CREDIT OPINION
13 January 2023

Update

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RATINGS

PGE Polska Grupa Energetyczna S.A.

Domicile	Warsaw, Poland
Long Term Rating	Baa1
Type	LT Issuer Rating - Fgn Curr
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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PGE Polska Grupa Energetyczna S.A.

Update to credit analysis

Summary

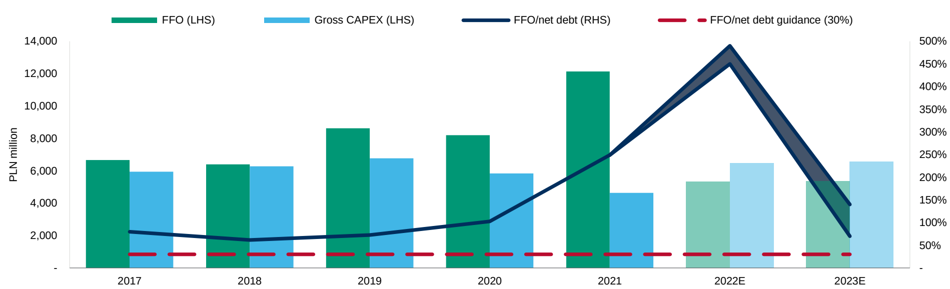
PGE Polska Grupa Energetyczna S.A.'s (PGE) credit profile reflects the company's leading position as the largest utility group in Poland (A2 stable); its strategy to focus on renewables and network operations, following the planned spinoff of its conventional coal and lignite assets; and its low leverage.

These factors are balanced by the uncertainties surrounding the implementation of the Polish government's plan to take over PGE's coal and lignite assets; challenges to short-term earnings from the energy retail price caps in Poland; the group's high exposure to commodity price volatility; and the company's substantial capital spending programme, which absorbs its operating cash flow and carries some execution risk.

PGE's Baa1 rating incorporates a one-notch uplift for the potential extraordinary support from its 60.86% owner, the Government of Poland, in case of financial distress.

Exhibit 1

PGE's credit metrics will weaken as a result of large investments and implementation of price caps in the Polish market, but are likely to remain well above the rating guidance



[1] Financial metrics incorporate Moody's Global Standard Adjustments for Non-Financial Corporations.
[2] Estimates represent Moody's forward view, not the view of the issuer, and unless noted in the text, do not incorporate significant acquisitions and divestitures.
Source: Company and Moody's Investors Service

Credit strengths

» Largest energy group in Poland, and market leader in power generation, district heating and electricity supply

» Solid earnings visibility because of regulated power distribution and district heating activities, which account for around 35% of EBITDA

» Strategic commitment to exit coal and lignite generation and mining activities in favour of expanding low-carbon renewable capacity and regulated network operations

» Low financial leverage

» Our expectation of strong support from the Polish government, given its 60.86% ownership

Credit challenges

» Uncertainty about the timing and conditions of exit from conventional power generation assets, which keeps PGE exposed to carbon transition risk

» Some near-term pressure on EBITDA and cash flows affecting generation segment as the Polish government introduces energy retail price caps

» Large capital spending programme, including offshore wind projects, which will lead to weaker financial metrics and entails execution risks

» Breadth and complexity of initiatives underpinning the strategic shift to a low-carbon business profile in a quickly evolving operational environment, which will be a challenge for managerial resources

Rating outlook

The stable rating outlook reflects our expectation that the Polish government will take measures to protect PGE against the risks arising from its currently high carbon exposure. Moreover, the outlook reflects our expectations that PGE will — in spite of the introduction of energy retail price caps — maintain solid leverage metrics, expressed as funds from operations (FFO)/net debt above 30%.

Factors that could lead to an upgrade

Upward pressure on the ratings is currently not expected in the short to medium term, given the dynamic evolution of the energy market in Poland and the lack of clarity around the final design of the spinoff of the coal assets; and PGE's planned sizeable capital investment programme, which we expect will weaken the company's credit metrics over time.

Factors that could lead to a downgrade

PGE's rating could be downgraded if its FFO/net debt were to decline below 30% or if there were significant adverse changes in the Polish regulatory or market framework. In addition, negative rating pressure could develop if the planned coal asset spinoff failed to take place and was not replaced with other support from the government, keeping PGE significantly exposed to the carbon transition risk from its conventional coal assets. A significant deterioration in the credit quality of the Polish government or a reduction in the support assumptions incorporated into our assessment, or both, would also likely strain PGE's rating.

The ratio guidance is likely to be reviewed once there is more clarity on PGE's credit profile following the potential spinoff of the coal assets or other measures to protect the company from the carbon transition risk.

Key indicators

Exhibit 2

PGE Polska Grupa Energetyczna S.A.

	Dec-17	Dec-18	Dec-19	Dec-20	Dec-21	12-18m fwd look
(CFO Pre-W/C) / Net Debt	79.7%	61.7%	72.6%	102.8%	249.2%	90% - 110%
RCF / Net Debt	79.7%	61.3%	72.6%	102.8%	249.1%	90% - 110%
(FFO + Interest Expense) / Interest Expense	21.4x	19.1x	26.1x	27.7x	51.3x	35x - 40x

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

Profile

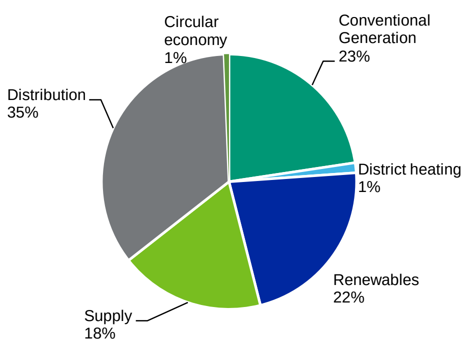
PGE Polska Grupa Energetyczna S.A. (PGE) is a holding company for a vertically integrated energy group which is the largest utility in Poland with an installed generation capacity of around 17.9 gigawatts (GW). Its business activities comprise conventional power generation, mainly from lignite and coal plants; district heating, with heat and power being generated by combined heat and power plants (CHPPs); renewable power generation, mostly onshore wind; the operation of an electricity distribution grid; and the supply of electricity to end customers. PGE also owns two large lignite mines. The group is the domestic market leader in all segments, except in grid operations, in which its distributed volume is second only to that of TAURON Polska Energia S.A.

PGE is 60.86% owned by the Polish government, and the remaining shares are listed on the Warsaw Stock Exchange. As of the beginning of January 2023, PGE had a market capitalisation of around PLN15.6 billion (around €3.3 billion).

Exhibit 3

Earnings mix is diversified with a large share of regulated income from distribution

EBITDA split for the 12 months that ended September 2022

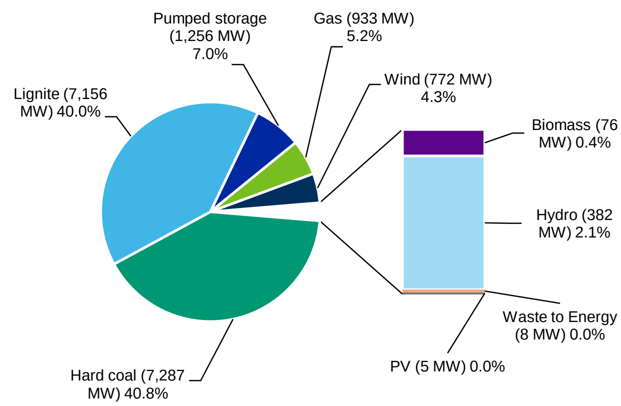


EBITDA here is recurring EBITDA as reported by the company (for definition see endnote).
Sources: Company and Moody's Investors Service

Exhibit 4

Installed power generation capacity by fuel in megawatts (MW)

As of 30 September 2022



Hydro includes natural water flow capacity (287 MW) of pumped storage plants.
Source: Company and Moody's Investors Service

Detailed credit considerations

The Polish government's plans for a coal spinoff underpin PGE's strategy to migrate to a low-carbon business mix, but uncertainties around implementation remain

Given the rising pressure from tighter European Union (EU) decarbonisation targets for 2030 (see the "ESG considerations" section) and the vulnerability of coal plants in Poland to carbon prices and stricter environmental regulations, the Polish government on 16 April 2021[1] presented a road map for nationalising coal and lignite generation and lignite mining assets (together the "coal assets") of the domestic utilities that have a state ownership stake, as is the case for PGE.

On March 1, 2022, the Council of Ministers adopted a resolution to carve out coal-based generation assets from companies with a State Treasury shareholding. The carve-out process will follow the formula of purchase by the State Treasury from PGE S.A., Energa, ENEA S.A. and TAURON Polska Energia S.A. of all assets connected to generation of energy in power plants fuelled by hard coal and lignite, including the accompanying service companies. Given the inseparability of lignite-fuelled energy complexes, lignite mines will also be among the assets acquired. The sale of assets to NABE (a new state-owned entity created to hold these assets) is likely to be completed by the end of the first quarter of 2023.

A completion of the transfer of the coal assets (coal spinoff) could occur in Q1 2023 and may require approval from the European Commission related to social support schemes for workers linked to the transaction, which adds to the topics to be resolved, such as the valuation of these assets, the treatment of the associated liabilities and obligations or the compensation paid to PGE, if any. There is also a possibility that the transfer does not materialise, for example, because of demands by the EU to significantly modify or abandon the scheme.

Should the coal spinoff fail, it is likely that the company will obtain some form of support from the Polish State, which is likely to remain the majority shareholder after the spinoff, so that PGE can implement its transition to a low-carbon business mix as planned in its corporate strategy as of October 2020 (for details, see our Issuer Comment). The transition is predicated on PGE's access to debt funding to finance its necessary strategic investments, and the retention of the coal assets may well deter investors, which would be credit negative. Conversely, the complete disposal of the coal assets without significant legacy obligations would be credit positive for PGE because exposure to carbon prices and stricter environmental regulations would be reduced substantially.

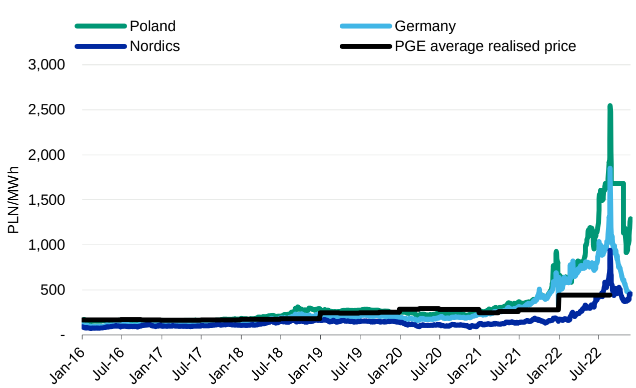
Earnings pressure on conventional power generation is likely to continue, mitigated by capacity payment income

In the first nine months of 2022, PGE's output from lignite increased by 9%, while output from coal plants decreased by 27% in the conventional generation segment to reach 41.1 terawatt hours (TWh). However, the recurring EBITDA[2] declined by 44% year over year to PLN970 million for the same period. This decline was mainly due to the negative impact on generation margin because of rising CO_2 costs and coal prices, which could only partially be offset by increase in power prices. The forward price for carbon allowances is more than €80/tonne, while current baseload power forward prices are at around PLN940/megawatt hour (MWh) for delivery in 2024 (Base price of Q3 23 contract is at approx PLN750/ MWh). Polish coal prices are fairly comparable to international levels, which currently trade at around $170/tonne (ARA prices).

Exhibit 5

PGE's realised power prices follow market prices with a time lag because of hedging

One-year baseload forward prices and PGE's realised wholesale prices

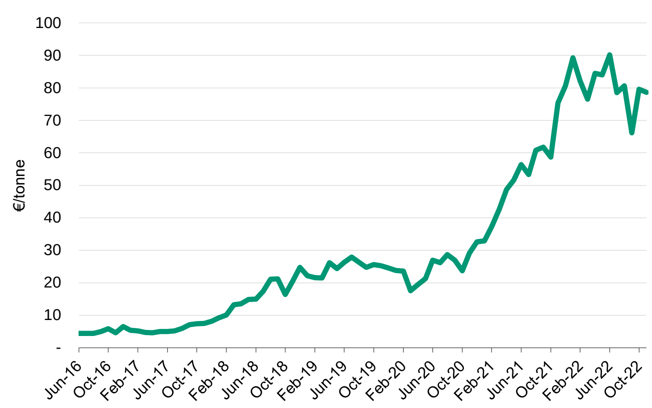


Sources: Company, Polish Power Exchange and FactSet

Exhibit 6

Carbon price development is a key driver of wholesale power prices

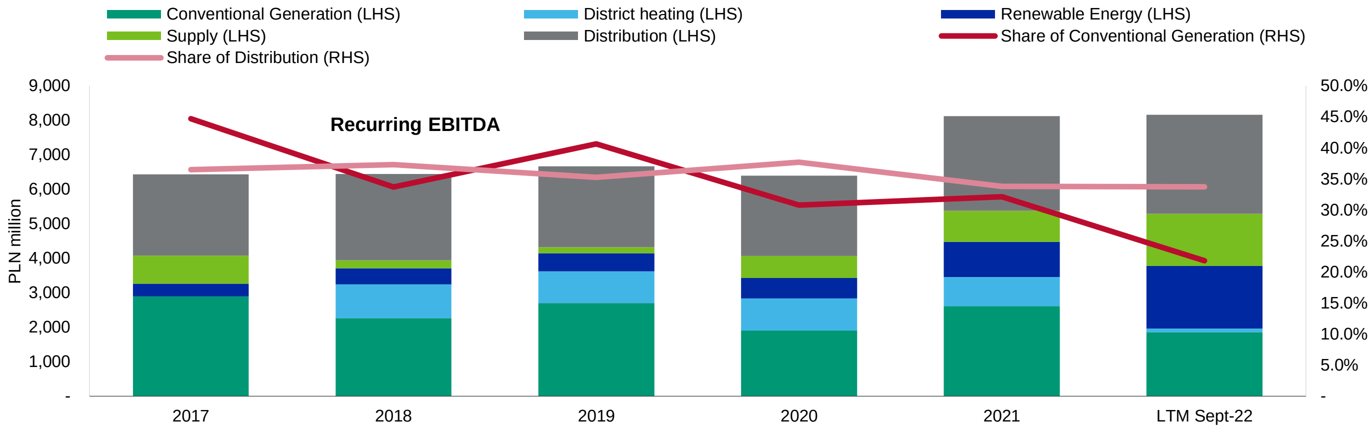
Carbon price (spot) of exchange-traded certificates in €/tonne



Sources: FactSet and Moody's Investors Service

We estimate the annual contribution of capacity payments to this segment's EBITDA at around PLN2 billion through 2025. However, these payments will only cover a large share of fixed costs without altering the plants' competitiveness in the merit order. Given these negative prospects for coal-fired power generation in Poland, the envisaged coal spinoff is credit positive for PGE, although it would initially reduce the group's EBITDA over the next few years.

Exhibit 7
Distribution infrastructure is the primary contributor to recurring EBITDA



The district heating segment was reported as a separate business segment from 2019. It was previously included in the conventional generation segment.
Source: Company and Moody's Investors Service

At the end of October 2022, PGE announced it had signed a letter of intent regarding the potential construction of a new nuclear plant in Poland. The letter of intent was signed with Korea Hydro-Nuclear Power Co. Ltd. and ZE PAK S.A. Additional nuclear capacity and increased focus on renewables are in the Polish energy system forecasted to represent an increasing share of installed capacity as coal is phased out over time.

Price freeze on electricity will strain EBITDA and cash flows in 2023

The Polish government has introduced various measures addressing affordability following the steep increases in energy costs throughout 2022. For example, a price freeze on electricity has been introduced for households, small to medium-sized enterprises, and some public sector entities. Under the price cap, which came into force on November 4, 2022, a maximum price of PLN693/MWh (households) and PLN785/MWh (small businesses and some social entities) has now been put in place. In addition, for households the price is frozen for 2023 on average 2022 level (ca. 412 PLN/MWh) up to the limit (2, 2.6 or 3 MWh/a year). Above that limit, the price will be capped at PLN693/ MWh. According to the law, suppliers of electricity will be entitled to compensation. The compensation will come from a fund into which the electricity generators will have to contribute. As of now, there continues to be a degree of uncertainty as to what the financial impact will be for PGE's supply and power generation segment. Having said that, financial pressure on PGE's supply segment should be broadly neutralized thanks to compensations. The financial burden will largely fall on generators that will have to cover the compensation. At the same time, they also stand to benefit from higher power prices more broadly. On balance, however, we expect the price freeze to strain the company's EBITDA and cash flow in 2023. In addition, further negative impact could arise from clawbacks or windfall taxes. For example, Poland has introduced 100% tax on revenues above 345 PLN/MWh for wind projects under the green certificate scheme This risk is, however, mitigated by the company's overall low financial leverage. As of the end of September 2022, PGE's reported net leverage (expressed as net debt/EBITDA) was -0.18x.

New capacity will increase renewables' earnings contribution, with subsidies contributing to cash flow stability

While PGE's current renewables (RES) capacity of around 1.16 GW, excluding around 1.26 GW from pumped storage plants, is moderate compared with its conventional generation, the segment contributed PLN1,401 million to EBITDA (21% of total) over the first nine months of 2022. This contribution was substantially higher than that in the same period in 2021 because of the significantly higher electricity prices on the spot market and higher margin of pumped-storage plants (PSP) on the balancing and wholesale market. At 772 MW capacity, wind onshore is currently the dominant technology in PGE's RES portfolio but, despite an additional 1 GW capacity planned by 2030, it is likely to be surpassed by the end of the decade by solar installations (+3 GW from currently nearly none) and wind offshore. The company targets at least 6.5 GW of offshore wind capacity by 2040. Currently, PGE is implementing investments in the Baltic Sea with a total capacity of around 3.5 GW (including 2.5 GW in a joint venture with the Danish utility Orsted A/S [Orsted, Baa1 stable]).

Additionally, PGE contracted at least 1,197 MW in available capacities for 2027 in the concluded capacity market auction. The total capacity obligation of 1,197 MW includes 794.6 MW in a 17-year contract, 179.6 MW in seven-year contracts and 223.2 MW in one-year contracts.

The company's wind offshore ambitions are underpinned by the joint-venture agreements between the company and Orsted to design, build and operate Baltica 2 and 3, two offshore wind parks in the Baltic Sea with an aggregate capacity of about 2.5 GW. In April 2021, these projects were awarded bespoke contracts for difference (CfD) by the Polish regulator in the first phase of capacity allocations. In December 2022, PGE obtained final approval from the EC and the regulator granting and indexed strike price of PLN/319.60/ MWh. The CfDs will grant support for 25 years, or 100,000 hours, at full capacity (equal to about 250 TWh) output. The maximum price is PLN319.60/MWh in 2021 prices and is subject to indexation. Offshore wind is an important pillar for the Polish government in its efforts to expand renewables capacity in the country. Its long-term ambitions, as per a new draft law addressing renewables, include a capacity of around 18 GW in two stages of development (5.9GW of individual decisions + offshore wind auctions by 2031).

Planned solar capacity is spread across various small and medium-sized projects, with PGE using existing property to develop around 2 GW, including 600 MW on the grounds of the Belchatow lignite plant. Most new RES installations since July 2016 have to compete in annual pay-as-bid auctions and are remunerated on a CfD basis, while older RES installations, such as most of PGE's existing installations, are subsidised under the legacy green certificate scheme.

While all technologies exhibit output volatility because of weather dependence, PGE's RES growth strategy is credit positive, given the low-carbon nature of these assets and the mitigation of earnings volatility through CfDs, which provide price visibility. In addition, the partnership with Orsted reduces execution risks in offshore wind. Through 2025, we expect RES capacity buildup to be mostly achieved through new medium-sized solar installations and opportunistic investments in existing wind onshore projects, because the development of new wind farms is still hampered by legal restrictions.

Earnings visibility from the supply and trading segment is low

PGE's electricity volumes sold under the supply segment, which includes wholesale trading and hedging operations, and sales to end customers, amounted to 25.7 TWh in the first nine months of 2022, down 8% year over year. Although sales were declining, the supply segment benefited from much higher margins, which resulted in a 60% increase in the segment's recurring EBITDA to PLN1,613 million (PLN1,008 million in the previous year). The supply segment also benefited from higher revenue from the services provided to the other segments of the PGE group due to the higher value of traded electricity and introduction of margin charges on CO2 allowances.

The segment's role as a trading hub for electricity, fuels and carbon certificates entails high volatility and low visibility into earnings. This risk is mitigated by PGE's leading position as a retail supplier with more than 5.50 million end customers, which provides a natural hedge for the group's generation. Should the coal spinoff occur as planned, the retail business will become largely dependent on procuring electricity from the wholesale market because PGE's own sources will be limited to electricity from intermittent renewables and also from cogeneration, which is closely correlated to the heating season.

On September 30, 2022, PGE concluded a framework agreement with Polskie Górnictwo Naftowe i Gazownictwo S.A. for the sale of gas fuel, along with individual contracts related to gas supplies for 10 generating units of PGE Group. The estimated value of the individual contracts for the period from October 1, 2022, to December 31, 2025, was about PLN23 billion. The pricing formula is based on gas market price indices.

We do not expect the coal spinoff to induce a significant change in the company's retail supply earnings, because household tariffs are largely regulated and competition in the business retail segment ensures abiding pressure on margins.

Regulated distribution grid fees and district heating tariffs support cash flow stability

PGE owns one of the five main electricity distribution grids in the country, with a regulated asset base (RAB) of PLN19.8 billion in 2023 and covering around 5.64 million customers. Revenue from the electricity distribution activities is underpinned by a regulatory framework that allows for cost and investment recovery, with a weighted average cost of capital (WACC, pretax, nominal) of 4.676% . Additional elements, including a reinvestment premium, increase the actual return on the RAB to 5.781% for 2023 as a new base. Adjusted for additional adjustments to the WACC related to the implementation of indispensable network development projects, actual return on RAB should be at 8.5%.

In the first nine months of 2022, EBITDA amounted to PLN2,147 million, up 6% year over year, or 33% of group earnings before consolidation due to higher tariffs and connection fees, which made up for negative effects of lower volumes, higher balancing cost and personnel costs. In general, the segment regularly contributes 35%-40% to the group's EBITDA and is therefore a source of cash flow stability.

The most recent five-year regulatory period lasted until year-end 2020, but was extended until 2022, as the regulator decided to extend the review of the framework, which could not be completed in 2020 because of the pandemic. No formal new five-year period has been launched, and we expect a further prolongation of the regulatory period into 2023. PGE's segment earnings should benefit from the stability, as we expect the RAB to increase, driven by investments in modernisation of the grid, which normally exceed regulatory depreciation. In 2021, a regulatory account mechanism was introduced, so the company only bears a temporary volume risk under the current revenue cap approach, which is mitigated by annual tariff approvals.

On 28 December, 2022, PGE announced it had reached a preliminary agreement to acquire PKPE Holding sp. z o. o. for an enterprise value (EV) of approximately PLN5.9 billion (€1.3 billion - based on EV, set as of March 31, 2022) from CVC Capital Partners. PKPE Holding engages in distribution, trade and services, however, its electricity distribution segment represented 76% of the entity's PLN724 million in EBITDA in 2021. The company owns and operates electricity distribution grids located along Poland's main railway lines, with main clients consisting of railway network operators. In 2021, it had a RAB of PLN3.05 billion and power lines of approximately 21,500 kilometers. The EV of the transaction consists of approximately PLN1.9 billion purchase price for the equity, and around PLN4.0 billion of existing net debt at PKPE Holding (as at March 31, 2022).

In district heating, PGE is a leading provider in Poland, where the group operates 16 CHPPs, nine of which run on coal and lignite, while the rest run on gas and biomass. The company's strategy maintains the growth ambitions and foresees a gradual change in the fuel mix for current CHPPs away from coal and lignite to gas and biomass, which should lead to cost savings through reduced carbon exposure.

Heat sales and grid tariffs are regulated, although based on a benchmarking approach, which may not always fully reflect actual costs; however, because the plants are CHPPs, they benefit from cogeneration support through output-based price premiums. As these features enhance PGE's cash flow visibility, the growing weight of district heating is credit positive for the group's overall business risk profile.

Heat operations contributed only 1%, or PLN39 million, to recurring EBITDA in the first nine months of 2022, down 95% from the year-earlier period, because of the higher cost of fuel and cost of CO_2, which was only partly transferred to clients in heat tariffs. Earnings from heat sales for CHP plants are characterised by a relative delay in the transfer of costs.

Tariffs for the production of heat from gas in 2022 are set based on a change in the reference price, whereas in Q3 2022, gas prices were already significantly higher than in previous periods. Prices of gas in forward contracts stood at around PLN665.1/MWh (i.e. an increase of 406%).

Financial metrics will weaken as significant capital spending absorbs cash flow; price freeze will strain EBITDA and cash flow over the next 12 months

PGE's financial profile will likely weaken as it implements a substantial capital spending programme. Assuming the coal spinoff happens, we expect annual cash flow, expressed as FFO, within PLN10.0 billion-PLN12.0 billion over the next two to three years, while the group's capital spending could be PLN6 billion-PLN8 billion per year over 2022-24.

Major areas of investment over this period include:

» District heating: Investments to increase the share of low-emission fuels and new low-emission capacity in its heating generation mix and; development of networks in current locations where possible.

» Renewables: Developments in large-scale photovoltaic installations and preparations for offshore wind parks, which should come online in the second half of this decade

» Distribution network: Substantial modernisation investments aimed at improving the quality and security of supply, notably additional spending on grid earthing and smart metering.

PGE's largest new project, with an investment of around PLN4.3 billion, are two 700 MW combined cycle gas turbine units at the Dolna Odra plant in north-western Poland, the main area for onshore wind farms in the country. The plant's carbon emissions would be around 0.35 tonnes/MWh, which supports PGE's plans to reduce its carbon intensity over time. The project's economics are supported by a 17-year capacity contract awarded in the 2019 auction, and commissioning of the plant is likely in December 2023.

While the PLN75 billion investment programme announced in its 2030 strategy will require additional debt funding, PGE is counting on around 25% of the total volume to be covered by national and EU nonrefundable grants, for example, from the EU Modernisation Fund.

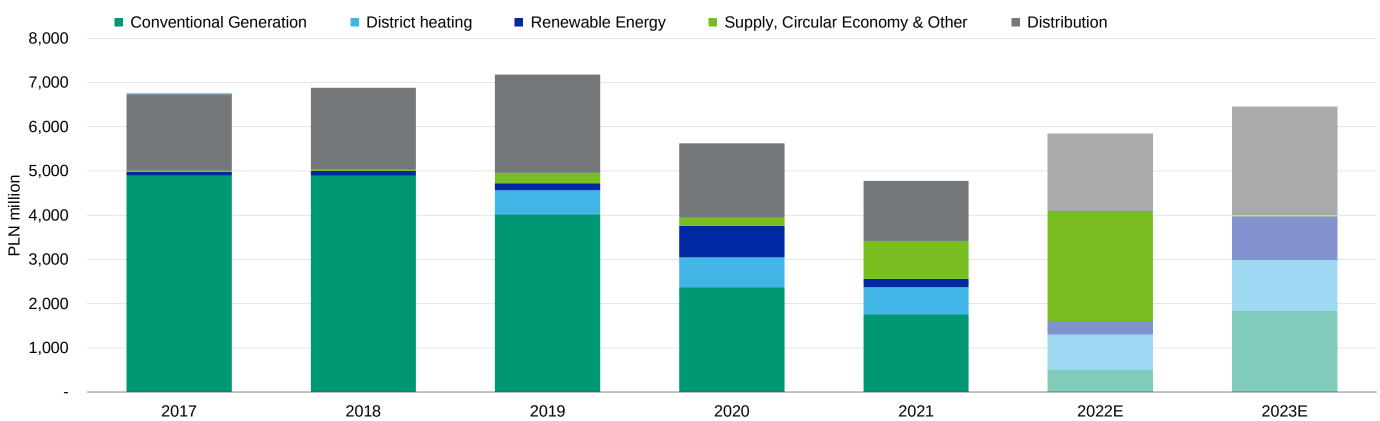
We also expect that the majority shareholder's support, which has demonstrated it by not extracting dividends since 2017, will continue beyond 2022, thus supporting PGE's capacity to fund investments mostly from own cash flow, complemented by grants and committed available credit lines. While PGE's stated dividend policy is to pay out 40%-50% of its consolidated net profit, such distributions are dependent on debt levels and investment plans, which is credit positive given the track record of dividend restraint.

On January 18, 2022, the management board of PGE S.A. adopted a resolution to initiate a capital injection process for the company in connection with planned investment projects in the area of renewable energy, decarbonisation and distribution. As a result, PLN3.2 billion was raised to support the group's investments, a credit positive.

Exhibit 8

PGE's capital spending programme is sizeable

PGE's investment breakdown by segment



The district heating segment was reported as a separate business segment from 2019. It was previously included in the conventional generation segment.

Source: Company and Moody's Investors Service

Expectation of strong support from the Polish government

PGE's Baa1 rating incorporates one notch of uplift from its standalone credit quality, or Baseline Credit Assessment, of baa2. The uplift reflects our expectation of strong support from the Polish government, which owns 60.86% of PGE's shares, for the group in the event of financial distress and a very high level of default dependence (that is, the degree of exposure to common drivers of credit quality). Our estimate of strong support reflects PGE's strategic importance as a provider of essential services and is illustrated by the government's plans to nationalise utilities' coal and mining assets, of which PGE would be the greatest beneficiary.

ESG considerations

PGE Polska Grupa Energetyczna S.A.'s ESG Credit Impact Score is Highly Negative CIS-4

Exhibit 9
ESG Credit Impact Score

CIS-4
Highly Negative

For an issuer scored CIS-4 (Highly Negative), its ESG attributes are overall considered as having a discernible negative impact on the current rating. The negative influence of the overall ESG attributes on the rating is more pronounced compared to an issuer scored CIS-3.

Source: Moody's Investors Service

PGE's ESG Credit Impact Score is highly negative (**CIS-4**), indicating that its ESG attributes have a discernible negative impact on its rating. Its score reflects highly negative environmental risk, moderate social risk as well as low governance risk.

Exhibit 10
ESG Issuer Profile Scores

ENVIRONMENTAL	SOCIAL	GOVERNANCE
E-4	S-3	G-2
Highly Negative	Moderately Negative	Neutral-to-Low

Source: Moody's Investors Service

Environmental

PGE's highly negative environmental risk (**E-4** issuer profile score) primarily reflects the company's generation mix consisting mostly of hard coal and lignite plants which are exposed to stricter carbon emission policies. This risk could be significantly reduced if the government as majority owner were to implement its plan to nationalize PGE's (and some other state utilities') coal and lignite assets. In addition, the group's electricity distribution grid assets are exposed to physical climate risk, such as damage from storms, given that they are mostly above ground. The company also intends to move a growing share of its distribution power lines underground, but progress has been slow.

Social

PGE's moderately negative social risk (**S-3** issuer profile score) reflects risks related to employees' health & safety, mostly through its mining operations, but also risks related to demographic & social trends, which include adverse regulatory decisions or government intervention in regulatory affairs. While the infrastructure regulation of the distribution grid operations has been relatively consistent and largely credit supportive, the government has shown instances of intervention in the regulated household supply segment, leading to inadequate cost recovery and remuneration of retail suppliers, of which PGE is the largest in Poland.

Governance

PGE's neutral/low governance risk (**G-2** issuer profile score) reflects our view of PGE's track record of a solid financial profile and a conservative financial policy, underpinned by low dividend demands from the majority shareholder. PGE, however, displays a lack of continuity of the management board composition over time, reflecting weak independence. This reflects in turn that the company's key function is to implement the state's energy policy, which limits the discretionary leeway for the management.

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.

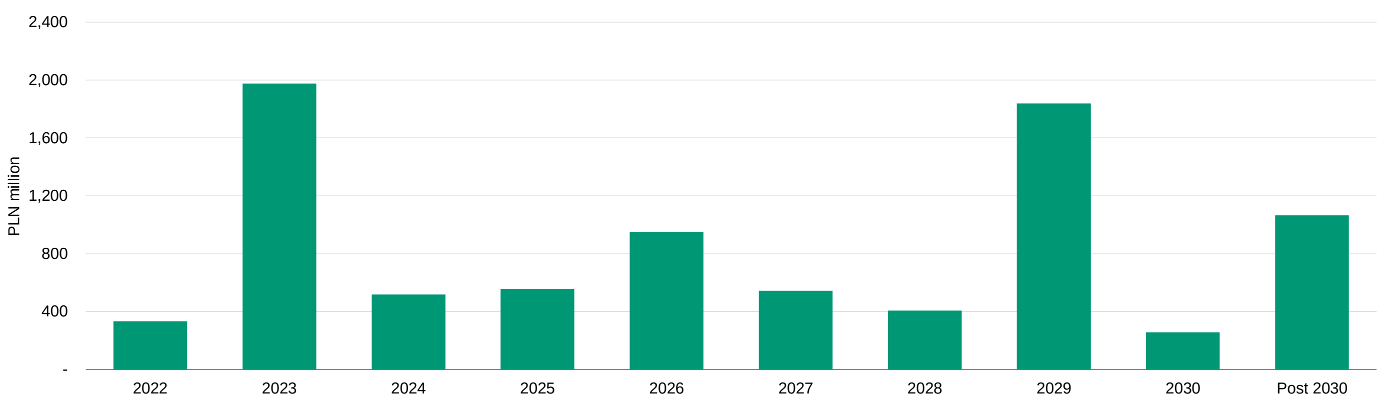
Liquidity analysis

As of September 30, 2022, PGE had unrestricted cash and cash equivalents of PLN11 billion and undrawn overdraft facilities of around PLN1.9 billion, with maturity in 2023-24. On 9 December 9, 2022, PGE signed an incremental PLN2 billion loan agreement with the European Investment Bank. The loan availability period is 24 months, with maturity date set to be maximum 18 years from the drawing date of the last installment.

Together with estimated annual FFO of PLN10.0 billion-PLN12.0 billion, PGE's liquidity is sufficient to cover its expected investment spending and upcoming debt maturities over the next 12-18 months.

Despite the debt maturities in 2022-23, combined with the group's sizeable capital spending programme, we expect PGE's liquidity requirements to be manageable over the coming 18 months.

Exhibit 11
PGE's upcoming debt maturities are covered by operating cash flow and cash on balance sheet
Debt maturity profile in PLN million, September 30, 2022



Sources: Company and Moody's Investors Service

Structural considerations

The provisional long-term senior unsecured rating of (P)Baa1 on the €2 billion euro medium-term note programme and the Baa1 senior unsecured rating of PGE Sweden AB (publ) reflect the unconditional and irrevocable guarantee that PGE provides under the programme, and the absence of structural and contractual subordination of the eurobond creditors to the claims of other PGE group lenders.

Methodology and scorecard

We assess PGE using our Unregulated Utilities and Power Companies rating methodology, published in May 2017, and the Government-Related Issuers rating methodology, published in February 2020. The baa2 Baseline Credit Assessment is below the scorecard-indicated outcome and is based on the uncertainties around the company's coal exit and our expectation that the company's credit metrics will weaken further in the medium term as large capital spending requires increased debt funding.

Exhibit 12
PGE Polska Grupa Energetyczna S.A.
Rating factors

Unregulated Utilities and Unregulated Power Companies Industry Grid [1][2]	Current As of 12/31/2021		Moody's 12-18 Month Forward View As of January 2023 [3]	
Factor 1 : Scale (10%)	**Measure**	**Score**	**Measure**	**Score**
a) Scale (USD Billion)	Baa	Baa	Baa	Baa
Factor 2 : Business Profile (40%)				
a) Market Diversification	Ba	Ba	Ba	Ba
b) Hedging and Integration Impact on Cash Flow Predictability	Ba	Ba	Ba	Ba
c) Market Framework & Positioning	Ba	Ba	Ba	Ba
d) Capital Requirements and Operational Performance	B	B	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)	51.3x	Aaa	35x - 40x	Aaa
b) (CFO Pre-W/C) / Net Debt (3 Year Avg)	249.2%	Aaa	90% - 110%	Aaa
c) RCF / Net Debt (3 Year Avg)	249.1%	Aaa	90% - 110%	Aaa
b) (CFO Pre-W/C) / Debt (3 Year Avg)		NA		NA
c) RCF / Debt (3 Year Avg)		NA		NA
Rating:				
a) Indicated Outcome from Scorecard		A2		A2
b) Actual Baseline Credit Assessment Assigned				baa2
Government-Related Issuer	**Factor**			
a) Baseline Credit Assessment	baa2			
b) Government Local Currency Rating	A2			
c) Default Dependence	Very High			
d) Support	Strong			
e) Final Rating Outcome	Baa1			

[1] All ratios are based on 'Adjusted' financial data and incorporate Moody's Global Standard Adjustments for Non-Financial Corporations. [2] Numbers are as of 31/12/2021. [3] This represents Moody's forward view, not the view of the issuer, and unless noted in the text, does not incorporate any significant acquisitions and divestitures.
Sources: Moody's Investors Service and Moody's Financial Metrics™

Ratings

Exhibit 13

Category	Moody's Rating
PGE POLSKA GRUPA ENERGETYCZNA S.A.	
Outlook	Stable
Issuer Rating	Baa1
PGE SWEDEN AB (PUBL)	
Outlook	Stable
Bkd Senior Unsecured	Baa1

Source: Moody's Investors Service

Appendix

Exhibit 14

Peer comparison

PGE Polska Grupa Energetyczna S.A.

	PGE Polska Grupa Energetyczna S.A.			Eesti Energia AS			CEZ, a.s.			Vattenfall AB			EnBW Energie Baden-Wuerttemberg AG		
	Baa1 Stable			Baa3 Stable			Baa1 Stable			A3 Stable			(P)Baa1 Stable		
	FYE	FYE	FYE	FYE	FYE	FYE	FYE	FYE	FYE	FYE	FYE	FYE	FYE	FYE	FYE
(in USD million)	Dec-19	Dec-20	Dec-21	Dec-19	Dec-20	Dec-21	Dec-19	Dec-20	Dec-21	Dec-19	Dec-20	Dec-21	Dec-19	Dec-20	Dec-21
Revenue	9,806	11,760	13,672	1,036	952	1,553	9,132	9,309	10,166	17,606	17,307	21,007	21,758	22,478	38,036
EBITDA	1,817	1,452	2,374	283	242	371	2,510	2,829	3,002	4,125	5,027	6,815	2,813	2,979	3,429
Total Assets	20,467	21,875	22,064	3,891	4,508	4,982	30,488	32,016	53,442	48,140	56,400	86,412	48,500	56,241	81,052
Total Debt	3,424	3,240	2,826	1,275	1,241	1,088	8,886	8,573	8,311	17,454	21,521	21,732	22,549	25,998	25,882
Net Debt	3,136	2,139	1,208	1,236	1,037	863	8,343	8,291	7,092	14,126	15,082	3,040	14,456	17,388	11,970
FFO / Net Debt	72.6%	102.8%	249.2%	21.0%	24.0%	36.9%	27.0%	32.4%	38.3%	24.7%	28.3%	169.4%	16.4%	17.0%	25.0%
RCF / Net Debt	72.6%	102.8%	249.1%	15.8%	24.0%	36.9%	20.1%	22.2%	20.2%	21.6%	23.7%	149.3%	13.7%	13.9%	19.5%
(FFO + Interest Expense) / Interest Expense	26.1x	27.7x	51.3x	7.7x	7.2x	10.9x	8.7x	10.4x	11.8x	7.1x	8.4x	10.6x	4.6x	5.7x	6.4x
Debt / Book Capitalization	22.8%	21.6%	19.0%	38.5%	33.4%	27.8%	39.5%	37.8%	46.3%	55.1%	56.1%	44.9%	66.1%	65.2%	66.9%

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 15

Select historical adjusted financial data

PGE Polska Grupa Energetyczna S.A.

	FYE	FYE	FYE	FYE	FYE
(in PLN million)	Dec-17	Dec-18	Dec-19	Dec-20	Dec-21
INCOME STATEMENT					
Revenue	23,100	25,946	37,627	45,766	52,730
EBITDA	7,601	6,323	6,971	5,649	9,157
EBIT	4,407	2,712	3,072	1,728	4,924
Interest Expense	328	354	344	307	241
Net income	3,327	1,690	2,012	559	3,820
BALANCE SHEET					
Net Property Plant and Equipment	59,115	62,409	60,857	62,963	62,034
Total Assets	72,288	76,040	77,514	81,507	88,926
Total Debt	10,831	11,578	12,968	12,071	11,389
Cash & Cash Equivalents	2,466	1,190	1,091	4,102	6,521
Net Debt	8,365	10,388	11,877	7,969	4,868
Total Liabilities	27,289	29,432	35,335	39,059	41,464
CASH FLOW					
Funds from Operations (FFO)	6,669	6,404	8,625	8,195	12,130
Cash Flow From Operations (CFO)	7,510	4,673	6,326	9,796	7,058
Dividends	1	34	4	2	2
Retained Cash Flow (RCF)	6,668	6,370	8,621	8,193	12,128
Capital Expenditures	(5,947)	(6,280)	(6,771)	(5,843)	(4,642)
Free Cash Flow (FCF)	1,562	(1,641)	(449)	3,951	2,414
INTEREST COVERAGE					
(FFO + Interest Expense) / Interest Expense	21.4x	19.1x	26.1x	27.7x	51.3x
LEVERAGE					
FFO / Net Debt	79.7%	61.7%	72.6%	102.8%	249.2%
RCF / Net Debt	79.7%	61.3%	72.6%	102.8%	249.1%
Debt / EBITDA	1.4x	1.8x	1.9x	2.1x	1.2x
Net Debt / EBITDA	1.1x	1.6x	1.7x	1.4x	0.5x

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 16

Adjusted net debt calculation

PGE Polska Grupa Energetyczna S.A.

(in PLN million)	FYE Dec-17	FYE Dec-18	FYE Dec-19	FYE Dec-20	FYE Dec-21
As Reported Total Debt	10,045	10,708	12,308	11,409	10,826
Pensions	522	588	660	662	563
Leases	264	282	0	0	0
Moody's Adjusted Total Debt	10,831	11,578	12,968	12,071	11,389
Cash & Cash Equivalents	(2,466)	(1,190)	(1,091)	(4,102)	(6,521)
Moody's Adjusted Net Debt	8,365	10,388	11,877	7,969	4,868

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 EBITDA calculation

PGE Polska Grupa Energetyczna S.A.

(in PLN million)	FYE Dec-17	FYE Dec-18	FYE Dec-19	FYE Dec-20	FYE Dec-21
As Reported EBITDA	7,762	6,552	7,124	5,335	9,703
Pensions	(4)	(3)	0	(9)	(3)
Leases	44	47	0	0	0
Interest Expense - Discounting	(172)	(189)	(204)	(229)	(219)
Non-Standard Adjustments	(40)	(71)	57	552	0
Unsual Items - Income Statement	11	(13)	(6)	0	(324)
Moody's Adjusted EBITDA	7,601	6,323	6,971	5,649	9,157

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

Endnotes

1 See government website: https://www.gov.pl/web/aktywa-panstwowe/rusza-transformacja-sektora-elektroenergetycznego).

2 Recurring EBITDA is reported EBITDA adjusted for significant one-off items, such as compensation payments, special provisions and others. If not indicated differently, EBITDA in this report refers to recurring EBITDA as reported by PGE.

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CLIENT SERVICES

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