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CREDIT OPINION
15 May 2023

Update

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RATINGS

EDP - Energias de Portugal, S.A.

Domicile	Lisbon, Portugal
Long Term Rating	Baa2
Type	LT Issuer Rating
Outlook	Stable

Please see the ratings section at the end of this report for more information. The ratings and outlook shown reflect information as of the publication date.

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EDP - Energias de Portugal, S.A.

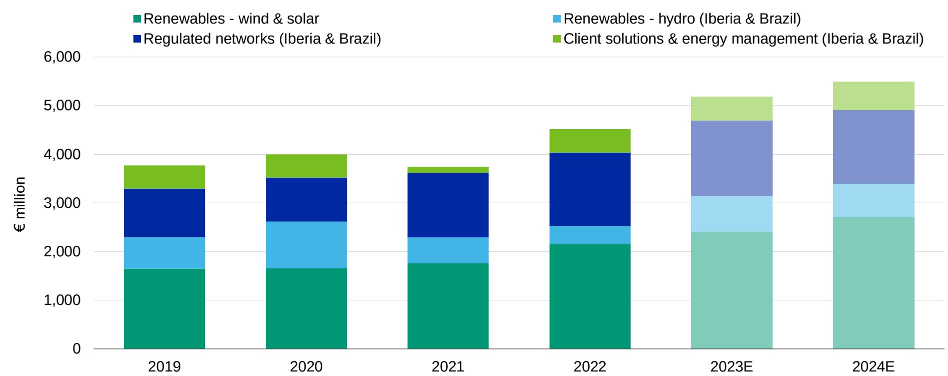
Update following upgrade to Baa2, outlook changed to stable

Summary

EDP - Energias de Portugal, S.A.'s (EDP, Baa2 stable) credit quality is supported by its commitment to maintain robust financial metrics; its diversified business and geographical mix, which helps moderate earnings volatility; the stable earnings coming from contracted generation and regulated networks, which account for more than 75% of group EBITDA; and the low carbon intensity of its power generation fleet and the strategy to exit coal-fired power generation by 2025, which positions it well in the context of the energy transition.

These positives help offset certain potential risks, including the earnings volatility stemming from variations in hydro output in Iberia and, to a lesser extent, wind resources globally; the residual exposure of EDP's merchant generation to volatile wholesale power prices; the execution risks associated with the group's significant capital spending over 2023-26, with €25 billion of gross investments planned over the period; the exposure to political and regulatory risks in Portugal (Baa2 stable) Spain (Baa1 stable) and Brazil (Ba2 stable); and the minority holdings in the group, which add to complexity.

Exhibit 1
Renewables will increasingly drive EDP's credit profile as the company executes its strategy
EBITDA by segment



The 2023-24 estimates represent Moody's forward view and not the view of the issuer.
Sources: Company data and Moody's Investors Service

Credit strengths

» Commitment to maintain robust financial metrics

» The diversified business and geographical mix helps moderate earnings volatility

» Regulated and contracted activities account for more than 75% of EBITDA

» Low carbon intensity of power generation fleet and strategy to exit coal-fired power generation by 2025

Credit challenges

» Earnings volatility stemming from variations in hydro output and wind resources

» Execution risks associated with a significant capital spending programme

» Political and regulatory risks in Portugal, Spain and Brazil

Rating outlook

The stable outlook reflects our expectation that, in the context of its capital investment plan and dividend policy, EDP will maintain financial metrics consistent with guidance for a Baa2 rating, including FFO/net debt at least in the upper teens, and retained cash flow (RCF)/net debt at least in the low teens, in percentage terms.

Factors that could lead to an upgrade

The ratings could be upgraded if the company makes progress on its strategy and investments while reducing leverage. A sustainable and solid financial profile, including FFO/net debt above 22%, and retained cash flow (RCF) to net debt at least in the mid-teens (in percentage terms), would support an upgrade to Baa1.

Factors that could lead to a downgrade

The rating could be downgraded if (1) EDP's financial profile were to weaken whether because of a downturn in the company's operating/regulatory environment and performance, or because cashflow generation was not to keep pace with debt-funded investment, such that FFO/net debt and RCF/net debt appeared likely to fall persistently below guidance for the current rating; or (2) credit negative changes occur in EDP's corporate structure, such as a material increase in minority shareholdings, which could prompt a tightening of guidance, or if subordination were to increase and weaken the position of parent company senior unsecured creditors.

Key indicators

Exhibit 2

EDP - Energias de Portugal, S.A.

	Dec-18	Dec-19	Dec-20	Dec-21	Dec-22	2023E	2024E
(CFO Pre-W/C) / Net Debt	13.6%	14.7%	16.8%	16.8%	18.0%	17-20%	17-20%
RCF / Net Debt	7.9%	9.3%	11.1%	10.0%	11.6%	12-15%	12-15%
(FFO + Interest Expense) / Interest Expense	3.9x	4.2x	5.2x	4.9x	4.3x	4-6x	4-6x

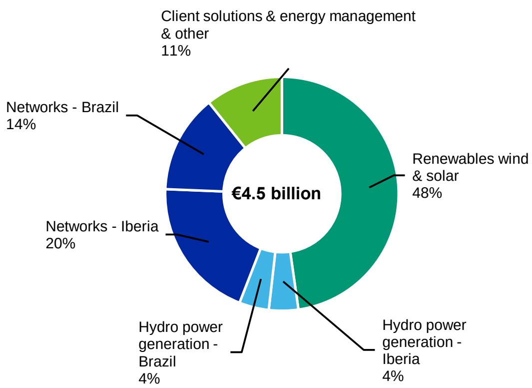
All ratios are based on adjusted financial data and incorporate Moody's Global Standard Adjustments for Non-Financial Corporations. Moody's estimates (E) are Moody's opinion and do not represent the views of the issuer.
Source: Moody's Financial Metrics™

Profile

EDP - Energias de Portugal, S.A. (EDP) is a vertically integrated utility company, with consolidated revenue of €20.7 billion and EBITDA of €4.5 billion in 2022. It is the largest electric utility in Portugal and also has a small share of Portugal's gas supply market. Through its operations in Spain, EDP is among the four largest electricity generation companies in the Iberian peninsula[1].

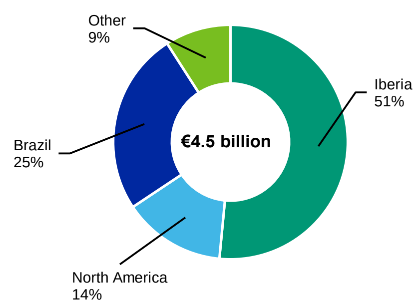
EDP's 71.2%-owned subsidiary EDP Renovaveis SA (EDPR) holds its wind and solar renewables activities worldwide. EDPR is one of the largest onshore wind power operators globally, with a particular focus on the United States of America (Aaa stable) and Iberia. EDP is also present in Brazil (Ba2 stable) via its 57.5 holding in EDP - Energias do Brasil S.A. (EDP Brasil) as of December 2022. EDP plans to buy out the minorities in EDP Brasil.

Exhibit 3
Business mix is focused on renewables and regulated activities
EBITDA breakdown by business (2022)



Source: Company reports

Exhibit 4
Iberia accounts for around half of EDP's EBITDA
EBITDA breakdown by geography (2022)



Source: Company reports

EDP is listed on the Lisbon stock exchange, with a market capitalisation of around €20 billion. As of April 2023, its largest shareholder was China Three Gorges Corporation (CTG, A1 stable), with a 20.86% share. Other shareholders include BlackRock, Inc. (Aa3 stable, 6.82%), investment holding company Oppidum Capital (6.82%) and Canada Pension Plan Investment Board (Aaa stable, 5.61%).

Detailed credit considerations

Diversified business mix moderates earnings volatility

EDP's credit profile benefits from its scale (total assets as of December 2022: €59 billion) and leading position in Portugal, as well as its diversification by geography, asset type and fuel mix, which helps moderate aggregate earnings volatility.

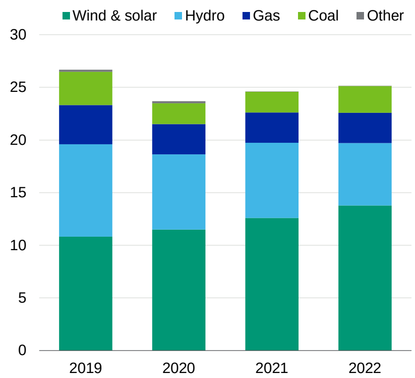
EDP's geographical diversification, however, exposes it to exchange rate risk, notably in respect of the US dollar and the Brazilian real against the euro. This risk is mitigated by the group's policy of hedging its foreign-currency exposure with local-currency debt and through derivatives. As of December 2022, 36% of EDP's debt was denominated in US dollars and 14% was in Brazilian real.

Renewables benefit from long-term contracts but are exposed to volume volatility, whereas merchant generation in Iberia is exposed to volatile power prices

The group's wind and solar power generation portfolio, held by EDPR, which had a total capacity of 13.8 gigawatts (GW) as of December 2022 and accounted for 48% of group EBITDA in 2022, benefits largely from the protection provided by feed-in tariffs, prices with caps and floors or long-term power purchase agreements (PPAs)[2]. The group's onshore wind farms are subject to output variability, which is dependent on wind conditions and asset availability. That volatility is somewhat mitigated by the geographical diversification of EDP's wind portfolio.

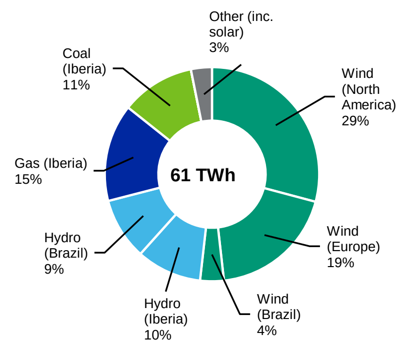
In Brazil, EDP's hydro and thermal generation assets, which accounted for 7% of group EBITDA in 2022, also operate under inflation-linked PPAs, with reduced hydro risk exposure since 2016, when the Generation Scaling Factor insurance agreement was put in place to transfer part of the hydrological risk.

Exhibit 5
Wind and solar capacity has been growing
Split of installed capacity (GW)



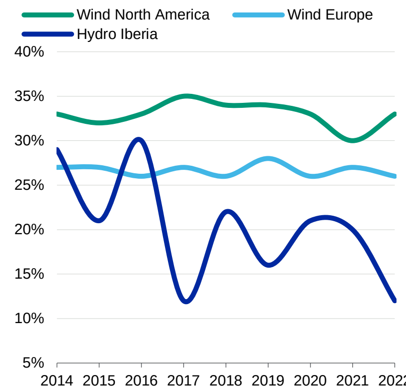
Source: Company reports

Exhibit 6
Around 75% of EDP's output is renewables
Output split by fuel and geography (2022)



Percentages may be rounded.
Source: Company reports

Exhibit 7
Renewables are exposed to resource volatility
Load factors



Source: Company reports

In Iberia, EDP's hydro, nuclear, gas- and coal-fired generation, and energy management business, which accounted for 11% of group EBITDA in 2022, are exposed to volume risk and market prices. The group mitigates its commodity price exposure through forward sales (in Iberia, 75% of EDP's expected baseload production is hedged for 2023 above €65/MWh, and 35% of 2024-25 production at around €65/MWh, as mentioned during the company's third-quarter 2022 results conference call) and through its strong position in supply, where it had market shares in Portugal of around 72% and 41% in terms of customer numbers and volume, respectively, in 2022.

Nonetheless, EDP remains highly exposed to variations in hydro output, as illustrated by a shortfall in hydro production of 3.3 TWh in the first nine months of 2022, compared with the historical average, because of a severe drought in both Portugal and Spain. The impact of this shortfall was only mitigated by increased thermal power generation in the context of higher prices and good hydrological conditions at year-end 2022. EDP expects to decrease its exposure to hydropower generation by 2026.

Regulated networks in Iberia provide cash flow stability and predictability

Earnings volatility is mitigated by the contribution from electricity distribution and transmission networks, whose tariffs are regulated in their concession areas in Portugal, Spain and Brazil. They accounted for 33% of group EBITDA in 2022 and had a combined regulated asset base (RAB) of about €7 billion as of December 2022.

Exhibit 8
Regulated electricity distribution networks provide cash flow stability

	Portugal - high/medium voltage	Portugal - low voltage	Spain	Brazil - Espirito Santo	Brazil - Sao Paulo	Brazil - Transmission
EBITDA (2022)	€533 million		€358 million	BRL 1,184 million	BRL 1,190 million	BRL 970 million
Regulator	ERSE	ERSE	CNMC	ANEEL	ANEEL	ANEEL
Distributed electricity (2022)	24.0 TWh	21.5 TWh	13.3 TWh	26.5 TWh		n/a
Concessions maturity	2044	2021-26 [1]	Perpetuity	2025	2028	2051
RAB (2022)	€1.7 billion	€1.2 billion	€1.9 billion	BRL2.6 billion	BRL2.6 billion	BRL6.5 billion [2]

[1] Most concessions expired in 2021-2022 and a few concessions end in 2026. [2] Corresponds to financial assets, not RAB.
Source: Company reports

The regulatory framework for electricity distribution networks in Portugal is relatively established and stable; there has been a reasonable degree of continuity of principles over the past few regulatory periods, which is credit supportive. Revenue is regulated by Entidade Reguladora dos Servicos Energeticos (ERSE). For the current four-year regulatory period, which started in January 2022, the allowed return is indexed on the evolution of the 10-year sovereign bond yield, with a floor of 4% (lowered by 75 basis points [bps] compared with the previous period) and a cap of 7.3%. For 2022, the allowed return was initially set at 4.7%, and eventually reached 5.05% because sovereign bond yield rose during the year. For 2023, the allowed return was initially set at 5.05%, and will also be adjusted to the 10-year sovereign bond yield during the year (in the first quarter of 2023, the return was 5.56%). In addition, the RAB and total expenditure will be adjusted for inflation after applying an efficiency factor of 0.75%.

No decision has been made yet on the renewal of EDP's low-voltage concessions, 92% of which expired in 2021-22. Nonetheless, Portuguese law establishes that in return for the assets returned to the granters of the concessions, compensation corresponding to the assets' book value, net of amortisations, financial contributions and nonrefundable subsidies will be paid.

In December 2022, ERSE announced that low-voltage end users' regulated electricity tariffs for 2023 would increase by 3.3% compared with 2022, well below what the rise in Iberian wholesale electricity prices would have suggested, as regulated tariff levels reflect the abundance of competitive renewables feed-in tariffs. In May 2023, ERSE proposed an increase in access tariffs from July 2023 - which would be offset at the customers' regulated tariff level by a lower wholesale electricity price component. This increase will help stabilize the Portuguese electricity system tariff deficit after a €300 million increase in the first quarter of 2023.

In Spain, there is good visibility into revenue for the six-year regulatory period for electricity networks, which started in January 2020. The allowed return was set at 5.58% (pretax, nominal) by the National Commission of Markets and Competition (CNMC, the regulator), which represents a decrease of more than 90 bps from 6.5% for the previous period.

EDP Brasil's electricity distribution activities provide lower earnings predictability because of the exposure to economic risk in Brazil. Nonetheless, we expect tariff adjustments and regulatory support to help maintain stability. EDP Brasil's Espírito Santo distribution concession will expire in 2025; we expect this concession to be renewed with only minor adjustments, for instance related to quality of service requirements.

Exposure to macroeconomic, political and regulatory risks in Portugal and Spain

EDP generated around half of its EBITDA in Iberia in 2022, and experts this share to decrease to 45% in 2026. The company is therefore exposed to macroeconomic conditions and related financial, regulatory or political strain in Portugal and Spain. Notably, the current high inflationary environment raises the risk of adverse regulatory or political intervention to support consumers' affordability, in particular in Spain, as illustrated by the measures already announced.

The Spanish government introduced, in September 2021, a new tax to limit the impact of rising wholesale gas prices on consumers' electricity and gas tariffs (see New tax on Spanish nuclear and hydro is credit negative, 16 September 2021). This tax was further extended until year-end 2023, with the Royal Decree-Law 18/2022.

Separately, in June 2022, with the Royal Decree-Law 10/2022, Spanish and Portuguese governments implemented a production cost adjustment arrangement to reduce the price of electricity on the wholesale market. In March 2023, the mechanism was prolonged until the end of 2023 with Royal Decree-Law 3/2023. The gas price cap was initially set at €40/MWh over the first six months, subsequently rising €5/MWh per month up to €55/MWh in March 2023, and then rising €1.1/MWh per month up to €65/MWh in December 2023, hence limiting wholesale power prices in the region. At current spot and forward power price levels, this cap is not expected to be an active restriction.

In addition, the Spanish government implemented a new tax on energy companies of 1.2% on revenue generated from non-regulated activities in the Spanish territory. The tax will affect companies that had revenue equal to or more than €1,000 million in 2019 and will be due in 2023 and 2024 for 2022 and 2023, respectively. We expect the impact of this tax burden on EDP's accounts to be limited.

There is some level of uncertainty surrounding the implementation of some of the measures announced and their potential impact on EDP's credit profile, but they illustrate the increased risk of government intervention for utilities in the context of an evolving macroeconomic and operating environment.

Strategic focus on renewables and networks is positive for business mix, but execution risks remain

EDP's 2023-26 strategic plan, announced in March 2023, provides for a capital spending programme of €25 billion for the four years, equivalent to €6.25 billion per annum (which implies a 30% increase from €4.8 billion per annum under the previous plan), a renewable asset rotation programme of €1.7 billion per annum on average and 18 GW of additional renewable capacity.

The investment plan focuses on growing a set of diversified renewables technologies, including renewables investments diversified by technologies including wind onshore (40%), solar PV utility scale (40%), solar distributed generation (12%), wind offshore (5%) and storage and hydrogen (3%).

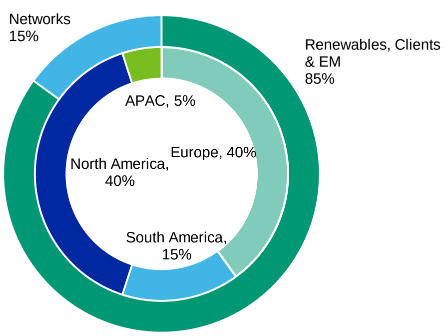
EDP targets to add 18 GW of renewable capacity by 2026, comprising mostly onshore wind and solar in the US and Europe; to grow its distribution network asset base to around €6.6 billion, mostly driven by investments in Brazil; to increase the efficiency of its client solutions and energy management business, which encompasses supply and thermal generation in Iberia and Brazil; and to scale up energy services such as solar distributed generation and e-mobility.

Overall, we expect the group's business risk profile to continue to develop favourably over the plan period given the focus on contracted and regulated activities.

Exhibit 9

Investment is focused on renewables

Split of capital spending by business and geography (2023-26)



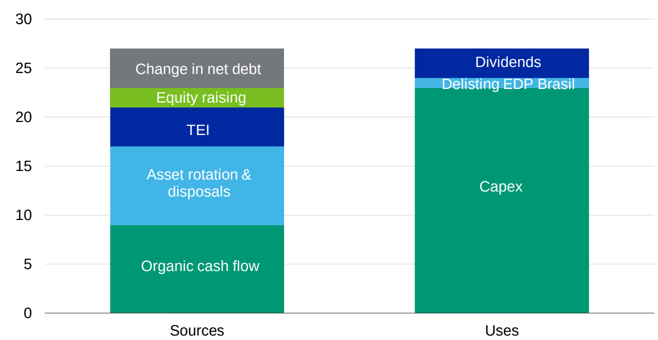
Outer circle: business; inner circle: geography.

Source: Company reports

Exhibit 10

EDP will rely on asset rotation

Sources and uses of cash over 2023-26 in € billion



Source: Company reports

EDP's strategy implies some risks because of the scale of investment, which can present operational difficulties. The plan includes the build-out of 18 GW of gross installed renewable capacity over 2023-26, equivalent to 4.5 GW per annum, although this is partly conditional on the asset rotation programme, which contemplates disposal of around 7 GW. The company added 2.2 GW of new renewable capacity in 2022, and has further secured a total of 7 GW of new renewable capacity to be commissioned over 2023-26, as of December 2022. However, EDP acknowledged some delays in solar capacity additions because of supply chain issues in the US. In addition, and like other developers EDP is exposed to higher capital spending costs driven by increased commodity and metal prices, which could in turn exert downward pressure on returns. These have nonetheless been offset so far by higher bid prices achieved in PPAs and auctions.

EDP also plans to buy out the minorities in EDP Brasil for about €1 billion - a credit positive as this will somewhat simplify EDP's corporate structure. EDPR will also offer shareholders the option to receive script dividend. Consequently, we expect dividends paid to minorities to diminish, which will support EDP's RCF/net debt trajectory.

Execution risks are further moderated by:

» EDP's sizeable renewables pipeline, which has enabled it to secure 7 GW of the targeted renewable capacity additions over 2023-26 with long-term contracts, as of December 2022;

» the limited technological risks associated with the targeted development of renewables, which is focused mostly on wind (45%) and solar (52%)[3], while country focus will remain on North America (40% of capacity additions), Europe (40%) and South America (15%) with the addition of APAC (5%) where EDP established its position through the acquisition of Singapore-based Sunseap in 2022;

» the limited complexity associated with network investments;

» the track record demonstrated by EDP in rotating renewable assets, with €2 billion of asset rotation proceeds in 2022;

Financial profile will remain solid despite rising debt

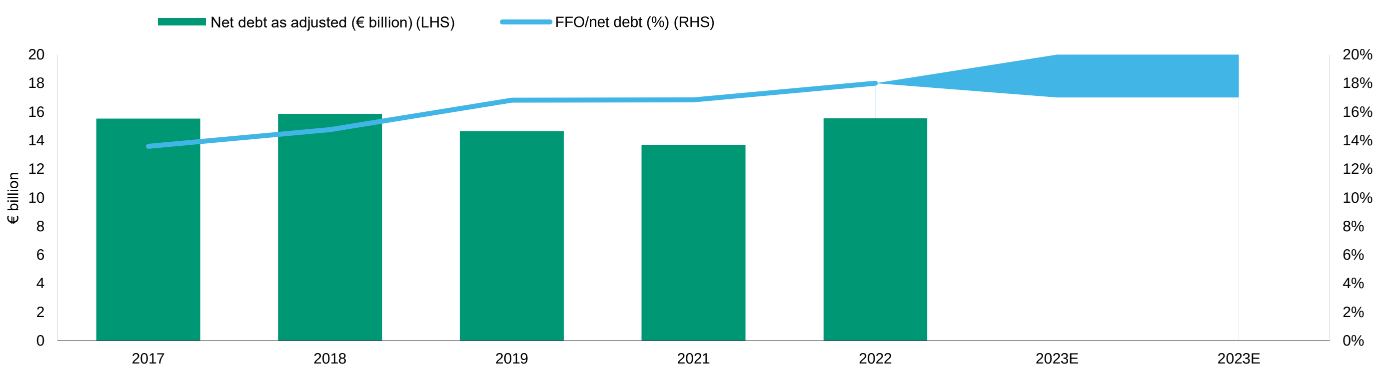
EDP's adjusted FFO/net debt rose to 18.0% in 2022 from 16.8% in the prior year, despite extreme drought conditions in the first nine months of the year in Portugal and strong pressure on cash collaterals, reflecting solid operating performance, notably in the wind and solar and the electricity networks businesses, and improved working capital at end year associated with the decline in commodity prices.

Under its new strategy, EDP targets to further improve its financial profile with adjusted net debt/EBITDA (company definition) of 3.3x in 2026 versus 3.4x in 2022. We therefore expect EDP's credit metrics to remain strong, taking into account the front-loading of several creditor-friendly measures to finance its investment programme, including the two €1 billion capital increases performed at EDPR and EDP in March 2023. We also expect EDP's credit metrics to benefit from higher achieved power prices as hedges in the merchant power generation business in Iberia roll off, as the company continues to execute its strategy.

In addition, EDP has adjusted its dividend policy from 75%-85% payout with a €0.19 dividend floor per share to 60%-70% payout with the dividend floor rising to €0.20 per share in 2026 from €0.19 per share in 2023. We view positively the lower payout, along with EDP's management's commitment to take steps to reinforce its balance sheet, if needed, to maintain sustainable leverage.

Exhibit 11

We expect FFO/net debt to remain in the upper-teen percentages, despite rising debt



The 2023-24 estimates represent Moody's forward view and not the view of the issuer.
Source: Moody's Investors Service

EDP has moderate exposure to rising interest rates. This is because 25% of the group's gross debt was at floating rates as of December 2022, with the remaining 75% at fixed rates. Also, EDP midswap pre-hedged €1 billion and $1 billion at 1.8% and 2.6% average cost of debt, respectively.

ESG considerations

EDP - Energias de Portugal, S.A.'s ESG Credit Impact Score is Moderately Negative CIS-3

Exhibit 12
ESG Credit Impact Score

CIS-3
Moderately Negative

NEGATIVE IMPACT — POSITIVE IMPACT

For an issuer scored CIS-3 (Moderately Negative), its ESG attributes are overall considered as having a limited impact on the current rating, with greater potential for future negative impact over time. The negative influence of the overall ESG attributes on the rating is more pronounced compared to an issuer scored CIS-2.

Source: Moody's Investors Service

EDP's ESG Credit Impact Score is moderately negative (**CIS-3**), reflecting moderate environmental, and social risks, as well as low governance risks.

Exhibit 13
ESG Issuer Profile Scores

ENVIRONMENTAL	SOCIAL	GOVERNANCE
E-3	S-3	G-2
Moderately Negative	Moderately Negative	Neutral-to-Low

Source: Moody's Investors Service

Environmental
EDP's moderate environmental risk (**E-3** issuer profile score) reflects the company's exposure to physical climate risks, including the exposure of hydro power generation to resource volatility. These risks are balanced by EDP's neutral to low exposure to carbon transition risk, given its relatively low carbon intensity, with scope 1 and 2 emissions of 160gCO2/KWh in 2022. We expect carbon intensity to decrease further as the company shuts down coal-fired plants in Iberia and continues its build-out of renewables. EDP targets to exit coal-fired generation by 2025 and have 100% renewable generation by 2030.

Social
EDP's social risk is moderately negative (**S-3**), reflecting the risk, common to all utilities, that public concern over environmental, social or affordability issues could lead to adverse regulatory or political intervention. These risks are balanced by neutral to low risks to health and safety, human capital, customer relationships and responsible production.

Governance
Governance risks are neutral/low (**G-2**). Although ownership concentration can be a credit risk, CTG's track record of support for EDP mitigates this risk. CTG has been a major shareholder with representation on the company's General and Supervisory Board since May 2012 when it acquired its initial stake and stabilised EDP during the euro area crisis. At the same time, EDP faces moderate risks relative to the existence of significant minority shareholders in large subsidiaries of the group, as well as the potential risks that could arise from the ongoing investigation regarding the early termination of certain power purchase agreements and certain payments in relation to the extension of hydro power concessions.

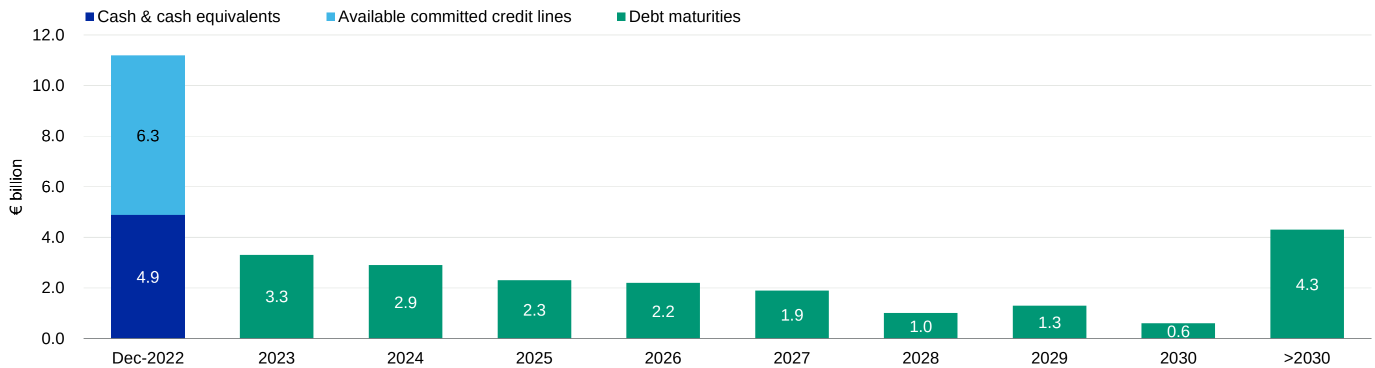
ESG Issuer Profile Scores and Credit Impact Scores for the rated entity/transaction are available on Moodys.com. In order to view the latest scores, please click here to go to the landing page for the entity/transaction on MDC and view the ESG Scores section.

Liquidity analysis

EDP has sound liquidity, underpinned, as of December 2022, by cash and cash equivalents of €4.9 billion; a total of €6.3 billion undrawn revolving credit facilities, including notably a €2.2 billion undrawn revolving credit facility maturing in March 2025 and a €3.7 billion undrawn revolving credit facility maturing in August 2027; and short-term credit facilities of €255 million. Combined with operating cash flow, these sources are available to cover expected average annual gross investments of around €6.0 billion-€6.5 billion; debt maturities; and annual dividend payments including minorities of around €0.8 billion.

Exhibit 14

EDP's liquidity sources will comfortably cover debt maturities in the medium term



Source: Company reports

In addition, EDP has demonstrated a good track record of accessing the debt capital markets, as illustrated by the issuance of a €1 billion green hybrid bond in January 2023 (issued for replacement of the 2019 €1 billion green hybrid that has a first call date in January 2024) and of a SDG 1 billion green loan in April 2023. The company has also been able to securitise regulatory receivables associated with Portugal's tariff deficit, reflecting good interest from investors.

Structural considerations

EDP Finance B.V. (Baa2 stable) is the group's main issuer under the €15 billion euro medium-term note programme, which benefits from a keepwell agreement with EDP. EDP is the issuer of the group's €3.75 billion hybrid securities (as of December 2022).

As of December 2022, 19% of the group's gross debt, down from 22% as of December 2021, was raised at the subsidiary level, reflecting the existence of significant minority shareholders at EDP Brasil. Debt at the level of EDP Brasil is ring-fenced. However, in March 2023, as part of its strategic plan, EDP announced its intention to delist EDP Brasil financed by a capital increase at the EDP level, with the delisting likely to be concluded in the second half of 2023. We expect the level of structural subordination to remain low. While the March 2023 €1 billion capital increase at the EDPR level has reduced EDP's ownership in EDPR to 71.20% from 74.98%, we expect the overall level of cash flow leakage to minorities to reduce.

Exhibit 15

EDP's debt structure as of December 2022

In € million	Gross debt	Gross debt in %	Cash	Net debt	Net debt in %
EDP SA and EDP Finance BV	16,043	78%	1,565	14,478	85%
EDPR	1,735	8%	1,205	530	3%
EDP Brasil	2,756	13%	729	2,027	12%
EDP Espanha	0	0%	14	-3	0%
Total	**20,534**	**100%**	**3,514**	**17,020**	**100%**

Source: Company reports

Methodology and scorecard

EDP is rated in accordance with our rating methodology for Unregulated Utilities and Unregulated Power Companies, published in May 2017. EDP's Baa2 rating is in line with the scorecard-indicated outcome of Baa2.

Exhibit 16

Rating factors

EDP - Energias de Portugal, S.A.

Unregulated Utilities and Unregulated Power Companies Industry [1][2]	Current FY 12/31/2022		Moody's 12-18 Month Forward View As of May 2023 [3]	
Factor 1 : Scale (10%)	**Measure**	**Score**	**Measure**	**Score**
a) Scale (USD Billion)	Aa	Aa	Aa	Aa
Factor 2 : Business Profile (40%)				
a) Market Diversification	A	A	A	A
b) Hedging and Integration Impact on Cash Flow Predictability	A	A	A	A
c) Market Framework & Positioning	Baa	Baa	Baa	Baa
d) Capital Requirements and Operational Performance	Ba	Ba	B	B
e) Business Mix Impact on Cash Flow Predictability	Aa	Aa	Aa	Aa
Factor 3 : Financial Policy (10%)				
a) Financial Policy	Baa	Baa	Baa	Baa
Factor 4 : Leverage and Coverage (40%)				
a) (CFO Pre-W/C + Interest) / Interest (3 Year Avg)	4.7x	Baa	4x - 6x	Baa
b) (CFO Pre-W/C) / Net Debt (3 Year Avg)	17.3%	Ba	17%-20%	Ba
c) RCF / Net Debt (3 Year Avg)	11.0%	Ba	12%-15%	Ba
Rating:				
a) Scorecard-Indicated Outcome		Baa1		Baa2
b) Actual Rating Assigned				Baa2

[1] All ratios are based on adjusted financial data and incorporate Moody's Global Standard Adjustments for Non-Financial Corporations.
[2] As of 12/31/2022.
[3] This represents Moody's forward view, not the view of the issuer, and unless noted in the text, does not incorporate significant acquisitions and divestitures.
Source: Moody's Financial Metrics™

Ratings

Exhibit 17

Category	Moody's Rating
EDP - ENERGIAS DE PORTUGAL, S.A.	
Outlook	Stable
Issuer Rating	Baa2
Senior Unsecured -Dom Curr	Baa2
Jr Subordinate -Dom Curr	Ba1
Commercial Paper -Dom Curr	P-2
EDP FINANCE B.V.	
Outlook	Stable
Bkd Senior Unsecured	Baa2
Bkd Commercial Paper -Dom Curr	P-2

Source: Moody's Investors Service

Appendix

Exhibit 18

Peer comparison

EDP - Energias de Portugal, S.A.

	EDP - Energias de Portugal, S.A. Baa2 Stable			Iberdrola S.A. (P)Baa1 Stable			Endesa S.A. Baa1 Negative			Naturgy Energy Group SA Baa2 Stable		
(in EUR million)	FYE Dec-20	FYE Dec-21	FYE Dec-22	FYE Dec-20	FYE Dec-21	FYE Dec-22	FYE Dec-20	FYE Dec-21	FYE Dec-22	FYE Dec-20	FYE Dec-21	FYE Dec-22
Revenue	12,448	14,983	20,651	33,145	39,114	53,949	16,717	20,527	32,545	15,345	22,140	33,965
EBITDA	2,828	3,019	4,296	9,555	11,644	12,770	3,739	4,278	5,243	3,328	3,775	4,657
Total Assets	43,201	50,903	58,816	122,369	141,607	154,478	32,062	39,968	49,960	39,545	39,191	41,260
Total Debt	17,595	16,977	20,494	44,230	48,382	53,759	8,571	11,654	19,309	20,421	18,888	18,048
Net Debt	14,643	13,705	15,542	40,803	44,349	49,151	8,168	10,951	18,438	16,109	14,923	14,063
FFO / Net Debt	16.8%	16.8%	18.0%	19.7%	21.7%	20.3%	41.3%	31.6%	25.1%	16.2%	16.9%	31.3%
RCF / Net Debt	11.1%	10.0%	11.6%	11.5%	15.8%	13.8%	22.0%	12.1%	16.7%	5.6%	5.6%	20.9%
(FFO + Interest Expense) / Interest Expense	5.2x	4.9x	4.3x	7.4x	7.6x	5.5x	18.8x	21.6x	15.9x	5.7x	5.6x	8.2x
Debt / Book Capitalization	55.3%	51.1%	55.6%	45.1%	43.4%	45.1%	50.2%	62.4%	73.2%	62.6%	65.8%	61.4%

All metrics are based on adjusted financial data and incorporate Moody's Global Standard Adjustments for Non-Financial Corporations.
Source: Moody's Financial Metrics™

Exhibit 19

Adjusted net debt calculation

EDP - Energias de Portugal, S.A.

(in EUR million)	FYE Dec-18	FYE Dec-19	FYE Dec-20	FYE Dec-21	FYE Dec-22
As Reported Total Debt	16,085	17,409	17,342	17,867	21,410
Pensions	759	631	630	487	346
Leases	842	0	0	0	0
Hybrid Securities	(370)	(867)	(869)	(1,859)	(1,859)
Non-Standard Adjustments	130	226	492	481	596
Moody's Adjusted Total Debt	17,447	17,399	17,595	16,977	20,494
Cash & Cash Equivalents	(1,913)	(1,543)	(2,952)	(3,272)	(4,952)
Moody's Adjusted Net Debt	15,534	15,856	14,643	13,705	15,542

All metrics are based on adjusted financial data and incorporate Moody's Global Standard Adjustments for Non-Financial Corporations.
Source: Moody's Financial Metrics™

Exhibit 20

Adjusted EBITDA breakdown

EDP - Energias de Portugal, S.A.

(in EUR million)	FYE Dec-18	FYE Dec-19	FYE Dec-20	FYE Dec-21	FYE Dec-22
As Reported EBITDA	3,230	3,727	3,774	3,759	4,581
Unusual Items - Income Statement	(211)	(207)	(625)	(325)	(131)
Pensions	18	9	37	7	2
Leases	95	0	0	0	0
Interest Expense - Discounting	(154)	(146)	(202)	(285)	(156)
Non-Standard Adjustments	(183)	(180)	(156)	(137)	0
Moody's Adjusted EBITDA	2,794	3,202	2,828	3,019	4,296

All metrics are based on adjusted financial data and incorporate Moody's Global Standard Adjustments for Non-Financial Corporations.
Source: Moody's Financial Metrics™

Exhibit 21

Select historical adjusted financial data

EDP - Energias de Portugal, S.A.

(in EUR million)	FYE Dec-18	FYE Dec-19	FYE Dec-20	FYE Dec-21	FYE Dec-22
INCOME STATEMENT					
Revenue	15,278	14,333	12,448	14,983	20,651
EBITDA	2,794	3,202	2,828	3,019	4,296
EBIT	1,365	1,767	1,409	1,519	2,643
Interest Expense	699	737	591	589	859
Net income	445	630	503	236	859
BALANCE SHEET					
Net Property Plant and Equipment	23,549	20,457	21,350	22,015	25,537
Total Assets	42,353	42,179	43,201	50,903	58,816
Total Debt	17,447	17,399	17,595	16,977	20,494
Cash & Cash Equivalents	1,913	1,543	2,952	3,272	4,952
Net Debt	15,534	15,856	14,643	13,705	15,542
Total Liabilities	33,475	33,096	33,296	40,273	48,670
CASH FLOW					
Funds from Operations (FFO)	2,111	2,339	2,463	2,307	2,803
Cash Flow From Operations (CFO)	2,485	1,888	1,938	1,553	3,016
Dividends	878	868	832	931	1,000
Retained Cash Flow (RCF)	1,233	1,471	1,632	1,376	1,803
Capital Expenditures	(1,761)	(2,338)	(2,380)	(3,320)	(3,588)
Free Cash Flow (FCF)	(154)	(1,318)	(1,273)	(2,698)	(1,571)
INTEREST COVERAGE					
(FFO + Interest Expense) / Interest Expense	4.0x	4.2x	5.2x	4.9x	4.3x
LEVERAGE					
FFO / Net Debt	13.6%	14.7%	16.8%	16.8%	18.0%
RCF / Net Debt	7.9%	9.3%	11.1%	10.0%	11.6%
Debt / EBITDA	6.2x	5.4x	6.2x	5.6x	4.8x
Net Debt / EBITDA	5.6x	5.0x	5.2x	4.5x	3.6x

All metrics are based on adjusted financial data and incorporate Moody's Global Standard Adjustments for Non-Financial Corporations.
Source: Moody's Financial Metrics™

Moody's related publications

Industry outlook

» Unregulated Electric & Gas Utilities – Europe: 2023 Outlook - Negative on heightenedrisks from ongoing energy crisis, 28 November 2022

Sector research

» EU electricity market reform proposal credit positive for European unregulated utilities, 16 March 2023

» Europe’s electricity markets – Tight supply will keep power prices high and prompt further government intervention, 16 November 2022

» Cross-Sector – Europe – Liquidity challenges in Europe's energy markets prompt further government intervention, 12 September 2022

» Long Russia-Ukraine crisis would hit EMEA & Latam utilities and non-US airports, 26 April 2022

» European utilities have limited operations in Russia and Ukraine but are exposed to higher energy prices, 23 February 2022

» Europe's electricity markets: In Iberia, higher energy prices raise political risk, but economics continue to support decarbonisation, 30 November 2021

» Europe's electricity markets: In Europe, high energy prices will not derail the energy transition, 30 November 2021

» Unregulated electric and gas utilities – Europe: Higher energy prices raise affordability concerns and political risk, 7 October 2021

» New tax on Spanish nuclear and hydro is credit negative, 16 September 2021

Endnotes

1 Together with **Iberdrola S.A.** (Baa1 stable), **Endesa S.A.** (Baa1 negative) and **Naturgy Energy Group SA** (Baa2 stable).

2 For example, as of December 2022, 88% of the group's renewables capacity in North America benefited from long-term PPAs or hedges, with the remaining 12% only exposed to merchant price risk.

3 Offshore wind is developed by Ocean Winds, the dedicated joint venture between EDPR and **ENGIE SA** (Baa1 stable).

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