 330	16 340	1,1%	Decrease	In 2012 CO <sub>2</sub> emissions (S1+S2) did increase 6.9% and the revenue increased 8.1%, since emissions did not increase as much as the revenues, the overall growth ratio decreased.

12.3 Please describe your gross combined Scope 1 and 2 emissions for the reporting year in metric tonnes CO<sub>2</sub>e **per full time equivalent (FTE) employee** (CDP 2011 Q13.3, amended)

Intensity figure	Metric numerator [mtCO <sub>2</sub> e]	Metric denominator [FTE employee]	% change from previous year	Direction of change from previous year	Reason for Change
1 589	19 500 330	12 275	6%	Increase	In 2012 CO <sub>2</sub> emissions (S1+S2) did increase 6.9% and the FTEs increased 0.9%. Since the FTEs did not increase as much as the emissions, the overall growth ratio increased.

12.4 Please provide an additional intensity (**normalized**) metric that is appropriate to your business operations (CDP 2011 Q13.4, amended)

Intensity figure	Metric numerator [mtCO <sub>2</sub> e]	Metric Denominator (MWh)	% change from previous year	Direction of change from previous year	Reason for Change
0,307	19 500 330	55 682 452	13,9%	Increase	<p>In 2012 CO<sub>2</sub> emissions (S1+S2) did increase 6.9% and generation decreased 6.2%. As a result the overall growth ratio increased.</p> <p>In 2012 coal power plants have worked much above the average of previous years, due to a particularly dry year (very low hydro generation in Portugal) and market circumstances (the lack of an effective EU CO<sub>2</sub> market – very low price of CO<sub>2</sub>; low price of coal in comparison to natural gas in the Iberian market; and the economic and financial crisis in Europe). Consequently Scope 1 emissions increased.</p>

### 13. Emissions Trading

13.1 Do you participate in any emissions trading schemes?

Yes.

If yes: 13.1a Please complete the following table for each of the emission trading schemes in which you participate

Scheme name	Period for which data is supplied	Allowances allocated	Allowances purchased	Verified emissions in metric tonnes CO <sub>2</sub> e	Details of ownership
EU - ETS	Year 2012	18 063 297	5 201 575	17 969 911	Facilities EDP owns and operates

13.1b What is your strategy for complying with the schemes in which you participate or anticipate participating?

EDP's compliance strategy for the EU-ETS is based on emission reduction as well as in allowances purchase.

EDP searches for the best cost-efficient strategy to comply, using both European Union Allowances (EUA) and the maximum of carbon credits (CER and ERU) possible for each installation.

As to the management of the compliance portfolio, we hedge our emissions through primary and secondary market operation, both on spot and long term contracts.

Especially on the CDM/JI portfolio we favored several different types of approaches, from our own originations, to CO<sub>2</sub> funds, CO<sub>2</sub> project auctions and one-to-one (projects) purchase agreements.

In what regards emission reduction:

EDP is currently involved in the European Trading Scheme (EU ETS). This has already entered the Kyoto period (2008-2012), with stricter requirements than the pilot phase for utilities.

EDP's strategic plan, issued on Investor's Day in 2008, stated that CO<sub>2</sub> emission factor (EF) would be reduced by 56% by 2012 in comparison with 2005 emissions. EF would drop from 600 tCO<sub>2</sub>/MWh in 2005 to 270 tCO<sub>2</sub>/MWh by 2012.

In 2009, EDP committed itself to a more ambitious target, to reduce by 2020 in 70% EF, in comparison to 2008. EF will drop from 400 tCO<sub>2</sub>/MWh in 2008 to 120 tCO<sub>2</sub>/MWh by 2020. This reduction is a result of the Group's Strategy and will be achieved through substantial business decisions.

In other geographies EDP has strongly invested in CO<sub>2</sub> free generation, thus generating electricity with low or none CO<sub>2</sub> emissions.

In Brazil, where there is no carbon market in operation, EDP has been a pioneer in the electricity sector in developing carbon credit projects.

It has five Clean Development Mechanism (CDM) projects registered with the Executive Board of the UNFCCC (United Nations Framework Convention on Climate Change): repowering of the fourth machine at its Mascarenhas hydroelectric power station; the Sao Joao and Paraíso hydroelectric power stations; and the Agua Doce and Horizonte wind farms. To date, the UN has issued 40 426 Certified Emission Reductions (CERs).

13.2 Has your company originated any project-based carbon credits or purchased any within the reporting period?

Yes

If yes: 13.2a Please complete the following table

Credit origination or credit purchase	Project type	Project identification	Verified to which standard	Number of credits (metric ton CO2e)	Number of credits (metric ton CO2e): Risk adjusted volume	Credits retired	Purpose, e.g. compliance
Purchase	Landfill gas	AR928	CDM	177.148	177.148	0	Compliance
Purchase	N2O	DE1000017	J1	1.243.457	1.243.457	0	Compliance
Purchase	HFC23	CN11, CN306	CDM	112.783	112.783	0	Compliance
Purchase	N2O	CN1083	CDM	303.609	303.609	0	Compliance
Purchase	Hydro	CN3271	CDM	48.228	48.228	0	Compliance
Purchase	Hydro	CN3273	CDM	15.517	15.517	0	Compliance
Purchase	Hydro	CN3824	CDM	58.639	58.639	0	Compliance
Purchase	Hydro	CN4237	CDM	12.093	12.093	0	Compliance
Purchase	Coke Oven Gogen	CN2818	CDM	6.967	6.967	0	Compliance
Purchase	Landfill gas	MX425	CDM	124.281	124.281	0	Compliance
Purchase	N2O	CN1583	CDM	132.666	132.666	0	Compliance
Purchase	Geothermal	GT2022	CDM	67.480	67.480	0	Compliance
Purchase	Landfill gas	MX1307	CDM	39.204	39.204	0	Compliance
Purchase	Hydro	BR830	CDM	25.978	25.978	0	Compliance
Purchase	Wind	CN2223	CDM	47.209	47.209	0	Compliance
Purchase	Gas Power Gen	CN2439	CDM	195.402	195.402	0	Compliance
Purchase	Wind	CN2916	CDM	45.353	45.353	0	Compliance
Purchase	Wind	CN3092	CDM	102.354	102.354	0	Compliance
Purchase	Wind	CN3251	CDM	109.220	109.220	0	Compliance
Purchase	Wind	CN3688	CDM	52.395	52.395	0	Compliance
Purchase	Wind	CN1815	CDM	17.530	17.530	0	Compliance
Purchase	Wind	CN2530	CDM	76.867	76.867	0	Compliance
Purchase	Wind	CN3092	CDM	42.885	42.885	0	Compliance
Purchase	Wind	CN3251	CDM	37.627	37.627	0	Compliance
Purchase	Wind	CN5286	CDM	55.776	55.776	0	Compliance
Purchase	Wind	CN5688	CDM	40.227	40.227	0	Compliance
Purchase	Wind	CN5856	CDM	46.275	46.275	0	Compliance
Purchase	Wind	CN5912	CDM	24.607	24.607	0	Compliance
Purchase	Wind	CN5920	CDM	14.849	14.849	0	Compliance
Purchase	Waste gas	CN1416	CDM	88.892	88.892	0	Compliance
Purchase	Waste gas	CN1416	CDM	57.038	57.038	0	Compliance
Credit Origination	Hydro	PCH Paraíso <a href="http://cdm.unfccc.int/Projects/DB/BVQ11188558574.2/view">http://cdm.unfccc.int/Projects/DB/BVQ11188558574.2/view</a>	CDM	303095	303095	0	Voluntary offsetting
Credit Origination	Hydro	PCH São João	CDM	226408	226408	0	Voluntary offsetting
Credit Origination	Hydro	UHE Mascarenhas <a href="http://cdm.unfccc.int/Projects/DB/SGS-UKL1183734827.45/view">http://cdm.unfccc.int/Projects/DB/SGS-UKL1183734827.45/view</a>	CDM	353262	353262	0	Voluntary offsetting
Credit	Wind	Água Doce <a href="http://cdm.unfccc.int/Projects/DB/SGS-UKL1156244716.38/view">http://cdm.unfccc.int/Projects/DB/SGS-UKL1156244716.38/view</a>	CDM	95928	95928	0	Voluntary offsetting
Credit	Wind	Horizonte <a href="http://cdm.unfccc.int/Projects/DB/SGS-UKL1151534607.76">http://cdm.unfccc.int/Projects/DB/SGS-UKL1151534607.76</a>	CDM	43587	43587	0	Voluntary offsetting

## 14. Scope 3 Emissions

14.1 Please account for your organization's Scope 3 emissions, disclosing and explaining any exclusions (CDP 2012 Q15.1, amended)

Sources of Scope 3 emissions	Evaluation Status	metric ton CO2e	Methodology	% emissions primary data	Explanation
Purchased goods and services	Relevant not yet calculated				
Capital goods	Relevant not yet calculated				
Fuel-and-energy-related activities (not included in Scope 1 or 2)	Not evaluated				
Upstream transportation and distribution	Relevant partially calculated	1 391 968	GHG Protocol	100	Transport of Coal.
Waste generated in Operations	Relevant partially calculated	13 709	GHG Protocol	100	Transport of gypsum and ashes.
Business travel	Relevant calculated	11 340	GHG Protocol	100	Air, train and road business travel.
Employee commuting	Relevant calculated	4 477,2	GHG Protocol	100	
Upstream leased assets	Relevant calculated	33 947	GHG Protocol	100	
Investments	Not evaluated				
Downstream transportation and distribution	Relevant not yet calculated				
Processing of sold products	Not Relevant				Electricity distribution/generation and gas distribution are not a physical goods, not requiring processing.
Use of sold products	Relevant calculated				
End of life treatment of sold products	Not Relevant				Electricity distribution/generation and gas distribution are not a physical goods, not requiring disposal.
Downstream leased assets	Not Relevant				Not applicable.
Franchises	Not Relevant				Electricity distribution/generation and gas distribution business model does not include franchising.
Other (upstream)	Relevant not yet calculated				
Other (downstream)	Relevant not yet calculated				
Use of sold products	Relevant partially calculated	3.4 thousand CO2 tons	GHG Protocol	100	Portugal Energy Efficiency Integrated Services for large consumers in the industry, Commerce and Service sectors (EF= 0.2286 tCO2/MWh)
Use of sold products	Relevant partially calculated	5.8 thousand CO2 tons	GHG Protocol	100	Spain Energy Efficiency Integrated Services for large consumers in the industry, Commerce and Service sectors (EF= 0.3214 tCO2/MWh)
Use of sold products	Relevant partially calculated	1.75 thousand CO2 tons	GHG Protocol	100	Brazil Energy Efficiency Integrated Services for large consumers in the industry, Commerce and Service sectors (EF= 0.0686 tCO2/MWh)

Use of sold products	Relevant partially calculated	60 thousand CO2 tons	GHG Protocol	100	Portugal CFL distributed through IPSS (Social Solidarity Institutions), Efficient House Kit: LED + Standby Killer, Promotion of Efficient Lighting – LED, Standby killer – remote control, Knowatt, Astronomical digital time switch control for street lighting, Standard CFL in IPSS (Social Solidarity Institutions), LED traffic lights, Freecooling, Optimizing Cooling on large distributors – installation of evaporative condensation systems, high efficiency motors, Replacing discharge lamps with tubular fluorescent lamps, Variable Speed Drive (VSD) for ventilation systems, for refrigeration systems and for pumping systems (EF=0.37 tCO2/MWh – figure recommended by ERSE)
Use of sold products	Relevant partially calculated	Total 1845 CO2 tons	GHG Protocol	100	Portugal Photovoltaic systems mainly for B2C and B2B in a turn-key model (EF= 0,2286 tCO2/MWh)

14.2 Please indicate the verification/assurance status that applies to your Scope 3 emissions

Verification or assurance complete

14.2a Please indicate the proportion of your Scope 3 emissions that are verified/assured

100%

14.2b Please provide further details of the verification/assurance undertaken, and attach the relevant statements

Type of verification or assurance	Relevant standard	Relevant statement attached?
Limited assurance	ISAE 3000	Yes

14.3 Are you able to compare your Scope 3 emissions for the reporting year with those for the previous year for any sources? (CDP 2011 Q15.3, amended)

Yes.

If yes: 14.3a Please complete the table (CDP 2011 Q15.3a, amended)

Sources of Scope 3 emissions	Reason	Emissions value (percentage)	Direction of change	Comment
Fuel and energy-related activities (not included in scope 1 or scope 2)	Change in physical operating conditions	49%	Increase	In 2012 coal plants contribution to energy supply in Portugal and Spain increased substantially. This was due to: 1. 2012 was a particularly dry year, consequently hydro production was very low 2. CO2 emission licenses price was too low thus diminish clean technologies competitiveness.
Waste generated in operations	Change in output	79%	Increase	In 2012 coal plants contribution to energy supply in Portugal and Spain increased substantially. This was due to: 1. 2012 was a particularly dry year, consequently hydro production was very low 2. CO2 emission licenses price was too low thus diminish clean technologies competitiveness.
Business travel	Change in boundary	34%	Increase	Boundary of analyses was increased due to an increase in data availability.
Employee commuting	Change in boundary	96%	Increase	Boundary of analyses was increased due to an increase in data availability.
Upstream leased assets	Change in physical operating conditions	70%	Increase	EDP is building many hydro plants the variation in CO2 emissions related with leased assets is due to work load variation.
Other (upstream)	Emission reduction Activities	12	Decrease	Rented vehicles.

14.4 Do you engage with any of the elements of your value chain on GHG emissions and climate change strategies?

Yes.

If yes: 14.4 Please complete the table (CDP 2011 Q15.3a, amended)

x	Yes our suppliers
x	Yes our customers
	Yes other partners in the value chain
	No, we do not engage

14.4.a Please give details of methods of engagement, your strategy for prioritizing engagements and measures of success:

For long EDP has been working closely with its main suppliers in several areas, such as health and safety and social responsibility. In what regards sustainability and CO2, EDP has already established a methodology to assess suppliers risk exposure to environmental factors, including climate change. EDP is also currently developing a project in which Climate Change and Water Management in the value chain are going to be addressed. This project has already established the methodology to select the suppliers that are under scrutiny, they will be the 10% most representative in terms of costs and also a pool of the 5 most strategic that are not included in the first set.

14.4.b To give a sense of scale of this engagement, please give the number of suppliers with whom you are engaging and the proportion of your total spend that they represent

Number of suppliers	% total spend	Comment
		Not Available.

14.4.c If you have data on your suppliers' GHG emissions and climate change strategies, please explain how you make use of that data

How you make use of the data	Please give details
No data available	

Further information:

In 2013 EDP will continue to implement the GHG scope 3 Protocol. GHG scope 3 emissions (S3) calculation methodology was published in November 2011. The extent covered by EDP in S3 calculations has been changing since it started, in 2009, and it will be stabilized at the end of the scope 3 GHG protocol methodology implementation. Each year more processes are being covered. Most of the raw data like distances, weights, litters and electric consumption are collected in the company's internal information system, SIS. The data is then used in calculations, thus obtaining S3 emission per country and process, and finally reported. Presently calculations cover the following S3 categories:

- Category 3 Fuel and energy related activities (not included in scope 1 or scope 2)
- Category 5 Waste generated in operations
- Category 6 Business travel
- Category 7 Employee commuting
- Category 8 Upstream leased assets.

Planning:

1. Analyses of GHG Scope 3 protocol July 2013
2. Category relevance analyses Jul. 2013
3. Data systematization Aug.- Sept 2013
4. Establishment of the emission coefficients and updates Sept.- Nov 2013
5. Establishment of data collection methodology dec. 2013
6. Establishment of the calculation system Dec. 2013
7. Implementation Jan. 2014
8. Monitoring 2014
9. Establishment of targets 2014
10. Follow – up 2014-...