

Rating object	Rating information	
EDP – Energias de Portugal S.A. Creditreform ID: FNR0000053944 Incorporation: 1976 Based in: Lisbon, Portugal Main (Industry): Electricity and gas CEO: Miguel Stilwell d'Andrade <u>Rating objects:</u> Long-term Corporate Issuer Rating: EDP – Energias de Portugal S.A. Long-term Corporate Issuer Rating: EDP Finance B.V. Long-term Local Currency (LT LC) Senior Unsecured Issues EDP – Energias de Portugal S.A. Long-term Local Currency (LT LC) Senior Unsecured Issues EDP Finance B.V.	Corporate Issuer Rating: BBB / stable	Type: Initial rating Unsolicited Public rating
	LT LC Senior Unsecured Issues,; BBB / stable	Other: n.r.
	Rating date: 28 March 2022 Monitoring until: withdrawal of the rating Rating methodology: CRA “Corporate Ratings” CRA “Non-Financial Corporate Issue Ratings” CRA “Rating Criteria and Definitions” Rating history: www.creditreform-rating.de	

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Summary

Company

EDP – Energias de Portugal S.A. (hereinafter referred to as EDP or the Company) is a Portuguese multinational, vertical integrated utility company founded in 1976 and headquartered in Lisbon, Portugal. It is active in the sectors of power electricity generation, transmission, distribution and supply, as well as in gas supply. It counts as the largest utility and most valuable company in Portugal. EDP has a presence in 28 markets across Europe, North America, Latin America and Asia-Pacific, with 378,155 km of distribution network, 162 km of transmission network and 1,252 km under construction and an installed capacity of 25 GW. Already, 75% of energy generation comes from renewable energy sources, enabling EDP to be one of the world’s largest renewable energy producer. To accelerate the energy transition, the Company has set itself the ambitious goal to be coal-free by 2025 and carbon neutral by 2030. EDP plans to invest EUR 24 billion between 2021 and 2025 of which the largest part will be allocated to renewable energies as announced in its strategic plan.

In 2021 the Company, with its 12,236 employees, generated revenues of EUR 14,983 million (2020: EUR 12.448 million) and an EAT of EUR 1,105 million (2020: EUR 1,161 million).

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Rating result

The rating of **BBB** attests EDP - Energias de Portugal S.A. a highly satisfactory level of creditworthiness, representing a low to medium default risk. The main positive factors contributing to the rating are the EDP’s solid financial profile in combination with its asset rotation strategy, its high degree of regulated revenues, its geographically diversified asset and concession base, and its diversified income and cash generation. Another positive rating driver is the high degree of CO₂-neutral energy the Group already produces, generating around 75% of electricity through renewables resources, thus reducing the need for investment in the restructuring of its generation capacity towards different energy sources in the future, a business model in line with the energy transition. Regulatory risks stemming from regulated EBITDA in the Group’s Renewables and Network business divisions, exposure to adverse weather conditions (wind and water resources), its activities in Brazil, exposure to market price and volume risk, and its high investment requirements in the coming years in regard of its 2021-2025 investment plan, have a dampening effect on the rating.

Outlook

The one-year outlook of the rating is **stable**. Due to the high investment requirements, we do not expect a significant improvement of the metrics in the short-term. The outlook is also constrained by the currently high degree of uncertainty with regard to rising power prices in connection with the Ukraine-Russia conflict, which could affect the European economy and directly impact EDP's performance.

Reference:

The relevant rating factors (key drivers) mentioned in this section, are predominantly based on internal analyses, evaluations of the rating process, the derived valuations of the analysts participating in the rating and, if applicable, other rating committee members. The fundamental external sources used, are specified in the section "Regulatory requirements" and "Rules on the presentation of credit ratings and rating outlooks".

Excerpts from the financial key figures analysis 2020:

- + Revenue decrease
- + Improvement of ratio of interest expenses to total debt
- + Equity ratio
- EBITDA and EBIT decrease
- Net total debt / EBITDA

General rating factors summarize the key issues that – according to the analysts as per the date of the rating – have a significant or long-term impact on the rating, whether positive (+) or negative (-).

Relevant rating factors

Table 1: Financials | Source: EDP – Energias de Portugal S.A. Annual Report 2021, standardized by CRA

EDP – Energias de Portugal S.A. Selected key figures of the financial statement analysis Basis: Annual accounts and report of 31.12. (IFRS, etc.)	CRA standardized figures ¹	
	2020	2021
Sales (million EUR)	12,448	14.983
EBITDA (million EUR)	3,786	3,498
EBIT (million EUR)	2,142	1,749
EAT (million EUR)	1,161	1,105
EAT after transfer (million EUR)	801	657
Total assets (million EUR)	40,901	49,076
Equity ratio (%)	31.21	31.29
Capital lock-up period (days)	58.79	58.29
Short-term capital lock-up (%)	39.32	57.40
Net total debt / EBITDA adj. (Factor)	7.78	10.21
Ratio of interest expenses to total debt (%)	2.96	2.22
Return on investment (%)	4.47	3.24

General rating factors

- + National leader in its strategic business areas
- + One of the world's largest renewable energy producer
- + Diversified geographical asset and concession base
- + Lower sensitivity to economic cycles and high entry barriers
- + Sound financial profile and good access to financial markets
- + High share of stable cash flows from regulated and contracted operating activities
- + Largely sustainable product portfolio
- Capital-intensive business with high investment requirements
- Exposure to market price risks
- Exposure to currency fluctuations
- High weather-dependency (sun, water and wind resources)
- Regulatory and country risks

¹ For analytical purposes, CRA adjusted the original values in the financial statements in the context of its financial ratio analysis. For example, when calculating the analytical equity ratio, deferred tax assets, goodwill (entirely or partly), and internally generated intangible assets are subtracted from the original equity, whilst deferred tax liabilities are added. Net total debt considers all balance sheet liabilities. Therefore, the key financial figures shown often deviate from the original values of the company.

Current rating factors are the key factors that, in addition to the underlying rating factors, have an impact on the current rating.

Prospective rating factors are factors and possible events which – according to the analysts as of the date of the rating – would most likely have a stabilizing or positive effect (+) or a weakening or negative effect (-) on future ratings, if they occurred. This is not an exhaustive list of possible future events with potential relevance for future ratings. Circumstances can arise that are not included in the list of prospective factors whose effects are impossible to assess at the time of the rating, either because these effects are uncertain or because the underlying events are deemed unlikely to occur.

ESG factors are factors related to environment, social issues and, governance. For more information, please see the "Regulatory requirements". CRA generally takes ESG relevant factors into account, when assessing the rating object and discloses them when they have a significant influence on the creditworthiness of the rating object, leading to a change in the rating result or the outlook.

Current rating factors

- + Significant growth in Networks partly also due to Iberian expansion
- + Good net results despite adverse negative market conditions
- + Slight organic growth of overall operating performance
- + Launch of a prospective strategic plan, driving acceleration of sustainable growth
- + Increase of globalization and reshape of business model
- + Stable financial risk profile due to conservative credit measures (asset rotation proceeds, capital increase, hybrid issuance)

- Surge in energy prices and unfavorable currency developments causing decreased profitability
- Operating performance suffered due to deconsolidation effects and weaker wind performance
- High dividend payouts reducing financial potential
- High investment requirements
- Volatile market conditions

Prospective rating factors

- + Capacity extension of renewable energies with focus on developed countries
- + Growth due to asset development and modernization
- + Improved financial metrics after completion of the investment plan 2021-2025
- + Further reduction in CO2 emissions

- Energy volatility risks, affecting profitability
- Rising commodity prices significantly affecting Europe's economy
- Legislative change risks, adversely impacting financial situation
- General uncertainty regarding economic and geopolitical risks
- Investment and integration risks associated with acquisitions

ESG-factors

CRA generally considers ESG factors (environment, social and governance) within its rating decisions. In the case of EDP-Energias de Portugal S.A., we have not identified any ESG factors with significant influence.

In 2021, around 75% of EDP's electricity generation stemmed from renewable resources (hydro-power, solar and wind energy). This high share of renewables in the Group's generation portfolio led to a CO2 intensity of 176g/kWh (Scope 1 and 2), below the European average of 231 g/kWh. The Company also fares well in our peer comparison. Both its total CO2 emissions and its relative CO2 emissions (in relation to sales) are lower than most peer companies of our rating portfolio.

The energy sector in Europe as a whole is facing a comprehensive transition linked to EU targets of achieving climate neutrality by 2050, which can result in substantial risk for individual companies. As EDP's share of energy generation from renewable resources is very high, and as the Group aims to be coal-free by 2025, reaching a CO2 intensity of around 100g/kWh, as well as carbon neutral by 2030 (Scope 1 and 2), thus accelerating the energy transition, we do not see EDP's business model as being at risk with regard to the energy transition. Nevertheless, the implementation of these goals requires significant investment, which dampens the rating, since

these investments could lead to a higher leverage. However, EDP points out, that it plans to meet the investments through its asset rotation strategy, which is aimed to crystalize value of a project by selling and reinvesting the proceeds in other projects, enabling growth and mitigating leverage pressure. EDP plans to invest EUR 24 billion between 2021 and 2025 of which the largest part will be allocated to renewable energies (as announced in its strategic plan). In recent years, around 75% of the Company's capex was invested into renewable energies. Also, the current regulatory and financial framework conditions for companies providing renewable energy and investing in this sector can be considered favorable. In 2021, the Company issued three hybrid green bonds amounting to EUR 2.0 billion.

EDP ranked as the world's most sustainable electric utility in the Dow Jones Sustainability Index in 2021. The Company is also well-positioned in terms of the S- and G-factors, showing a strongly integrated ESG-Culture partly due to its ESG-linked management compensation and the promotion of gender diversity; 40% of the seats on EDP's Executive Board of Directors are occupied by female members.

Best-case scenario: BBB

In our best-case scenario for one year, we assume a rating of BBB. We believe that an upgrade within the period of a year is unlikely due to the investment requirements in connection with the Group's strategic plan, which dampen potential improvement on credit metrics in the short-term as investments in combination with its dividend policy continue to exceed cash-flow generation.

Worst-case scenario: BBB-

In the worst-case scenario for one year, we assume a rating of BBB-. In this scenario, we assume a deterioration of the macroeconomic environment, particularly in Europe, due to rising commodity prices, weakening EDP's earnings due to lower results on non-regulated business or adverse regulative adaptations. A significant increase in debt, e.g. in connection with higher capital expenditure, deteriorating the net total debt to EBITDA adj., could also have a negative impact on the rating.

Please note:

The scenarios are based on information available at the time of the rating. Within the forecast horizon, circumstances may occur that could lead to a change of the rating out of the indicated range.

Business development and outlook

Table 2: The development of business of EDP - Energias de Portugal S.A. | Source: Annual Reports 2019, 2020 and Annual Report 2021, standardized by CRA

EDP – Energias de Portugal S.A.				
In million EUR	2018	2019	2020	2021
Sales	15,278	14,333	12,448	14,983
EBITDA	2,958	3,541	3,786	3,498
EBIT	1,491	1,749	2,142	1,749
EBT	976	1,125	1,470	1,366
EAT	876	899	1,161	1,105

In 2021, despite challenging macroeconomic conditions, in particular due to volatile energy prices, EDP generated revenues of EUR 14,983 million (2020: EUR 12,448 million), an adjusted EBITDA of 3,498 million (2020: EUR 3,786 million), and an EAT of EUR 1,105 million (2020: EUR 1,161 million).

Despite the significant increase in revenues, the adjusted EBITDA recorded a decline of 7.6% compared to 2020, largely due to a negative impact of asset disposals in 2020 (EUR 341 million) and weaker energy management performance due to the energy price surge, showing a decrease of EUR -352 Million compared to 2020. The negative effects were partly mitigated in particular by the growth through the Viesgo acquisition, regulated revenues increase in Brazil and asset rotation gains. Excluding non-recurring effects, the reported EBITDA increased by 6.6%. Higher amortizations mainly in connection with the acquisition of Viesgo affected adjusted EBIT, decreasing by 18.3% compared to 2020. However, with a decrease of 4.9%, the Company recorded a still satisfactory net income, benefitting from a better financial result and lower taxes compared to 2020.

Table 3: Reported EBITDA share and development of reported corporate divisions | Source: EDP – Energias S.A. Annual Report 2021

EUR million	2020	2021	Share %	Δ %
Renewables	2,613	2,294	61.6	-12.2
Networks	910	1,327	35.6	+45.8
Client Solutions and Energy Management	474	122	3.3	-74.3
Other Segments and adjustments and inter-segments eliminations	-46	-20	-0,5	--
Total	3,950	3,723	100	--

The business segment Renewables is the largest contributor to the Group's EBITDA, with EUR 2,294 million (2020: EUR 2,613 million). In 2021 it recorded a reported a decline of EUR -319 million (-12.2%) compared to 2020. The decline was largely a result of non-recurring gains in 2020; gains though the sale of six hydro plants in Portugal (EUR 216 million), contribution from the same plants (EUR 117 million) as well as gain booked on GSF legal settlement in Brazil (EUR 66 million). Weaker hydro performance, negative currency effects of the Brazilian real against the euroland deconsolidation effects also contributed to the decline. The decline was partly mitigated by higher wind and solar installed capacity (+ 9% compared to 2020) and asset rotation gains (EUR 97 million).

Networks amounted to an EBITDA of EUR 1,327 million (2020: EUR 910 million), showing EBITDA growth of EUR 417 million (+45.8%) compared to 2020, which reflects its stabilizing portfolio function. In particular, the increase was due to the incorporation of Viesgo in Spain, causing a positive Effect of EUR 182 million and an increase of EUR 157 million in Brazil, partly due to asset rotation gains of EUR 46 million, stronger demand and higher remuneration after adjustments of regulated tariffs. The increase was also result of a better operating performance in Portugal (+EUR 54 million) compared to 2020 due to OPEX savings related to acceleration of digitalization.

Client Solutions and Energy management recorded an EBITDA of EUR 122 million (2020: EUR 474 million), which is a decrease of around EUR 352 million (-74.3%) compared to 2020. While in 2020 energy management benefited from environmental conditions, a steep surge in energy prices in 2021 adversely affected wholesale markets as result of higher production and sourcing costs and a negative impact on hedging contracts.

Net cash flows from operations amounted to roughly EUR 2,596 million (2020: EUR 2,889 million). Excluding net gains with asset rotations, net cash flows from operating activities amounted to roughly EUR 2,020 million (2020: EUR 2,455 million); although lower than 2020, this demonstrates the good performance of the Company.

Based on its asset rotation strategy of renewable asset rotation and disposals of non-strategic assets, EDP generated proceeds of EUR 1,356 million (EUR 1,678 million), helping to achieve financial potential for organic growth. Gross investments, which include CAPEX and financial investments, amounted to EUR 3,907 million (2020: EUR 3,715 million). EDP invested EUR 2.9 billion in new wind and solar capacity, predominantly in North America and Europe, comprising roughly 74.2% of gross investments. Maintenance CAPEX amounted to EUR 570 million. EDP also invested in network expansion, modernization and quality improvement, mainly in Brazil.

EDP's most recent acquisition is the takeover of a 91% stake of Sunseap in Singapore, which was completed at the end of February 2022. The implied Enterprise Value paid for 100% of the Transaction was EUR 0.9 billion. Sunseap is the largest distributed solar player in South-East Asia, with an electricity generation capacity of 10 gigawatts, accounting for 1/5 of EDP Renewables' (EDPR) target to provide 50 GW capacity generation in 2030. The transaction allows EDPR to establish its presence in Asia Pacific. Through its subsidiary, EDP plans to invest around USD 7.4 billion in renewables in the Asia Pacific region until 2030.

EDP has announced its strategic plan for the period of 2021 - 2025, planning to invest EUR 24 billion chiefly in renewables, but also in its other segments, with the objective of generating an additional 20 GW in installed capacity by 2025. In 2021, the Group already invested EUR 3.2 billion, reaching an additional 2.6 GW of installed capacity. The plan also commits EDP to be coal free by 2025 and carbon neutral (scope 1 and 2 emissions) by 2030. EDP plans in part to finance the investments with fundings generated by the Company's asset rotation strategy as well as through operating improvement. EDP aims to create greater asset value based on smarter grids, with investments of approx. EUR 3 billion by 2025. In order to increase efficiency, the Group will also focus on expanding digitalization, with investments here amounting to EUR 2 billion. The Company also aims to achieve an increase of around 27% within four years by means of accelerated and focused growth, and to reach a reported EBITDA of EUR 4.7 billion in 2025. Although this strategy was set before the current environment characterized by strong uncertainty emerged, the Company previously faced a challenging environment and demonstrated the resilience of its business model.

Overall, EDP has developed very positively over the course of the last two years. The Group generated organic growth based on stronger operational performance, but also inorganic growth, in particular due to the incorporation of Viesgo S.A., which triggered significant growth

in its low risk business segment Networks. Despite the deterioration in its results for 2021, EDP recorded a satisfactory net income and presented a new strategic plan in line with its sustainable and solid strategy. We believe this plan to be ambitious, but nevertheless necessary in the context of the energy transition.

Structural risk

EDP – Energia de Portugal S.A. is a Portuguese multinational utility company founded in 1976 and headquartered in Lisbon. It is Portugal's largest electricity generator, distributor and supplier. The Company is listed on Euronext Lisbon and on 27 other stock exchanges. In addition, its public shares are traded in seven over-the-counter markets. Around 49.1% of its shares are in free float and the remaining shares are distributed among several institutions with China Three Gorges being the largest shareholder, holding 19.2% of the share capital.

The Company reports its financial statements in accordance with IFRS and employed 12.236 people at year end 2021.

EDP - Energias de Portugal S.A. is the Parent Company of the Group, acting as a holding company as the Group's operations are conducted through numerous subsidiaries directly or indirectly owned by EDP, and through stakes in joint ventures. The governance structure distinguishes management and supervision functions. The Group's governing body is the Executive Board of Directors, which manages EDP's business. As of 31 December 2021, the Board of Directors consisted of five directors. The General and Supervisory Board represents the main supervisory body, which supervises, monitors and advises the Executive Board of Directors. It consists of 16 members, represented by nine independent members with relevant expertise, and by some of its key shareholders. The General and Supervisory Board relies on the work of five specialized committees: the Corporate Governance and Sustainability Committee, the Financial Matters Committee/Audit Committee, the remuneration Committee, and the United States of America (USA) Business Affairs Monitoring Committee. In addition, the Statutory Auditor also acts as a supervision body.

The business is organized into three segments: Renewables, Networks, and Client Solutions & Energy Management. Renewables comprises hydro, wind and solar generation in almost all of the Company's geographical markets. The business segment Networks comprises electricity distribution on the Iberian Peninsula and in Brazil, as well as its transmission business in Brazil. The Client Solutions and Energy Management segment comprises services provided to customers, energy trading, and supply and generation from non-renewable sources in the Iberian and Brazilian markets. This segment also includes the regulated last resort supply activity.

As of the end of December 2021, the Company has a presence in 28 markets within Europe, North and South America, and the Asia-Pacific region. The most important market, with a revenue share of 46.2% is Portugal, which has an unsolicited Rating of **BBB / stable** (10-09-2021). The second is Spain, with a revenue share of 26.4%. Brazil's share accounts for 20.0% of the Group's total revenues, representing EDP's third most important market. With regard to country risks, we consider Brazil's macroeconomic environment as uncertain. EDP Brazil is ring fenced to the rest of the Group, however EDP's Brazil operating performance has an impact on the Group results, affecting our rating key figures.

Even though EDP does not operate in Russia or Ukraine, adverse consequences could still follow for the Company from the Ukraine-Russia conflict, if the European economy were to suffer significant setbacks affecting its two key markets, Portugal and Spain. Moreover, despite the Group's advantage of risk diversification (geographically, as well as operationally), it requires a

high degree of organization and entails risks associated with local legal, political, cultural and social particularities, as well as risks related to access to resources. We assume that the Group's structure supports the implementation and monitoring of its strategy in accordance with the specific legislation and regulatory frameworks in the countries in which the Group operates.

Based on publicly available information, we assume sufficiently developed structures with regard to risk management, accounting, and controlling, as well as other administrative and operational areas. Noteworthy are risks related to the Company's acquisitions, including financing risks and risks related to the integration of acquired companies or projects into the Group. The size of the Company and its global presence—despite the complexity and certain country risks—are advantages in our view, facilitating good access to financial markets and enabling the establishment of state-of-the-art technology. In overall, we do not see any core risks in connection with the Company's structure.

Business risk

EDP's business covers the entire vertically integrated value chain of electricity, which includes electricity generation, transmission, distribution and supply. To a lesser extent, EDP is also active in the supply of gas. Supply includes sale and purchase of electricity and gas in wholesale markets, retailing of electricity and gas, as well as related activities, mainly in the energy sector. As distribution system operator and electricity supplier, EDP operates in Portugal, Spain and Brazil, which represent its key markets. In 2021 the distribution network amounted to 378,155 km (2020: 374,641 km), 50% of which were provided with smart meters, +8 p.p. compared to 2020. In Brazil, EDP is also active as a transmission system operator with an operating network of 162 km and a network of 1,252 km under construction. The regions USA and Asia Pacific are gaining in strategic importance as markets for renewable generation. In 2021, EDP had approximately 25 GW installed capacity at its disposal, generating 61 TWh. With renewable generation plants in almost all of the countries where EDP is present, it generated 75% of 61 TWh and 80% of the installed capacity, mostly through wind power (47%) and hydroelectric energy (29%), whereby solar energy (3%) is gaining more importance, especially in the Asia Pacific region. Its fully consolidated subsidiary EDP Renewables is listed as the world's fourth-largest renewable energy producer. In non-renewable sources, EDP mainly uses combined cycle gas (12%) and coal (8%), as well as nuclear and cogeneration to a very small extent (1%). Conventional power generation plants are located in its key markets to guarantee the power supply.

Renewables are exposed to resource volatility, which could affect earnings due to low volumes; as in 2021, when weaker performance in wind generation impacted the Group's earnings. As regards 2022, there is a risk of hydro generation levels being impacted as result of the prolonged drought in Brazil in 2021. In general, EDP mitigates this risk through geographical and asset diversification. Most of the Group's wind power is generated in North America (57%), followed by Europe (32%) and Brazil (4%). Hydroelectricity generation takes place in Iberia (around 70%) and in Brazil (around 30%). Solar energy stems mainly from Europe and North America. At the end of 2021, the Company had a presence in 28 countries, whilst in 2020 it was 19 countries, with the aim of achieving increased growth and diversification in renewable resources.

The Company has set itself the ambitious goal of having exclusively coal-free revenues by 2025 and achieving carbon neutrality by 2030, thus accelerating the energy transition. With this, the Company would make a significant contribution toward achieving the EU's climate targets (Paris Agreement). As a result, we do not see any risks for the Company with regard to the energy transition in the long term. However, implementation of the above requires high investments

which are associated with realization and financing risks linked to risks of bad investments in connection with M&A's and higher leverage potential.

Each year, EDP engages in merger and acquisition activities with object of generating growth in renewables in line with a balanced low-risk platform, which function as business stabilizer. To counter financing risks, EDP is reshaping its business model with a strategy of renewable assets rotation, with the aim of accelerating organic growth and crystallizing value. With divestments in merchant activities, which are exposed to the highest volatility risk of EDP's portfolio and other non-strategic assets, EDP balances its risk profile on one hand, while on the other it creates financial strength. In addition, stable investment ratios were used to maintain the balance between the growth and portfolio stabilizer segment. In 2021, 75% of the Group's CAPEX was used for Renewables (2020: 74%) and 22% for Networks (2020: 22%) and 3% for Client Solutions and Energy Management (2020: 4%).

The Networks business is regulated by regulatory bodies, which determine the tariffs for the distribution and transmission of energy and gas. The duration and conditions of all regulatory arrangements differ per country. A new regulatory period begins in 2022 in Portugal, valid until 2025. The Portuguese Electricity Regulator ("ERSE") has set new tariffs at a higher rate of return for the distribution of electricity. The rate of return (RoR) of 4.7% before taxes based on the 10 year Portuguese government bond yield implies a slight increase in regulated gross profit of EUR 15 million to EUR 1,029 million for 2022. The steep surge in electricity and gas prices may result in further regulatory changes to prevent social and economic crises. The majority of electricity from renewable sources is sold through long-term contracts (PPA's – Power Purchase Agreements) in which volumes and prices are agreed upon for longer periods of time, thereby reducing market price and volume risk. The regulated and contracted activities allow the Company to generate a large share of stable and predictable cash flows. In 2021, Renewables generated an EBITDA contribution of 61%, with Networks contributing 36% to the Group's EBITDA.

In contrast, the Group's deregulated business is more heavily exposed to general market conditions (volume and price risks) and commodity risks (coal, nuclear fuel etc.). Volatile price developments on the electricity markets represent a particular risk factor in the Company's business model. EDP has therefore hedged a substantial share of its own power generation for 2022 on the forward market. Prices on the Portuguese and Spanish spot markets for electricity have risen at record rates, so special attention must be paid to the future development of prices and their economic impact on EDP. According to news sources, possible reforms in the electricity market are currently being discussed in the European Council in order to limit the negative impact of rising electricity prices in wholesale markets on companies and households.

Overall, we assess EDP's business risk profile as low to moderate; the main reason for this is its high proportion of EBITDA generated through regulated business activities and through long term contracts in renewables, which significantly reduces the Company's exposure to general market risks. EDP's EBITDA is also well-diversified, both geographically and by its activities. The Company is well-positioned in its energy mix, with a large share of renewable resources along with a commitment to further expand these, thus securing its competitiveness and sustainability. Risks may arise for the Company based on the development of new renewables or on regulatory changes affecting financials and earnings. In particular, the current price situation in the energy market could put pressure on earnings; however, in light of EDP's track record and risk management, we consider these risks to be manageable.

Financial risk

For the purposes of its financial ratio analysis, Creditreform Rating AG ("CRA") adjusted the original values in the financial statements. The following representations and calculations are based predominantly on these adjustments.

In 2021, the Company demonstrated a satisfactory financing structure as well as a suitable financing policy. The year was characterized by strengthening of its financial base, in particular by way of a capital increase a capital increase of EDP's subsidiary EDP Renováveis S.A. and the proceeds of asset rotation transactions.

CRA calculated an adjusted equity of EUR 15,355 million for 2021 (2020: EUR 12,767 million), resulting in a satisfactory equity ratio of 31.3% (2020: 31.2%). This significant increase in equity resulted mainly from the issuance in 2021 of three subordinated non-callable green hybrid bonds with maturities of more than five years, for an amount of EUR 2 billion (nominal value) which we have allocated to equity at 50% due to its credit characteristics, and through a capital increase of EDP's subsidiary EDP Renováveis S.A.

The capital increase, the hybrid issuance and asset rotation transactions also supported the Company in increasing its sources of funding as investing activities exceeded operating cash flow. Cash and cash equivalents rose from EUR 2,954 Million in 2020 to EUR 3,222 Million 2021, a rise of 9.1%.

While adjusted equity increased by 20.3%, the equity ratio remained relatively stable due to an increase in debt. Analytical total debt amounted to roughly EUR 33,721 million in 2021 (2020: EUR 28,135 million), representing a rise of 19.8%, mainly due to an increase in other liabilities as well as the financial debt increase through the hybrid issuance. The current other liabilities (which includes trade payables and other liabilities from commercial activities as well as other liabilities from commercial activities) rose by around EUR 4,552 million compared to 2020 mainly as a result of an increase of tariff adjustments in regard to regulated activities, liabilities from commercial activities and derivative financial instruments, mostly offset by outstanding other receivables (which includes debtors and other assets from commercial activities as well as other debtors and other assets) (+ EUR 4,342 million). Tariff adjustments represent the difference between the amounts invoiced by the regulated bodies (tariff regime) and the regulated revenues calculated based on actual costs. The Company recovers tariff adjustments or other deficits of distribution services through the tariff charged to its customers in the subsequent period. In addition, the Company is per law entitled to transfer the right to receive the tariff adjustments including related interest expenses to third parties.

In addition to equity, the Company is largely financed by non-current liabilities, accounting on an adjusted base for 40.9% of the structural balance sheet total. EDP has financed itself mainly through long-term bond issues in euros, Brazilian real, US dollars and Great British pounds. As of 31 December 2021, non-convertible bond loans accounted for around 65.3% of total financial liabilities. Most of the bonds are part of the Euro Medium Term Note (EMTN) program, with a maximum total amount of up to EUR 13.5 billion, of which EUR 8.7 billion (nominal value) have currently been placed. The second major source of debt financing are hybrid bonds, which accounted for 11.0% excluding the share we have added to shareholders' equity, followed by bank loans at 7.4%.

The Company is capital intensive: approximately 59.7% (2020: 69.4%) of the balance sheet total is tied up in long-term assets, reflecting the specific conditions of the business and emphasizing the importance and high levels of investment required for the acquisition, development and maintenance of energy plants and networks. The lower fixed intensity in 2021 in comparison

with 2020 is due to the increase in working capital. EDP's fixed assets are largely offset by the non-current character of most of its obligations. In 2020, the asset coverage ratio amounted to 62.7% and, taking the medium-term financial liabilities into account, full coverage was achieved, reflecting a well-balanced finance structure.

CRA's adjusted ratio of net total debt / EBITDA adjusted rose from 7.8 in 2020 to 10.2 in 2021, partly burdened by lower adjusted EBITDA but mostly by the rise in other liabilities. The value of this rating-relevant indicator is therefore very high due to the nature of the business. Excluding other liabilities, the ratio amounts to 7.7, which we consider still as high, adversely affecting the rating. However, the Company was able to reduce net financial debt by 5.5%, amounting to EUR 11,565 million (2020: EUR 12,243 million), mainly due to EDPR's capital increase of EUR 1.5 billion, the hybrid issuance with EUR 1.0 billion, as well as earnings through asset rotation of around EUR 1.4 billion. It remains to be seen how the relevant key figure net total debt / EBITDA adj. will continue to develop due to the current volatile market conditions and after completion of the investment plan, which is willing to increase EBITDA by around EUR 1 billion, maintaining its financial strength.

Dividends paid to shareholders for 2021 amounted to EUR 750 million (2020: EUR 691 million), resulting in a pay-out ratio of around 64.6% (2020: 59.1%), is in our opinion relatively high. Considering the sufficient equity ratio it is indeed manageable, but limits EDP's financial potential, especially against the backdrop of upcoming investments.

The Company has an adequate liquidity position, taking into consideration its liquidity reserves as well as its strong and largely stable operating cash flows based on regulated activities. At the end of 2021, liquidity—including undrawn committed credit facilities—amounted to around EUR 9,017 million, and operating cash flows amounted to EUR 2,595 million (2020: EUR 2,889 million). Operating cash flows were 10.2% lower in 2021 compared to 2020, which in particular can be explained by the worsened performance in energy management. In 2022, higher energy prices could also have a negative impact on liquidity.

Overall, we do not see any significantly elevated short- or medium-term financial risks, taking into consideration EDP's good access to financial markets, its generally satisfactory liquidity and largely stable cash flows in line with its well-coordinated and favourable corporate investment plans, despite its high investment requirements. The Company has an adequate capital structure with diversified financing resources at its disposal that should allow EDP to pursue its strategic plan. Nevertheless, a significant deterioration of EDP's finance base due to more severe market conditions could have a negative effect on the rating.

Issue rating

Further issuer ratings

In addition to the rating of EDP – Energias de Portugal S.A. the following issuer and its issues (see below), have been rated.

- EDP Finance B.V.

Due to the corporate, strategic, liability, financial, economic and performance-related interdependency of the aforementioned subsidiary (which is direct 100% subsidiary of EDP – Energias de Portugal S.A. and which have been consolidated into the Group annual accounts) we derive the unsolicited issuer rating of EDP Finance B.V. from the unsolicited issuer rating of EDP – Energias de Portugal S.A. and set it equal to its rating of **BBB / stable**.

Issue rating details

The rating objects of this issue rating are exclusively the long-term senior unsecured issues, denominated in euro, issued by EDP – Energias de Portugal S.A. and EDP Finance B.V., and which are included in the list of ECB-eligible marketable assets. The ECB list of eligible marketable assets can be found on the website of the ECB. The notes have been issued within the framework of the Programme for the Issuance of Debt Instruments (the Programme), of which the latest base prospectus dates from 13 September 2021. This Programme amounts to EUR 13.5 billion. EDP – Energias de Portugal S.A. is not the guarantor, however EDP Finance B.V. has the benefit of a Keep Well Agreement executed by English Law EDP – Energias de Portugal S.A. The Keep Well Agreement is not a guarantee by EDP – Energias de Portugal S.A., but in an event of default, the trustee will be entitled, on behalf of the Holders, to enforce EDP Finance B.V.'s rights under the Keep Well Agreement against EDP – Energias de Portugal S.A., in accordance with the terms of the Trust Deed. Both parties have entered into a trust deed in 2001 relating to the Programme for the Issuance of Debt Instruments. The notes under the Programme are senior unsecured, and rank at least pari passu among themselves and with all other present and future unsecured obligations of the issuer. Additionally, the notes benefit from a negative pledge provision and a cross default mechanism.

We have assigned the long-term senior unsecured issues issued by EDP – Energias de Portugal S.A. and EDP Finance B.V. a rating of **BBB / stable**. The rating is based on the unsolicited corporate rating of EDP – Energias de Portugal S.A. and EDP Finance B.V. For the issue ratings, we have applied our rating methodology for corporate issues. Other types of debt instruments or issues denominated in other currencies of the issuer have not been rated by CRA. For a list of all currently valid ratings and additional information, please consult the website of Creditreform Rating AG.

Overview

Table 4: Overview of CRA Ratings | Source: CRA

Rating Category	Details	
	Date	Rating
EDP – Energias de Portugal S.A. (Issuer)	28.03.2022	BBB / stable
EDP Finance B.V. (Issuer)	28.03.2022	BBB / stable
Long-term Local Currency (LC) Senior Unsecured Issues	28.03.2022	BBB / stable
Other	--	n.r.

Table 5: Overview of 2021 Programme for the Issuance of Debt Instruments | Source: Base Prospectus dated 13.09.2021

Overview of 2022 Programme for the Issuance of Debt Instruments			
Volume	EUR 13,500,000,000	Maturity	Depending on respective bond
Issuer	EDP Finance B.V. (Issuer) EDP – Energias de Portugal S.A. (Issuer)	Coupon	Depending on respective bond
Trustee	Deutsche Trustee Company Limited	Currency	Depending on respective bond
Arranger	MORGAN STANLEY	Currency	Depending on respective bond
Credit enhancement	none	ISIN	Depending on respective bond

All future LT LC senior unsecured Notes issued by EDP – Energias de Portugal S.A. and EDP Finance B.V., which have similar conditions to the current Programme for the Issuance of Debt Instruments, denominated in Euro and included in the list of ECB-eligible marketable assets will, until further notice, receive the same ratings as the current LT LC senior unsecured Notes issued under the Programme for the Issuance of Debt Instruments. Notes issued under the programme in any currency other than euro, or other types of debt instruments, have not yet been rated by CRA. For a list of all currently valid ratings and additional information, please consult the website of Creditreform Rating AG. For the time being, other emission classes or programmes (such as the Commercial Paper Programme) and issues that do not denominate in euro will not be assessed.

Financial ratio analysis

Table 6: Financial key ratios |Source: Annual Reports 2019, 2020 and Annual Report 2021 structured by CRA

Asset structure	2018	2019	2020	2021
Fixed asset intensity (%)	75.17	67.56	70.32	60.69
Asset turnover	0.39	0.36	0.31	0.34
Asset coverage ratio (%)	50.34	53.66	54.82	64.23
Liquid funds to total assets	4.56	3.84	7.22	6.57
Capital structure				
Equity ratio (%)	31.64	29.90	31.21	31.29
Short-term debt ratio (%)	23.40	24.91	21.04	24.99
Long-term debt ratio (%)	6.20	6.35	7.34	7.69
Capital lock-up period (in days)	47.61	54.01	58.79	58.29
Trade-accounts payable ratio (%)	5.04	5.28	4.90	4.88
Short-term capital lock-up (%)	34.70	42.70	39.32	57.40
Gearing	2.02	2.22	1.97	1.99
Leverage	3.18	3.25	3.27	3.20
Financial stability				
Cash flow margin (%)	14.68	15.88	17.05	13.16
Cash flow ROI (%)	5.72	5.72	5.25	4.06
Total debt / EBITDA adj.	9.49	8.43	8.70	11.29
Net total debt / EBITDA adj.	8.85	7.97	7.78	10.21
ROCE (%)	5.19	5.83	6.15	4.34
Profitability				
Gross profit margin (%)	34.28	7.33	42.09	33.40
EBIT interest coverage	1.52	1.73	2.57	2.33
EBITDA interest coverage	2.99	3.48	4.52	4.64
Ratio of personnel costs to total costs (%)	5.12	5.21	6.47	5.52
Ratio of material costs to total costs (%)	66.03	63.01	58.40	66.97
Cost income ratio (%)	91.47	89.29	85.35	90.20
Ratio of interest expenses to total debt (%)	3.63	3.59	2.96	2.22
Return on investment (%)	3.55	3.93	4.47	3.24
Return on equity (%)	7.08	7.33	9.37	7.86
Net profit margin (%)	5.68	6.22	9.22	7.29
Operating margin (%)	9.67	12.09	17.01	11.54
Liquidity				
Cash ratio (%)	19.48	15.41	34.33	26.27
Quick ratio (%)	68.19	79.47	90.67	114.31
Current ratio (%)	106.15	130.23	141.07	157.27

Appendix

Rating history

The rating history is available under <https://www.creditreform-rating.de/en/ratings/published-ratings.html>.

Table 7: Corporate Issuer Rating of EDP – Energias de Portugal S.A.

Event	Rating created	Publication date	Monitoring until	Result
Initial rating	28.03.2022	www.creditreform-rating.de	Withdrawal of the rating	BBB / stable

Table 8: Corporate Issuer Rating of EDP Finance B.V.

Event	Rating created	Publication date	Monitoring until	Result
Initial rating	28.03.2022	www.creditreform-rating.de	Withdrawal of the rating	BBB / stable

Table 9: LT LC Senior Unsecured Issues issued by EDP – Energias de Portugal S.A.

Event	Rating created	Publication date	Monitoring until	Result
Initial rating	28.03.2022	www.creditreform-rating.de	Withdrawal of the rating	BBB / stable

Table 10: LT LC Senior Unsecured Issues issued by EDP Finance B.V.

Event	Rating created	Publication date	Monitoring until	Result
Initial rating	28.03.2022	www.creditreform-rating.de	Withdrawal of the rating	BBB / stable

Regulatory requirements

The rating² was not endorsed by Creditreform Rating AG (Article 4 (3) of the CRA-Regulation).

The present rating is, in the regulatory sense, an unsolicited rating, that is public. The analysis was carried out on a voluntary basis by Creditreform Rating AG, which was not commissioned by the Issuer or any other third party to prepare the present rating.

The rating is based on the analysis of published information and on internal evaluation methods for the assessment of companies and issues. The rating object was informed of the intention of creating or updating an unsolicited rating before the rating was determined.

² In these regulatory requirements the term "rating" is used in relation to all ratings issued by Creditreform Rating AG in connection to this report. This may concern several companies and their various issues.

The rating object participated in the creation of the rating as follows:

Unsolicited Corporate Issuer / Issue Rating	
With rated entity or related third party participation	Yes
With access to internal documents	No
With access to management	No

The rating was conducted based on the following information.

List of documents
Accounting and controlling
<ul style="list-style-type: none"> ▪ Annual Report 2021 ▪ Annual Reports 2020, 2019
Finance
<ul style="list-style-type: none"> ▪ EDP - Strategic Update 2021-25 ▪ Base Prospectus Programme for the Issuance of Debt Instruments 13-09-2021
Additional documents
<ul style="list-style-type: none"> ▪ ESG Report 2021 ▪ Press and Website

A management meeting did not take place within the framework of the rating process.

The documents and information gathered were sufficient to meet the requirements of Creditreform Rating AG's rating methodologies.

The rating was conducted based on the following rating methodologies and the basic document.

Rating methodology	Version number	Date
Corporate Ratings	2.3	29.05.2019
Non-financial Corporate Issue Ratings	1.0	October 2016
Rating Criteria and Definitions	1.3	January 2018

The documents contain a description of the rating categories and a definition of default.

The rating was carried out by the following analysts:

Name	Function	Mail-Address
Christina Sauerwein	Lead-analyst	C.Sauerwein@creditreform-rating.de
Esra Bartel	Analyst	E.Bartel@creditreform-rating.de

The rating was approved by the following person (person approving credit ratings, PAC):

Name	Function	Mail-Address
Philip Michaelis	PAC	P.Michaelis@creditreform-rating.de

On 28 March 2022, the analysts presented the rating to the rating committee and the rating was determined. The rating result was communicated to the company on 29 March 2022. There has not been a subsequent change to the rating.

The rating will be monitored until Creditreform Rating AG withdraws the rating. The rating can be adjusted as part of the monitoring, if crucial assessment parameters change.

In 2011, Creditreform Rating AG was registered within the European Union according to EU Regulation 1060/2009 (CRA-Regulation). Based on this registration, Creditreform Rating AG is allowed to issue credit ratings within the EU and is bound to comply with the provisions of the CRA-Regulation.

ESG-factors

You can find out whether ESG factors were relevant to the rating in the upper section of this rating report "Relevant rating factors".

A general valid description for Creditreform Rating AG, as well as a valid description of corporate ratings for understanding and assessing ESG factors in the context of the credit rating process, can be found [here](#).

Conflict of interests

No conflicts of interest were identified during the rating process that might influence the analyses and judgements of the rating analysts involved or any other natural person whose services are placed at the disposal or under the control of Creditreform Rating AG and who are directly involved in credit rating activities or in approving credit ratings and rating outlooks.

In the event of providing ancillary services to the rated entity, Creditreform Rating AG will disclose all ancillary services in the credit rating report.

Rules on the presentation of credit ratings and rating outlooks

The approval of credit ratings and rating outlooks follows our internal policies and procedures. In line with our "Rating Committee Policy", all credit ratings and rating outlooks are approved by a rating committee based on the principle of unanimity.

To prepare this credit rating, Creditreform Rating AG has used following substantially material sources:

Corporate issuer rating:

1. Annual report
2. Website
3. Internet research

Corporate issue rating:

1. Corporate issuer rating incl. information used for the corporate issuer rating
2. Documents on issues / instruments

There are no other attributes and limitations of the credit rating or rating outlook other than those displayed on the Creditreform Rating AG website. Furthermore, Creditreform Rating AG considers as satisfactory the quality and extent of information available on the rated entity. With respect to the rated entity, Creditreform Rating AG regarded available historical data as sufficient.

Between the time of disclosure of the credit rating to the rated entity and the public disclosure, no amendments were made to the credit rating.

The Basic Data Information Card indicates the principal methodology or version of methodology that was used in determining the rating, with a reference to its comprehensive description.

In cases where the credit rating is based on more than one methodology or where reference only to the principal methodology might cause investors to overlook other important aspects of the credit rating, including any significant adjustments and deviations, Creditreform Rating AG explains this fact in the credit rating report and indicates how the different methodologies or other aspects are taken into account in the credit rating. This information is integrated in the credit rating report.

The meaning of each rating category, the definition of default or recovery and any appropriate risk warning, including a sensitivity analysis of the relevant key rating assumptions such as mathematical or correlation assumptions, accompanied by worst-case scenario credit ratings and best-case scenario credit ratings are explained.

The date at which the credit rating was initially released for distribution and the date when it was last updated, including any rating outlooks, is indicated clearly and prominently in the Basic Data Information Card as a “rating action”; initial release is indicated as “initial rating”, other updates are indicated as an “update”, “upgrade” or “downgrade”, “not rated”, “confirmed”, “selective default” or “default”.

In the case of a rating outlook, the time horizon is provided during which a change in the credit rating is expected. This information is available within the Basic Data Information Card.

In accordance with Article 11 (2) EU-Regulation (EC) No 1060/2009, a registered or certified credit rating agency shall make available, in a central repository established by ESMA, information on its historical performance data including the rating transition frequency and information about credit ratings issued in the past and on their changes. Requested data are available at the [ESMA website](#).

An explanatory statement of the meaning of Creditreform Rating AG’s default rates are available in the credit rating methodologies disclosed on the website.

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