MOODY'S
INVESTORS SERVICE

CREDIT OPINION
9 June 2021

Update

Rate this Research

EDP - Energias de Portugal, S.A.

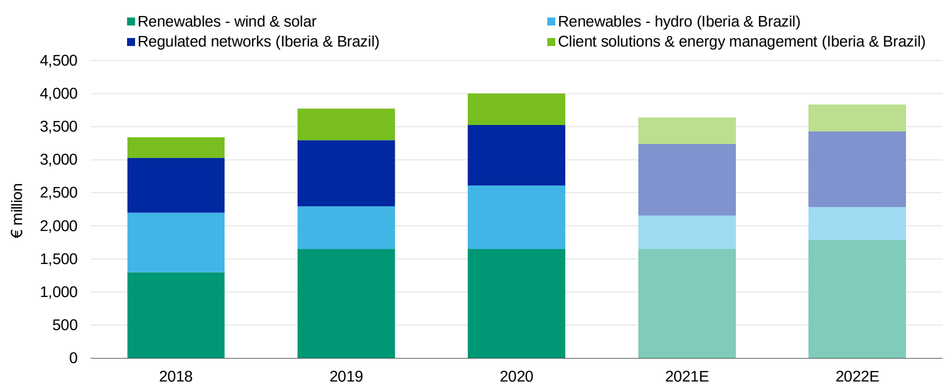
Update following change in outlook to positive

Summary

The credit profile of EDP - Energias de Portugal, S.A. (EDP, Baa3 positive) is supported by the company's diversified business and geographical mix, which help moderate earnings volatility; the stable earnings stemming from contracted generation and regulated networks, which account for over 75% of group EBITDA; 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; and the group's track record of rotating assets to alleviate financing needs.

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 resource globally; the residual exposure to volatile power prices of EDP's merchant generation and supply activities; the execution risks associated with the group's significant capital spending over 2021-25, with €24 billion of gross investments planned over the period; the remaining exposure to Portugal (Baa3 positive) and the challenging macro-economic environment in Brazil (Ba2 stable); EDP's relatively high dividend payout, which constrains financial flexibility; 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 2020 EBITDA includes the capital gain from the sale of hydropower assets in Portugal. The 2021-22 estimates represent Moody's forward view and not the view of the issuer.
Source: Company data and Moody's Investors Service

RATINGS

EDP - Energias de Portugal, S.A.

Domicile	Lisbon, Portugal
Long Term Rating	Baa3
Type	LT Issuer Rating
Outlook	Positive

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.

Contacts

Paul Marty +33.1.5330.3371
Senior Vice President/Manager
paul.marty@moodys.com

Benjamin Leyre +33.1.5330.3373
VP-Sr Credit Officer
benjamin.leyre@moodys.com

Jonathan Dolbear +44.20.7772.1099
Associate Analyst
jonathan.dolbear@moodys.com

Neil Griffiths-Lambeth +44.20.7772.5543
Associate Managing Director
neil.griffiths-lambeth@moodys.com

CLIENT SERVICES

Americas	1-212-553-1653
Asia Pacific	852-3551-3077
Japan	81-3-5408-4100
EMEA	44-20-7772-5454

Credit strengths

» The diversified business and geographical mix helps moderate earnings volatility

» Regulated and contracted activities account for over 75% of EBITDA

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

» Track record of rotating assets to alleviate financing needs

Credit challenges

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

» Execution risks associated with significant capital spending programme

» Political and regulatory risks in Portugal

» Weak macroeconomic conditions in Brazil

» Relatively high dividend payout

Rating outlook

The positive outlook reflects our expectation that credit metrics could strengthen further as the company executes its updated strategy.

Factors that could lead to an upgrade

The ratings could be upgraded if EDP's progress on the delivery of its strategy were to result in a sustained strengthening of its financial profile, with funds from operations (FFO)/net debt in the high teens and retained cash flow (RCF) to net debt trending towards the low teens (both in percentage terms).

Factors that could lead to a downgrade

Given the positive outlook, downward pressure on the ratings is unlikely. The outlook could be stabilised if credit metrics appear likely to remain persistently below the guidance for the higher rating. The ratings could be downgraded if EDP's credit metrics fell below the guidance for the Baa3 rating, which includes FFO/net debt in the mid-teens and RCF/net debt in the low double digits (both in percentage terms).

Key indicators

Exhibit 2

EDP - Energias de Portugal, S.A.

	Dec-16	Dec-17	Dec-18	Dec-19	Dec-20	2021E	2022E
(CFO Pre-W/C) / Net Debt	11.9%	13.9%	13.6%	14.8%	16.6%	16-19%	16-19%
RCF / Net Debt	7.4%	8.6%	7.9%	9.3%	11.0%	10-13%	10-13%
(FFO + Interest Expense) / Interest Expense	3.3x	3.9x	3.9x	4.2x	5.1x	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 view of the issuer.

Source: Moody's Financial Metrics™

Profile

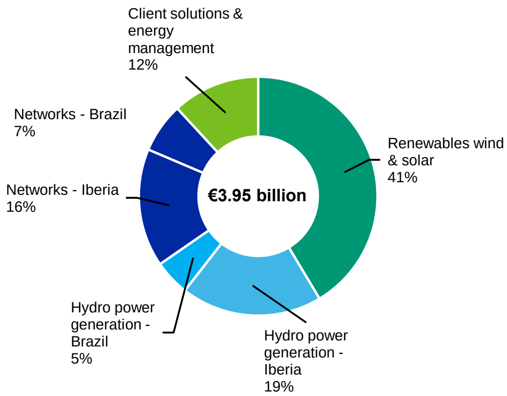
EDP - Energias de Portugal, S.A. (EDP) is a vertically integrated utility company, with consolidated revenue of €12.4 billion and EBITDA of €3.9 billion in 2020. It is the largest electric utility in Portugal, accounting for around 43% of installed power generation capacity, 99% of electricity distribution and around 42% of liberalised electricity supply as of March 2021. It also has a small share of Portugal's gas supply market. Through its operations in Spain (Baa1 stable), EDP is among the four largest electricity generation companies on the Iberian peninsula.[1]

EDP's 75.0%-owned subsidiary EDP Renovaveis SA (EDPR) holds its wind and solar renewables activities worldwide. EDPR is one of the largest onshore wind power operators worldwide, with a particular focus on the US (Aaa stable) and Iberia. EDP is also present in Brazil via its 52.6% holding in EDP - Energias do Brasil S.A. (EDB, Ba2 stable).

Exhibit 3

Business mix is focused on renewables and regulated activities

EBITDA breakdown by business (2020)

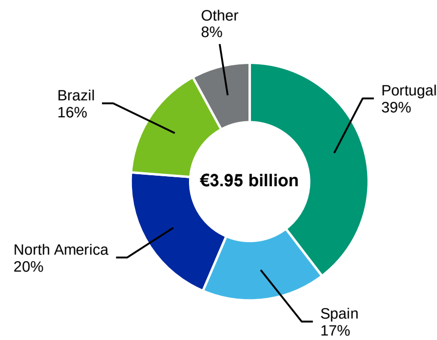


Source: Company reports

Exhibit 4

Iberia accounts for more than half of EDP's EBITDA

EBITDA breakdown by geography (2020)



Source: Company reports

EDP is listed on the Lisbon stock exchange, with a market capitalisation of around €18.3 billion. Its largest shareholder is China Three Gorges Corporation (A1 stable), with 19.0% of the shares. Other shareholders include the investment holding company Oppidum Capital (7.2%) and BlackRock, Inc. (Aa3 stable, 7.1%).

Detailed credit considerations

Diversified business mix moderates earnings volatility

EDP's credit profile benefits from its scale (total assets as of 31 March 2021: €42.5 billion) and leading position in Portugal, as well as its diversification by geography, asset type and fuel mix, which helps moderate aggregate earnings volatility.

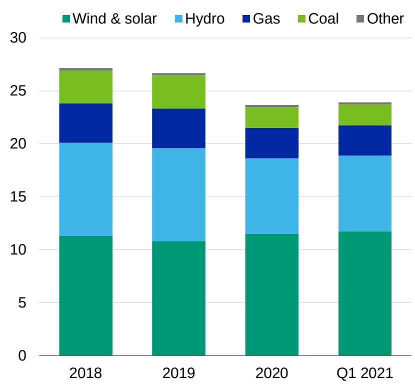
EDP's geographical diversification, however, exposes it to exchange-rate risk, notably in respect of the US dollar and the Brazilian real against the euro. These two currencies have depreciated by around 8% and 30%, respectively, against the euro since the beginning of 2020. This risk is partly mitigated by the group's policy of hedging its foreign-currency exposure by raising debt in local currency and through derivatives. As of 31 March 2021, 34% of EDP's debt was denominated in US dollars and 10% 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 has a total capacity of 11.7 gigawatts (GW) and accounted for 42% of group EBITDA in 2020, benefits in large part 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 nevertheless subject to output variability, which is dependent on wind conditions and asset availability.

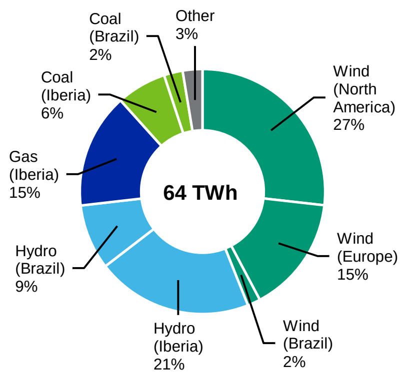
In Brazil, EDP's hydro and thermal generation assets, which accounted for 8% of group EBITDA in 2020, also operate under inflation-linked PPAs, with reduced hydro risk exposure since 2016, when the Generation Scaling Factor (GSF) insurance agreement was put in place to transfer part of the hydrological risk. We expect as a result sustained operating performance in 2021 despite the coronavirus pandemic.[3]

Exhibit 5
Coal- and gas-fired generation are declining, while wind is growing
Split of installed capacity (GW)



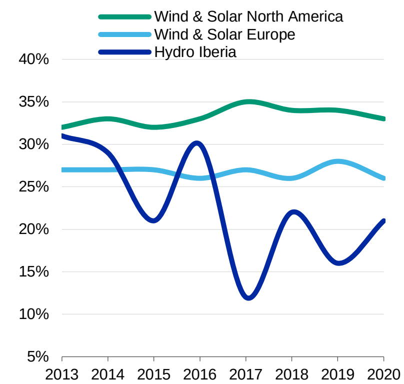
Source: Company reports

Exhibit 6
Close to 75% of EDP's output is renewables
Output split by fuel and geography (2020)



Source: Company reports

Exhibit 7
Renewables are exposed to resource volatility
Load factors in percentage terms



Source: Company reports

In Iberia, EDP's hydro, nuclear, gas-fired and coal-fired generation, which accounted for 24% of group EBITDA in 2020, is exposed to volume risk and market prices. The group mitigates its market exposure through forward sales (as of 31 March 2021, for the remainder of 2021, EDP had sold 100% of its expected hydro and nuclear power production at an average price of €45/MWh, whereas it had hedged 100% of the expected CCGT production at mid single digit average spread) and through its strong position in supply, where it has market shares in Portugal of 75% of 42% in terms of customer numbers and volume, respectively, as of March 2021.

Regulated networks in Iberia provide cash flow stability and predictability, while distribution in Brazil is exposed to economic activity

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 23% of group EBITDA in 2020 and have a combined regulated asset base (RAB) of over €6 billion.

Exhibit 8
Regulated electricity distribution networks in Iberia provide cash flow stability

	Portugal - high/medium voltage	Portugal - low voltage	Spain [2]	Brazil - Espirito Santo	Brazil - Sao Paulo	Brazil - Transmission
EBITDA (2020)	€474 million		€166 million	BRL579 million	BRL640 million	BRL371 million
Regulator	ERSE	ERSE	CNMC	ANEEL	ANEEL	ANEEL
Distributed electricity (2020)	23.2 TWh	21.0 TWh	7.6 TWh	24.4 TWh		n/a
Concessions maturity	2044	2021-22	Perpetuity	2025	2028	2048
RAB (Dec-20)	€1.8 billion	€1.2 billion	€1.7 billion	BRL2.6 billion	BRL2.4 billion	BRL4.1 billion [1]

[1] Corresponds to financial assets, not RAB. [2] Includes Viesgo RAB but excludes Viesgo EBITDA contribution.
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), with tariffs based on an allowance for operating costs, depreciation recovery and a return on the RAB. As a result of the uncertainties created by the coronavirus outbreak, ERSE approved in May 2020 an extension of the parameters underpinning the 2018-20 regulatory period for the electricity sector, until 2021. No decision has been made yet on the renewal of EDP's low-voltage concessions, 92% of which expire 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 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 basis points from 6.5% for the previous period. The consolidation of Viesgo, which owns electricity distribution networks in Spain and was acquired by EDP at year-end 2020, will add around €170 million of EBITDA from 2021 onwards.

EDB's electricity distribution activities provide lower earnings predictability because of the evolving regulatory environment and the exposure to economic risk in Brazil, which is further exacerbated by the coronavirus pandemic (see latest Credit Opinions on EDP Sao Paulo Distribuicao de Energia S.A. [Ba2 stable] and EDP Espirito Santo Distribuicao de Energia SA [Ba2 stable]). Nonetheless, we expect demand recovery, tariff adjustments and regulatory support to help maintain stability.[4]

Exposure to macroeconomic, political and regulatory risk in Portugal

EDP generated 40% of its EBITDA in Portugal in 2020, although we expect this proportion to decline going forward following the disposal of a portfolio of hydro plants in Portugal at year-end 2020. The company remains nevertheless exposed to domestic macroeconomic conditions and related financial, regulatory or political strain. After a GDP contraction of 7.6% in 2020, we expect a limited recovery in 2021 with growth of 4% as economic activity in the first half remains constrained by pandemic dynamics. Growth in Portugal will however strengthen markedly from 2022 onwards as higher inflows of EU funds bolster public investment.[5]

Against this backdrop, the electricity system tariff deficit will level off for Portugal in 2021 after declining in 2020, according to ERSE.[6] This requires in turn EDP to continue to finance the system's regulatory receivables. The company has nonetheless been able to securitise large amounts thereof, with net regulatory receivables of €0.68 billion on its balance sheet as of March 2021. Accordingly, we expect EDP to continue to contribute around €51 million per annum under the extraordinary levy on the energy sector (CESE) which was introduced in 2014.

Strategic focus on renewables and networks is positive for business mix, but there is some reliance on asset rotation

EDP's 2021-25 strategic plan published in February 2021 places renewed emphasis on renewables. The updated plan notably provides for a capital spending programme of €24 billion for the five years, equivalent to €4.8 billion per annum, which implies a 65% increase from €2.9 billion per annum under the previous plan; a renewable asset rotation programme of €8 billion; and a cost reduction programme targeting €100 million of cumulative savings over the period.

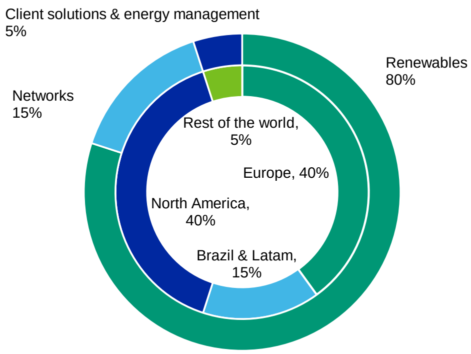
Around 95% of the updated plan's capital spending will be directed at renewables and electricity distribution networks. EDP targets (1) an additional 13 GW of net renewable capacity, comprised mostly of onshore wind and solar in the US and Europe; (2) to grow its networks asset base to around €7 billion, mostly driven by investments in Brazil; and (3) increasing the efficiency of its client solutions and energy management business, which encompasses supply and thermal generation in Iberia and Brazil, as well as scaling up energy services such as solar distributed generation and e-mobility.

Overall, we expect that the group's business risk profile, which was already strengthened in 2020 by the Viesgo acquisition and a reduction in merchant exposure (through the disposal of thermal plants and supply activities in Spain as well as the sale of hydro plants in Portugal), will 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 (2021-25)

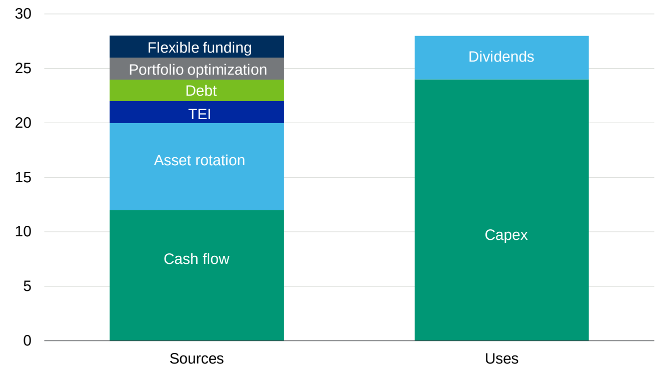


Outer circle: business; inner circle: geography.
Source: Company reports

Exhibit 10

EDP will rely on asset rotation

Sources and uses of cash over 2021-25 in € billion



Portfolio optimization includes hybrids, regulatory receivables, forex and other; flexible funding includes EDPR capital increase, additional hybrids, disposals and asset rotations.
Source: Company reports

EDP's updated strategy implies some additional risks because of the increased scale of investment, which could present operational challenges. The plan includes the build-out of 20 GW of gross installed renewable capacity over 2021-25, equivalent to 4 GW per annum over the later years of the plan, which is 2.5 times the pace of capacity additions in 2020 (1.6 GW). This plan is nevertheless partly conditional upon the execution of the asset rotation programme, which contemplates the disposal of more than 7 GW.

Execution risks are moderated by:

» EDP's sizeable renewables pipeline of 45 GW, which has enabled it to already secure with long-term contracts around 32% of the targeted renewable capacity additions over 2021-25;

» the limited technological risks associated with the targeted development of renewables, which will be focused mostly on onshore wind (46%) and solar (40%),[7] whereas country focus will remain on North America (45% of capacity additions), Europe (35%) and Brazil (15%);

» the limited complexity associated with network investments and the fact that the Brazilian transmission projects are progressing ahead of plan;

» the track record demonstrated by EDP in rotating renewable assets and crystallising value, as illustrated by the announcement in April 2021 of a 405 megawatts asset rotation deal for an enterprise value (100%) of $0.7 billion; and

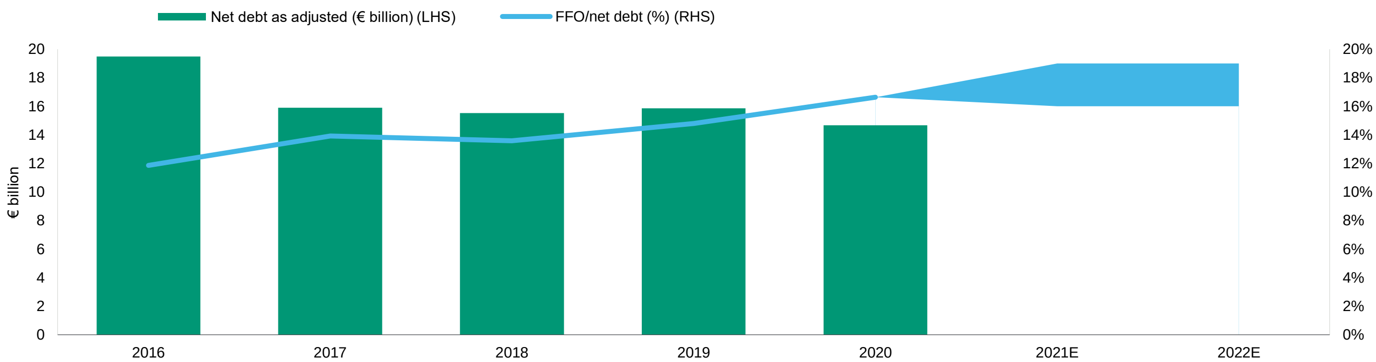
» The front-loading of a number of creditor-friendly financing measures, including the issuance of a €750 million hybrid in January 2021 and a €1.5 billion capital increase completed by EDPR in April 2021.

EDP has recently reduced leverage and credit metrics could strengthen further as the company executes its strategy

EDP's ratio of FFO/net debt rose to close to 17% in 2020 from around 15% in the prior year, reflecting the company's resilience in the context of the coronavirus pandemic, the €1 billion rights issue in August 2020 to partially finance the Viesgo acquisition, as well as the sale of a portfolio of hydro plants in Portugal for €2.2 billion at year-end 2020.

Under its new strategy announced in February 2021, EDP targets to further improve its financial profile with net debt/EBITDA (company definition) of 3.3x in 2023 vs. 3.5x in 2020. We therefore expect that EDP's credit metrics could strengthen further, taking into account the front-loading of several creditor-friendly measures to finance its capex programme. The group's dividend policy, which includes a payout ratio of 75-85% with a €0.19 dividend floor per share, will nevertheless continue to constrain financial flexibility, although we note positively that EDP's management has also committed to take steps to reinforce its balance sheet, if needed, to maintain a sustainable leverage.

Exhibit 11
EDP's credit metrics could strengthen further



The 2021-22 estimates represent Moody's forward view and not the view of the issuer.
Source: Moody's Investors Service

EDP has a moderately higher exposure to interest rate risk than its European utility peers. This is because 34% of the group's gross debt was at floating rates as of March 2021, with the remaining 66% at fixed rates.

Well positioned for decarbonisation of the power sector

The EU has committed to reduce greenhouse gas emissions by at least 40% from 1990 levels (the European Commission has proposed to raise this target to 55%) and to increase the contribution of renewables to energy demand to 32% by 2030, with an aim to reach climate neutrality by 2050. Unregulated utilities, which account for 40% of EU carbon emissions, will need to deliver a significant share of the reduction in carbon emissions, which will create a variety of risks and opportunities for the sector.

EDP is relatively well positioned against risks arising from the carbon emission reduction policy, given the relatively low carbon intensity of its power generation fleet: 157 gCO_2/kWh in 2020. 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.

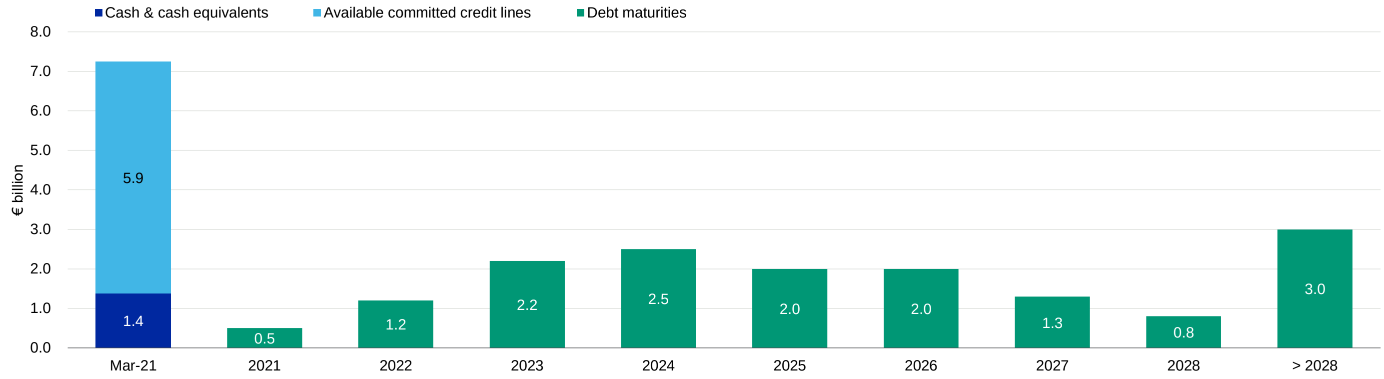
Governance considerations

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.[8]

Liquidity analysis

EDP has sound liquidity, underpinned by cash and cash equivalents of €1.4 billion; a total of €5.9 billion undrawn revolving credit facilities, including notably a €3.3 billion revolving credit facility maturing in October 2024 and a €2.2 billion revolving credit facility maturing in March 2025; short-term credit facilities of €256 million; and €75 million of committed commercial paper with guaranteed placement as of March 2021. Combined with operating cash flow and the proceeds from the €1.5 billion EDPR capital increase completed in April 2021, these are available to cover expected average annual net investments of around €2.5-3.0 billion; debt maturities (see Exhibit 12 below); and annual dividend payments including minorities of around €0.9 billion.

Exhibit 12
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 in January 2021 of a €750 million green hybrid bond. The company has also been able to securitise regulatory receivables, reflecting good interest from investors.

Structural considerations

EDP Finance B.V. is the group's main issuer under the €13.5 billion euro medium-term note programme which benefits from a keep well agreement with EDP. EDP is the issuer of a €750 million bond due 2027 and of the group's €2.5 billion hybrid securities.

As of 31 March 2021, 22% of the group's gross debt was raised at the subsidiary level, reflecting the existence of significant minority shareholders at EDPR, EDB and the electricity distribution business in Spain. The structural subordination of bondholders at the holding company level is nevertheless mitigated by the existence of intercompany loans from EDP to EDPR.

Exhibit 13
EDP's debt structure as of 31 March 2021

In € million	Gross debt	Gross debt in %	Cash	Net debt	Net debt in %
EDP SA and EDP Finance BV	12,190	78%	550	11,640	82%
EDPR	866	6%	293	573	4%
EDP Brasil	1,450	9%	441	1,009	7%
EDP Espanha	1,136	7%	95	1,041	7%
Total	**15,642**	**100%**	**1,379**	**14,263**	**100%**

Source: Company reports

Methodology and scorecard

EDP is rated in accordance with our rating methodology for Unregulated Utilities and Power Companies, published in May 2017. EDP's Baa3 rating is two notches lower than the forward-looking scorecard-indicated outcome of Baa1, reflecting the comparison with peers, including ENEL (Baa1 stable), Iberdrola (Baa1 stable), Naturgy (Baa2 stable) and Orsted (Baa1 stable), among other.

Exhibit 14
Rating factors
EDP - Energias de Portugal, S.A.

Unregulated Utilities and Unregulated Power Companies Industry [1][2]	Current FY 12/31/2020		Moody's 12-18 Month Forward View As of May 2021 [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	Ba	Ba
e) Business Mix Impact on Cash Flow Predictability	A	A	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)	4.4x	Baa	4x - 6x	Baa
b) (CFO Pre-W/C) / Net Debt (3 Year Avg)	15.0%	Ba	16% - 19%	Ba
c) RCF / Net Debt (3 Year Avg)	9.4%	Ba	10% - 13%	Ba
Rating:				
a) Scorecard-Indicated Outcome		Baa2		Baa1
b) Actual Rating Assigned				Baa3

[1] All ratios are based on 'Adjusted' financial data and incorporate Moody's Global Standard Adjustments for Non-Financial Corporations.
[2] As of 12/31/2020.
[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 15

Category	Moody's Rating
EDP - ENERGIAS DE PORTUGAL, S.A.	
Outlook	Positive
Issuer Rating	Baa3
Senior Unsecured -Dom Curr	Baa3
Jr Subordinate -Dom Curr	Ba2
Commercial Paper -Dom Curr	P-3
EDP FINANCE B.V.	
Outlook	Positive
Bkd Senior Unsecured	Baa3
Bkd Commercial Paper -Dom Curr	P-3
EDP - ENERGIAS DO BRASIL S.A.	
Outlook	Stable
Corporate Family Rating -Dom Curr	Ba2
Senior Unsecured -Dom Curr	Ba2
NSR Corporate Family Rating	Aa2.br
NSR Senior Unsecured	Aa2.br
EDP ESPIRITO SANTO DISTRIBUICAO DE ENERGIA SA	
Outlook	Stable
Corporate Family Rating	Ba2
Senior Unsecured -Dom Curr	Ba2
NSR Corporate Family Rating	Aa1.br
NSR Senior Unsecured	Aa1.br
EDP SAO PAULO DISTRIBUICAO DE ENERGIA S.A.	
Outlook	Stable
Corporate Family Rating	Ba2
Senior Unsecured -Dom Curr	Ba2
NSR Corporate Family Rating	Aa1.br
NSR Senior Unsecured	Aa1.br
LAJEADO ENERGIA S.A.	
Outlook	Stable
Issuer Rating -Dom Curr	Ba2
NSR LT Issuer Rating	Aa2.br

Source: Moody's Investors Service

Appendix

Exhibit 16

Peer comparison

EDP - Energias de Portugal, S.A.

	EDP - Energias de Portugal, S.A. Baa3 Positive			Iberdrola S.A. (P)Baa1 Stable			Endesa S.A. Baa1 Stable			Naturgy Energy Group SA Baa2 Stable		
(in EUR million)	FYE Dec-18	FYE Dec-19	FYE Dec-20	FYE Dec-18	FYE Dec-19	FYE Dec-20	FYE Dec-18	FYE Dec-19	FYE Dec-20	FYE Dec-18	FYE Dec-19	FYE Dec-20
Revenue	15,278	14,333	12,448	35,076	36,438	33,145	19,555	19,258	16,644	24,339	20,761	15,345
EBITDA	2,781	3,176	2,828	9,230	9,569	9,556	3,612	3,709	3,746	3,793	4,259	3,328
Total Assets	42,353	42,179	42,876	114,245	122,146	122,369	31,835	31,972	32,062	41,459	41,138	39,545
Total Debt	17,447	17,399	17,595	41,339	43,959	44,204	7,735	8,365	8,571	18,749	19,217	20,421
Net Debt	15,534	15,856	14,666	38,537	41,846	40,777	7,491	8,142	8,168	17,033	16,532	16,109
FFO / Net Debt	13.6%	14.8%	16.6%	18.5%	18.5%	19.6%	41.2%	41.8%	41.3%	19.3%	20.8%	16.2%
RCF / Net Debt	7.9%	9.3%	11.0%	13.2%	14.0%	11.4%	21.5%	23.1%	22.0%	7.9%	9.5%	5.2%
(FFO + Interest Expense) / Interest Expense	3.9x	4.2x	5.1x	5.7x	6.3x	7.3x	16.0x	17.8x	18.2x	6.1x	6.6x	5.7x
Debt / Book Capitalization	56.6%	56.6%	55.3%	44.3%	44.4%	45.0%	42.8%	48.4%	50.2%	54.1%	55.5%	62.6%

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 17
Adjusted net debt calculation
EDP - Energias de Portugal, S.A.

(in EUR million)	FYE Dec-16	FYE Dec-17	FYE Dec-18	FYE Dec-19	FYE Dec-20
As Reported Total Debt	18,027	16,918	16,085	17,409	17,342
Pensions	815	763	759	631	630
Leases	844	928	842	0	0
Hybrid Securities	(370)	(370)	(370)	(867)	(869)
Non-Standard Public Adjustments	1,621	3	130	226	492
Moody's Adjusted Total Debt	20,937	18,242	17,447	17,399	17,595
Cash & Cash Equivalents	(1,452)	(2,344)	(1,913)	(1,543)	(2,929)
Moody's Adjusted Net Debt	19,485	15,898	15,534	15,856	14,666

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 18
Adjusted EBITDA breakdown
EDP - Energias de Portugal, S.A.

(in EUR million)	FYE Dec-16	FYE Dec-17	FYE Dec-18	FYE Dec-19	FYE Dec-20
As Reported EBITDA	3,793	4,013	3,230	3,727	3,774
Unusual Items - Income Statement	(27)	(581)	(211)	(207)	(625)
Pensions	13	17	18	9	37
Leases	124	129	95	0	0
Non-Standard Public Adjustments	22	(237)	(196)	(207)	(202)
Interest Expense - Discounting	(71)	(162)	(154)	(146)	(156)
Moody's Adjusted EBITDA	3,853	3,179	2,781	3,176	2,828

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

Select historical adjusted financial data

EDP - Energias de Portugal, S.A.

(in EUR million)	FYE Dec-16	FYE Dec-17	FYE Dec-18	FYE Dec-19	FYE Dec-20
INCOME STATEMENT					
Revenue	14,595	15,746	15,278	14,333	12,448
EBITDA	3,853	3,179	2,781	3,176	2,828
EBIT	2,266	1,662	1,352	1,741	1,409
Interest Expense	993	760	723	735	591
Net income	941	898	445	630	503
BALANCE SHEET					
Net Property Plant and Equipment	24,980	23,658	23,549	20,457	21,123
Total Assets	44,870	42,860	42,353	42,179	42,876
Total Debt	20,937	18,242	17,447	17,399	17,595
Cash & Cash Equivalents	1,452	2,344	1,913	1,543	2,929
Net Debt	19,485	15,898	15,534	15,856	14,666
Total Liabilities	35,556	33,306	33,475	33,096	32,972
CASH FLOW					
Funds from Operations (FFO)	2,311	2,212	2,111	2,346	2,440
Cash Flow From Operations (CFO)	3,414	1,675	2,485	1,755	1,813
Dividends	868	851	878	868	832
Retained Cash Flow (RCF)	1,443	1,361	1,233	1,478	1,608
Capital Expenditures	(2,119)	(2,013)	(1,761)	(2,338)	(2,380)
Free Cash Flow (FCF)	427	(1,189)	(154)	(1,451)	(1,398)
INTEREST COVERAGE					
(FFO + Interest Expense) / Interest Expense	3.3x	3.9x	3.9x	4.2x	5.1x
LEVERAGE					
FFO / Debt	11.0%	12.1%	12.1%	13.5%	13.9%
RCF / Debt	6.9%	7.5%	7.1%	8.5%	9.1%
Debt / EBITDA	5.4x	5.7x	6.3x	5.5x	6.2x
Net Debt / EBITDA	5.1x	5.0x	5.6x	5.0x	5.2x

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

Issuer comment

» EDP - Energias de Portugal, S.A.: EDPR's capital increase strengthens financial profile, but will reduce EDP's ownership in its largest subsidiary, 5 March 2021

Industry outlook

» Unregulated electric and gas utilities – EMEA: 2021 outlook stable as utilities remain resilient to the coronavirus pandemic, 17 November 2020

Sector in-depth / Sector comment

» Unregulated Electric & Gas Utilities – Spain: Proposed profit clawback on nuclear and hydro is credit negative, impact modest, 4 June 2021

» Unregulated electric utilities – Europe: Carbon prices rise sharply, but credit impact limited, 8 March 2021

» Europe's electricity markets: In Iberia, the decarbonisation of the power sector is accelerating, 14 October 2020

» Europe's electricity markets: In Europe, the energy transition is accelerating, 19 October 2020

Endnotes

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

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

3 See Power Companies – Brazil: 2021 outlook stable on evolving market dynamics, 10 December 2020.

4 See Regulated Electricity Distribution Companies – Brazil: 2021 outlook stable despite lower-than-anticipated demand, 10 December 2020.

5 See Government of Portugal: Recovery and resilience plan will boost growth but reforms will determine longer-term gains, 4 May 2021.

6 See ETD ABS – Spain and Portugal: Electricity systems' continued low debt loads are credit positive, 22 April 2021.

7 Offshore wind will be developed by Ocean Winds, the dedicated joint venture between EDPR and ENGIE SA (Baa1 stable).

8 Since then, both entities have been party to a strategic partnership agreement, investing in worldwide renewable generation projects. Under this partnership, CTG agreed to invest up to €2 billion through the acquisition of minority investments from EDP and co-investments in renewable projects, with around €1.6 billion of divestments concluded so far. CTG also provided access to funding through its relationships with Chinese banks, which made available up to €2 billion in liquidity in August 2012, of which EDP drew down €1 billion, which it fully repaid in 2016.

REPORT NUMBER 1283296

CLIENT SERVICES

Americas	1-212-553-1653
Asia Pacific	852-3551-3077
Japan	81-3-5408-4100
EMEA	44-20-7772-5454

Moody's
INVESTORS SERVICE