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EnBW Energie Baden-Wuerttemberg AG

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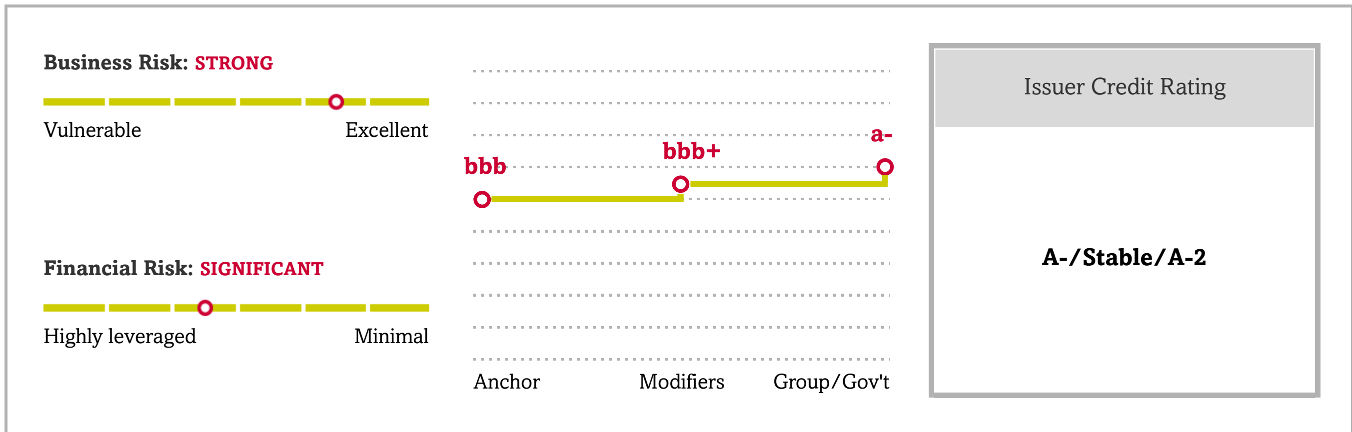


Credit Highlights

Overview

Key strengths	Key risks
Diversified and integrated position throughout the energy supply chain, which has demonstrated its resilience across different economic and geopolitical cycles.	An increasing share of minority stakes as EnBW divests stakes in certain projects and subsidiaries carrying proportionally less debt, which increases cash flow leakage.
High share of EBITDA (42% on average) from regulated operations and an expanding share of renewable generation (25%), which provides stability and predictability to earnings and cash flow.	A heavier carbon footprint in the short term than planned because of supply security issues leading EnBW to increase the utilization of its existing coal-generation fleet, which nevertheless is profitable.
An investment strategy that focuses on regulated infrastructure and renewable capacity deployment, which we believe carries low execution risk and provides a long-term earnings base.	Significant exposure to volatile and commodity-driven wholesale power prices (25% EBITDA on average coming from generation and trading activities).
A financial policy, including shareholder support, that we see as geared toward protecting the current 'A-' rating.	EnBW's offshore wind pipeline exposes the company to ongoing industry challenges, such as supply chain constrains, financing, and cost inflation risks.
Our assessment of a moderate likelihood that the State of Baden-Wuerttemberg would provide timely and sufficient extraordinary support to EnBW in the event of financial distress results in a one-notch uplift to the rating.	

Germany-based EnBW Energie Baden-Wuerttemberg (EnBW) will post exceptionally robust credit metrics over the next two to three years, mostly because of locked-in margins at its power generation and trading business, which will provide additional headroom to accelerate capital expenditure (capex). We estimate that EnBW has sold more than 90% of its 2024 power generation, and over 50% for 2025, at prices significantly above historical averages. We expect power volumes sold in advance at higher prices, coupled with EnBW's gas and coal procurement at significantly lower prices than in 2022, will allow the group to increase its profitability significantly in 2023 and 2024, with EBITDA increasing by more than 80% year-over-year in this segment. Together with stable grid operations, which we expect will be slightly diluted in 2023 and 2024 to about 30% of consolidated EBITDA from closer to 50% historically, we forecast a consolidated funds from operations (FFO) to debt of about 38%-43% in 2023 and 24%-29% in 2024, which corresponds to about 33%-38% and 19%-24% on a proportionate basis, respectively. We expect the significant boost to metrics to be temporary, as it mostly stems from the surge in power prices and what we view as riskier trading

activities, earnings from which fluctuate significantly year over year. However, these results provide material financial headroom for EnBW to accelerate capex as it strives to invest in projects related to the German energy transition.

Despite strong credit metrics, our expectation that EnBW will exhaust its headroom by increasing investments over the next three years limits rating upside. Although we think EnBW will post proportionate credit metrics significantly above 20%, the level above which we may consider an upgrade, a positive rating action is currently constrained by the lack of commitment to metrics consistent with a higher rating. Indeed, most of this headroom may be consumed by increasing capex over 2024 and 2025 to about €5 billion, from an average of €2.5 billion in 2021 and 2022, while keeping proportionate FFO to debt above 18%. We expect that EnBW's capex will contribute to Germany's energy ambitions by increasing renewable power capacity additions, and high-voltage and low-voltage grid strengthening. Our capex figure sees potential for higher investments beyond EnBW's 2025 strategic plan, implying a gradual normalization of credit metrics over the next two to three years.

We expect EnBW to remain committed to maintaining an 'A-' rating. We interpret the company's financial policy as consistent with sustainably posting a proportionate FFO to debt of at least 18%. This, along with our expectation that capex will be revised upward, supports our assumption that EnBW will gradually exhaust its increasing financial headroom under the current rating.

The financial implications of EnBW's biomethane trading subsidiary BMP Greengas filing for insolvency proceedings will be material but manageable, in our view. Gas producers' contractual ability to reduce biomethane sold to BMP Greengas, coupled with customers' flexibility to increase biomethane purchased, prompted the subsidiary to file for protection against creditors under the German insolvency law on May 25, 2023. Under this legal status--known as self-administration--EnBW lost control of the subsidiary and consequently deconsolidated it, as of June 30, 2023, and booked an impairment of €251 million. Until that point, BMP Greengas was a 100% owned subsidiary of Erdgas Südwest GmbH, itself a 79%-owned subsidiary of EnBW.

On Oct. 12, 2023, EnBW made a binding offer to finance BMP Greengas's insolvency plan and reconsolidate the company. If the bid is successful, we expect that the total impact in terms of FFO to debt will represent around 300 basis points (bps), which is largely manageable given our forecast of a proportionate FFO to debt of about 38%-43% for 2023. We understand that the obligations resulting from the biomethane contracts were an isolated case in the consolidated group and expect management to adhere to prudent risk management policies after assessing possible takeaways from the BMP Greengas case.

The central government's acquisition of a minority stake in TransnetBW through KfW does not affect our ratings on EnBW. The group disposed of 24.95% of the shared capital at its power TSO subsidiary TransnetBW (unrated) to a consortium of more than 30 German banks, insurance companies, and corporations on May 26, 2023. In addition, on Nov. 10, 2023, EnBW announced that it had agreed to sell an additional 24.95% to the German promotional bank KfW at the same terms. We understand that the new partners in TransnetBW will contribute with capital to accelerate TransnetBW investment plan, which according to the German Network Development Plan amount to close to €10 billion from 2022 to 2030. However, the increased ownership of the central government through KfW in one of EnBW's subsidiaries does not prompt us to revise up from moderate our assessment of potential extraordinary government support to the consolidated group, which we already account for in our rating on EnBW through the 46.75% ownership

of EnBW AG by the State of Baden-Wuerttemberg (AA+/Stable/A-1+).

EnBW's offshore wind pipeline exposes the company to ongoing industry challenges, such as supply chain constraints, financing, and cost inflation risks. Across Europe, the approximately 300-basis-point increase in risk-free rates since December 2021, along with high inflation on the unit costs of renewables investments, are reducing the profitability of new renewable power generation projects. This is particularly the case for offshore wind projects that are subject to contracts with prices that were fixed in a more benign cost and financing environment. These challenges could affect EnBW's close to 7 gigawatt (GW) offshore wind projects, of which 960 megawatts (MW) are under construction in Germany. We expect, however, that the company will adhere to its risk-sharing policy and sound supply chain management while developing such projects.

Outlook: Stable

The stable outlook indicates that EnBW will post proportional FFO to debt above 18% at least until 2025, mostly thanks to high hedged electricity prices and the recovery of redispatch and grid reserve costs--incurred in 2022 at the power transmission system operator business, and to be recovered with a two-year time lag. We expect that the spread between the consolidated and proportionate ratios will increase to 500-600 bps by 2025, following the sale of 49% of TransnetBW.

We expect EnBW will continue accelerating its investments in renewable and regulated grid deployment, with a long-term business mix showing about 45%-50% of proportionate EBITDA coming from regulated grids, and 25%-30% coming from renewable power generation.

Downside scenario

We could downgrade EnBW if FFO to debt fell below 18% without a clear path to recovery. This could be the result of an even larger than expected increase in the share of minority interests in the group's results without any mitigating factors, or lower profitability than forecast.

Although far from our base-case scenario, the rating could also come under pressure if severe disruptions at EnBW's power generation fleet, coupled with very high-power prices, force the company to incur losses for reprocuring electricity, given it has hedged a large share of its power generation for 2024 and 2025. However, the materialization of such a scenario would also depend on the evolution of carbon dioxide and fuel prices.

Upside scenario

We believe an upgrade is unlikely, despite our expectation that EnBW will post exceptionally strong credit metrics over the next two years, because we expect the company to exhaust the accumulated rating headroom in accelerating investments related to the energy transition. In particular, we believe that investments at the company's power distribution business could accelerate over the medium term if Germany is to achieve its energy targets by 2030.

We could upgrade EnBW if it were to consistently post proportional FFO to debt above 20%, along with gradual strengthening of the business risk profile, which we believe could result from increasing the share of EBITDA from regulated or long-term contracted activities.

Our Base-Case Scenario

Assumptions

- Generation and trading temporarily increasing to about 50% as share of EBITDA in 2023, up from 25% in 2021. Grids and renewables accounting for about 50%, down from about 75% in 2021. We expect a mix returning to 75% regulated grids and renewables over the longer term.
- No further windfall tax on EnBW's inframarginal power generation.
- Capex of about €4.3 billion in 2023 and €5.5 billion in 2024 and 2025.
- Dividends from equity investments of €300 million in 2023 reducing to €160 million in 2024, which we add to EBITDA.
- Dividend distributions, including to minority shareholders, of about €660 million in 2023 and €610 million in 2024.
- We assume about €2.7 billion of collaterals received for exchange-based and over-the-counter trading business to partially flow back over 2023 and 2024, via working capital.
- Hybrid stock of €2.5 billion to remain as a permanent layer of EnBW's capital structure.
- 100% of power generation hedged for 2023, 70%-90% for 2024, and close to 50% for 2025.
- Realized power prices of about €120 per megawatt hour (/MWh) in 2024 and €110/MWh in 2025 for unhedged generation.
- Average cost of funding at about 2.6%-2.8%. New debt issued at about 4%.
- Proceeds of €2.0 billion for the disposal of up to 49.9% of TransnetBW.
- No balance relating to the German Renewable Energies Act (EEG) or margining cash as part of the cash available to the company for debt repayment. This means we expect the about €2.4 billion balance as of year-end 2022 to flow back in 2023 and 2024.
- EnBW recovering re-dispatch and grid reserves expenses incurred in 2022 mostly by 2025.

Key metrics

EnBW Energie Baden-Wuerttemberg AG--Forecast summary

Industry sector: Energy

	--Fiscal year ended Dec. 31--						
(Mil. €)	**2019a**	**2020a**	**2021a**	**2022a**	**2023e**	**2024f**	**2025f**
EBITDA (reported)	2,330	2,716	2,761	3,086	5,700-6,200	4,700-5,200	4,400-4,900
Plus/(less): Other	(27)	197	625	1,657	(0-200)	(0-200)	(0-200)
EBITDA	2,303	2,912	3,385	4,743	5,500-6,000	4,550-5,050	4,200-4,700
Less: Cash interest paid	(204)	(212)	(300)	(325)	(350-450)	(400-500)	(450-550)
Less: Cash taxes paid	(409)	(208)	(201)	(228)	(800-900)	(600-700)	(500-600)
Funds from operations (FFO)	1,690	2,493	2,884	4,191	4,400-4,700	3,500-3,800	3,300-3,600
Debt (reported)	8,191	9,613	11,250	12,891	14,500-15,500	15,500-16,500	16,500-17,500
Plus: Lease liabilities debt	700	886	884	913	1,100-1,300	1,150-1,350	900-1,100

EnBW Energie Baden-Wuerttemberg AG--Forecast summary (cont.)							
Plus: Pension and other postretirement debt	2,922	2,734	2,327	1,402	900-1,100	900-1,100	900-1,100
Less: Accessible cash and liquid Investments	(1,159)	(1,151)	(5,898)	(5,498)	(5,500-6,000)	(3,500-4,000)	(4,000-4,500)
Plus/(less): Other	82	3	199	36	(0-300)	(0-300)	(0-300)
Debt	10,736	12,085	8,763	9,745	11,000-12,000	14,000-15,000	14,000-15,000
Cash and short-term investments (reported)	1,364	1,253	6,653	7,824	5,500-6,000	3,500-4,000	4,000-4,500
Adjusted ratios							
Debt/EBITDA (x)	4.7	4.1	2.6	2.1	1.9-2.1	2.9-3.1	3.2-3.4
FFO/debt (%)	15.7	20.6	32.9	43.0	37-42	24-28	21-26

All figures are adjusted by S&P Global Ratings, unless stated as reported. a--Actual. e--Estimate. f--Forecast.

EnBW is changing its financial reporting to disclose its economically hedged result, which results in a higher EBITDA for fiscal year ending Dec. 31, 2022 compared with previous reporting. As of June 30, 2023, EnBW has presented its economically hedged result as an additional disclosure. The change splits the nonoperating valuation effect from changes in the value of derivative contracts from the actual realized earnings. As a result of this change, we are adding €908.1 million to 2022 EBITDA in our adjustments, reflecting the actual economically hedged result for the fiscal year. As such, EnBW's consolidated FFO to debt as of Dec. 30, 2022, was 43%, instead of our previous estimate of 24%.

Company Description

EnBW is a leading vertically integrated utility in Germany. The group is principally engaged in electricity generation and trading, as well as the operation of electricity grids. Its gas activities include gas storage, gas trading, and portfolio management, while the downstream business covers the transmission, distribution, and sale of gas.

In addition to its traditional EnBW brand, the group serves its German household and industrial customers under the Yello and Naturenergie labels, targeting different market segments. Under its Strategy 2025, EnBW aims to continue positioning its business mix toward less volatile renewable generation and stable grid operations, which we forecast at 25%-30% and 45%-50% of EBITDA, respectively, by 2025, versus 10% and 33% in 2012. EnBW has a track record of achieving its strategic plans ahead of schedule.

EnBW is predominantly active in Germany (more than 85% of EBITDA), where the focus of its operations is the State of Baden-Wuerttemberg, a key center of the country's manufacturing and engineering industry. The group is also the majority shareholder of Stadtwerke Duesseldorf AG (not rated). In addition, EnBW has operations in France, Sweden, Denmark, the Czech Republic, Switzerland, and Turkiye.

The State of Baden-Wuerttemberg and Zweckverband Oberschwäbische Elektrizitätswerke, an association of municipalities in Baden-Wuerttemberg, each own 46.75% of EnBW. The remaining shares are held in free float by several associations of municipalities in Baden-Wuerttemberg and private investors.

Peer Comparison

Table 1

EnBW Energie Baden-Wuerttemberg AG--Peer comparison

Industry Sector: Energy

	EnBW Energie Baden-Wuerttemberg AG	E.ON SE	SSE PLC	Engie S.A.	Naturgy Energy Group S.A.	Enel SpA
Ratings as of Oct. 19, 2023	A-/Stable/A-2	BBB/Stable/A-2	BBB+/Positive/A-2	BBB+/Stable/A-2	BBB/Stable/A-2	BBB+/Negative/A-2
	--Fiscal year ended--					
	Dec. 31, 2022	Dec. 31, 2022	March 31, 2023	Dec. 31, 2022	Dec. 31, 2022	Dec. 31, 2022
(Mil. €)						
Revenue	55,935.3	115,360.0	14,223.2	93,865.0	34,737.0	138,549.0
EBITDA	4,743.3	6,210.6	3,435.7	12,967.0	5,688.0	17,345.0
Funds from operations (FFO)	4,190.8	4,517.6	2,800.4	10,450.0	4,318.6	13,141.5
Interest expense	406.8	1,059.0	523.9	1,806.0	672.4	3,058.5
Cash interest paid	324.6	1,099.0	299.8	1,013.0	607.4	2,269.5
Cash flow from operations	1,882.8	9,580.0	1,629.0	7,643.0	3,311.6	8,965.5
Capital expenditure	2,613.8	4,111.0	2,002.1	6,226.0	1,665.0	13,193.0
Free operating cash flow (FOCF)	(731.0)	5,469.0	(373.0)	1,417.0	1,646.6	(4,227.5)
Discretionary cash flow (DCF)	(1,150.7)	3,872.0	(1,084.4)	(1,577.0)	(314.4)	(9,240.0)
Cash and short-term investments	5,971.6	8,573.0	1,015.5	15,558.0	3,985.0	10,964.0
Debt	9,744.8	31,388.0	10,513.5	42,089.5	15,169.5	83,887.6
Equity	14,013.7	21,867.0	11,585.4	37,588.5	8,869.0	40,007.0
Adjusted ratios						
EBITDA margin (%)	8.5	5.4	24.2	13.8	16.4	12.5
Return on capital (%)	15.9	6.1	13.7	10.6	18.6	8.6
EBITDA interest coverage (x)	11.7	5.9	6.6	7.2	8.5	5.7
FFO cash interest coverage (x)	13.9	5.1	10.3	11.3	8.1	6.8
Debt/EBITDA (x)	2.1	5.1	3.1	3.2	2.7	4.8
FFO/debt (%)	43.0	14.4	26.6	24.8	28.5	15.7

Table 1

EnBW Energie Baden-Wuerttemberg AG--Peer comparison (cont.)						
Cash flow from operations/debt (%)	19.3	30.5	15.5	18.2	21.8	10.7
FOCF/debt (%)	(7.5)	17.4	(3.5)	3.4	10.9	(5.0)
DCF/debt (%)	(11.8)	12.3	(10.3)	(3.7)	(2.1)	(11.0)

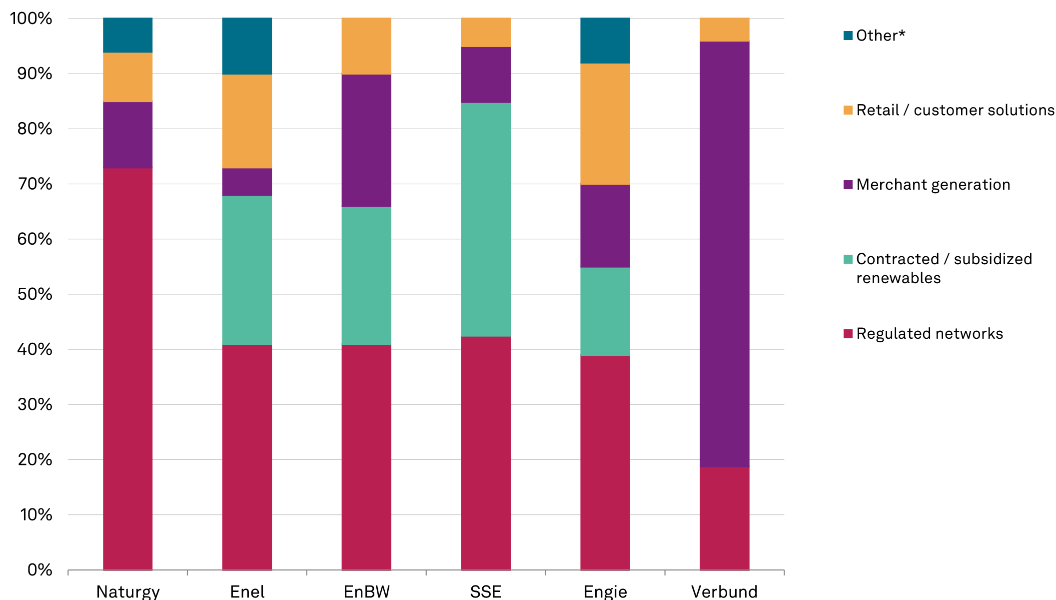
We compare EnBW with other integrated European utilities--companies with exposure to power generation, gas and electricity distribution, and transmission and commercialization of power and gas.

We consider SSE PLC to be one of EnBW's closest peers because of its integrated nature and similar EBITDA mix (see chart 1). Both entities generate about 40%-45% share of EBITDA from purely regulated activities operating under the U.K. and German regulatory frameworks, which we view as very credit supportive. Both entities currently benefit from the positive power price environment, which is likely to slightly dilute regulated earnings temporarily.

Chart 1

Share of regulated EBITDA in line with industry peers

EBITDA split by operations



Note: We are showing the EBITDA split as of 2021, which excludes the positive effect of extremely high power prices on each company's generation and trading activities, because we think it temporarily distorts the long-term business mix.*Other includes midstream infrastructure, district heating, trading, and other activities. Source: S&P Global Ratings.

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EnBW and SSE have similar installed generation capacity (13.1 GW for EnBW versus 10.7 GW for SSE) and both focus on one key market (that is, Germany for EnBW and the U.K. for SSE). Also, both entities have sizable renewable project pipelines in Europe: SSE aims to reach 9 GW of installed capacity by 2027, from about 4 GW today, while

EnBW has about 6.6 GW of onshore wind and PV projects under development, with a total renewable installed capacity of 5.5 GW at present. That said, despite these plans, we expect both EnBW and SSE's total installed capacity will remain significantly smaller than that of larger European peers such as Iberdrola, Enel, or Engie. We assess both entities' stand-alone credit profiles (SACPs) at 'bbb+'.

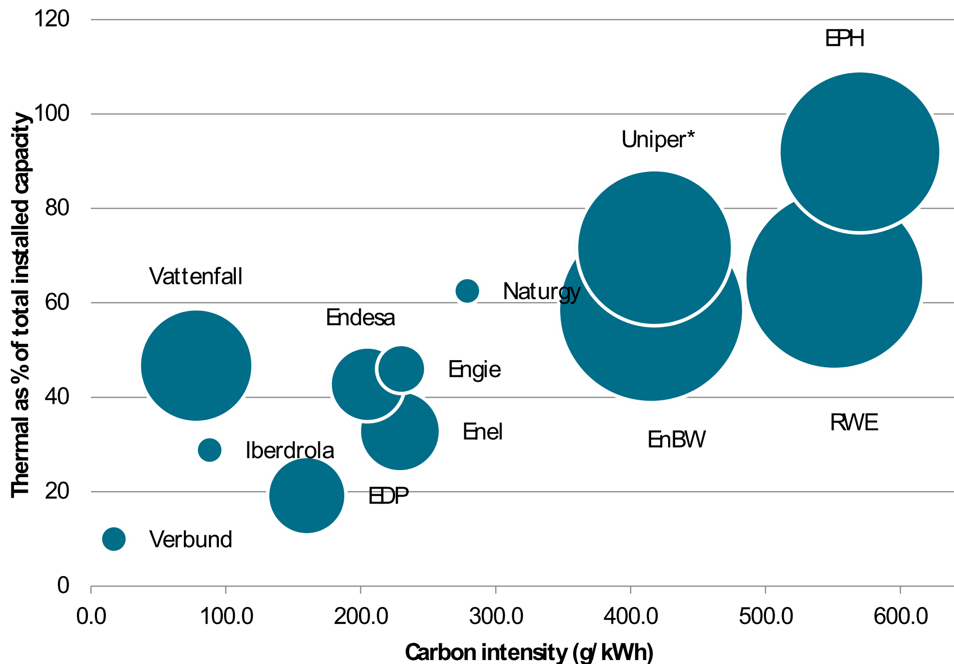
While our positive outlook on SSE mirrors our expectation that it will post an FFO to debt consistently and sustainably above 23%, in part thanks to the favorable market conditions, and EnBW will post similarly strong metrics, the stable outlook on EnBW reflects our expectation that the company will exhaust such headroom over the medium term.

We see the 'bbb+' SACP for EnBW as being in line with that of Engie S.A., with Engie's scale partially compensating for a relatively lower share of regulated activities and renewable generation. EnBW compares favorably with Naturgy Energy Group S.A. on an SACP basis, despite Naturgy's higher share of EBITDA coming from purely regulated activities. This is because we view Germany's regulatory framework as stronger than that of Spain, and because of Naturgy's exposure to higher-risk Latin American jurisdictions.

EnBW's current carbon footprint is significantly heavier than industry leaders such as Iberdrola or Verbund because it generates more than 60% of its electricity from thermal generation (see chart 2). Because of tightening political and social scrutiny, along with the high marginal costs attached to thermal power generation technologies against renewables, this could be a disadvantage over the long term; however, EnBW has a clear, structured, and credible plan for decarbonization, including exiting coal by 2028. In addition, EnBW's coal and gas generation are very profitable, which provide the group with significant resources to transform its asset mix. Therefore, we expect EnBW to be able to retain its business strength over the long term.

Chart 2

Power generators are likely to decarbonize their generation mix by 2030
German operators' CO2 footprint reflect stickiness of coal generation



*Excluding Russian activities. §Size of the bubble represents hard and brown coal as % of total installed capacity.
TWh--Tera-watt hour. Source, own elaboration with data from annual and sustainability reports.
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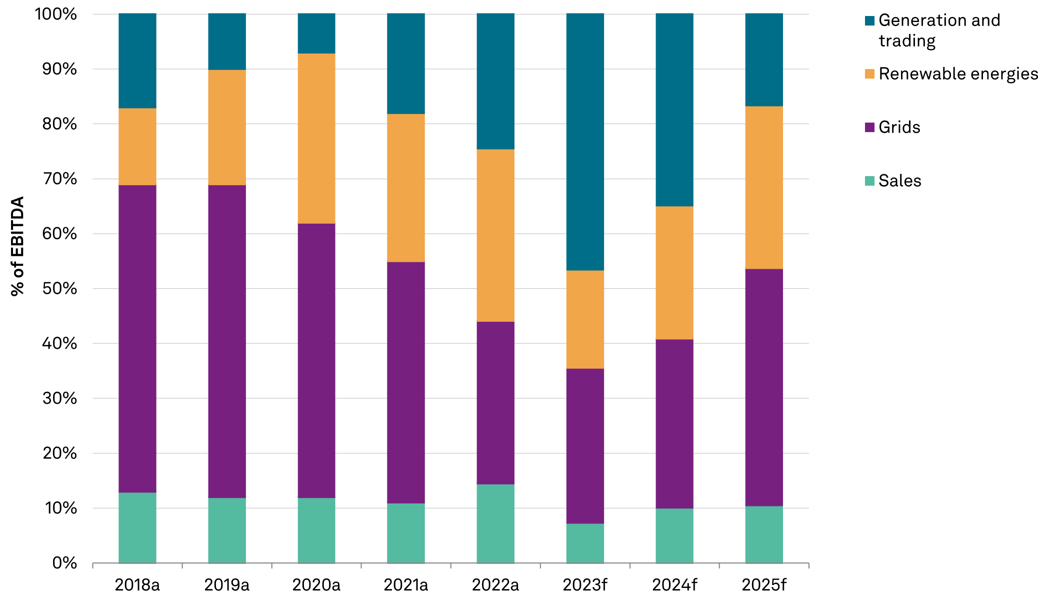
Business Risk: Strong

A business mix mostly consisting of purely regulated activities in what we view as a very supportive regulatory framework, along with an increasing share of contracted renewable power generation, underpins EnBW'S business strength. In 2023 and 2024, we expect that the share of volatile trading, thermal generation, and supply will increase as a share of EBITDA, because of above-average power and gas prices and the current tight energy markets, which allow for significant arbitrage opportunities at EnBW's trading activities. However, we foresee a business mix approaching 75%-80% of EBITDA coming from regulated, system-critical infrastructure (regulated power and gas distribution and transmission grids) and contracted or subsidized renewable generation by 2025, with power generation, trading, and supply services representing the remaining 20%-25% over the long term, in accordance with EnBW's 2025 strategy (see chart 3). As such, we forecast that the group will dedicate about 50% to 55% of its investments to power, and to a much lesser extent gas grids, and about 20%-25% to renewable generation, with the rest accounting for EnBW's remaining segments such as fuel switch projects, e-charging stations, and supply. Our view of EnBW's long-term business mix also implies that we expect proceeds from business divestments--for example, the 49% of TransnetBW--to be invested in projects with the same earnings quality in such a way that the business mix is preserved.

Chart 3



a--Actual. f--Forecast. Source: S&P Global Ratings.

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As EnBW accelerates the transformation of its asset mix, we think the execution risk of renewable investments is increasing. Despite our understanding that contracted renewable power generation is supportive of stable and predictable cash flow, we see unit capex costs increasing significantly for onshore and offshore wind and PV. This trend, coupled with the rising cost of capital, could depress the profitability of EnBW's project pipeline, but this depends on the company's ability to close contracts that reflect the market conditions. We will therefore monitor the evolution of EnBW's renewable pipeline.

A high share of regulated income provides a good degree of cash flow stability. EnBW's regulated operations are concentrated in Germany. We see the German regulatory framework as one of the strongest in Europe, because of the regulator's solid track record of stability and the five-year regulatory period with well-defined and transparent tariff-setting procedures. It also enables EnBW to fully recover its costs--as long as deemed efficient by the regulator--and mitigates the effects of volume and commodity risks via regulatory account mechanisms. This means that volume effects in regulated results inflicted by the ongoing very volatile energy markets should be recovered, albeit with some lag. The high share of purely regulated activities in EnBW's EBITDA makes it less dependent on short-term macroeconomic swings and more so on long-term infrastructure trends, which we assess as positive from a credit perspective, because it provides long-term cash flow visibility.

We expect the German regulatory framework will adapt to the system investment needs, supporting our assessment that it is very credit supportive. The ambitions of the German government to increase the share of renewable power to 80% of gross electricity consumption require a steep increase in investments to adapt and deploy distribution and transmission electricity grids. For EnBW's subsidiaries, active in both high- and low-voltage grids, this means that by 2025 investments in grid deployment will almost triple the 2018-2020 average. Because returns on the RAB are typically spread over a long depreciation period, the investment pace required to attain Germany's energy ambitions could strain operators' balance sheets and dilute credit quality. However, this could be partially mitigated by the German regulator BNetzA's proposal to update the revenue cap for new investments every year, instead of waiting up to five years currently.

Equally crucial, on June 7, 2023, BNetzA also proposed to raise to 7.09% from 5.07% the allowed pretax return on equity on power grids' new investments over the fourth regulatory period (excluding investment measure investments [IMAs] and existing investments), with the figure being adjusted on the actual level annually. If maintained, we expect the impact of this proposal would be modest at first and could increase only as new investments are incorporated into the regulated asset base (RAB), provided that the variable rate of return remains high.

However, overall, we view this as credit supportive for applicable investments, as well as for the sector in general. We will assess the impact of the proposals and final parameters on EnBW's credit quality once they are finalized, which we expect will happen before year-end 2023.

EnBW's integrated position across the power and gas supply chain provides additional competitive advantages. EnBW's business mix is well diversified across the whole energy value chain, which has helped the company to remain resilient across challenging macroeconomic and geopolitical conditions such as the COVID-19 pandemic or the ongoing European energy shortages stemming from the Russia-Ukraine conflict. For instance, EnBW's power mix, comprising efficient combined cycle gas turbine (CCGT), coal, and renewable generation, has allowed the group to provide base load generation while at the same time benefitting from profitable dispatchable capacity to respond to security of supply issues during the 2022 energy crisis. This mitigated the heavy losses incurred during 2022 to procure missing gas volumes at VNG, as it would enable the company to finance the BMP Greengas insolvency plan.

In addition to diversification, the group's scale is another advantage: its large power generation asset base allows the company to absorb new customers as smaller, nonintegrated players are forced out of the market because of liquidity pressures amid power price volatility.

We think EnBW's recently announced environmental goals will help the company to maintain a competitive edge over the long term. The outbreak of the Russia-Ukraine war, coupled with unusually low French nuclear output in 2022, forced EnBW to increase power generation from its brown hard coal and gas power plants. In our view, this does not represent a risk from a credit perspective, because the plants are running for security of supply purposes (which explains why they are excluded from windfall tax legislation), and the company profits significantly from running these plants.

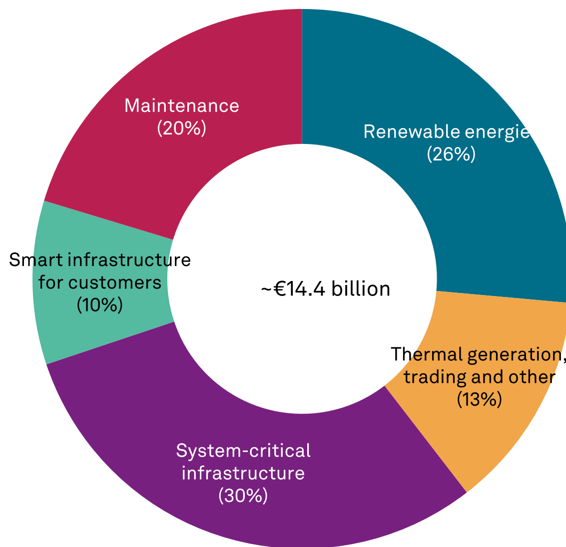
Furthermore, EnBW announced on March 27, 2023, that it intends to fully shut down its coal fleet by 2028, significantly accelerating from its previous target of 2035. This is still dependent on whether the German government's policy framework allows for it. EnBW intends to switch the fuel in locations occupied by coal capacity to new

dispatchable power CCGT plants, which would also be compatible with renewable gases once a supply chain allows. This will preserve a flexible generation portfolio complementing renewables--a long-term competitive advantage as EnBW's profitability profile will be supported by baseload capacity at lower marginal costs while preserving the flexibility to dispatch electricity at peak hours, thereby benefiting from higher spreads and ensuring security of supply.

We expect EnBW will use its increasing financial headroom to accelerate the transformation of its asset portfolios to a cleaner mix, and capital allocation will be crucial in maintaining the strength of its business risk profile. We expect that EnBW will increase capex to about €4.5 billion-€5 billion in 2024 and 2025--considerably more than €2.1 billion-€2.7 billion until 2022--as it dedicates almost half to regulated grids and close to 30% to renewable power generation (see chart 4).

Chart 4

The majority of investments will flow into renewables and system critical infrastructure



*Mostly renewable generation, but also fuel-switch projects. §As of 2021, 68% of EnBW's capital expenditure is environmentally sustainable (i.e., EU Taxonomy conforming). We expect this figure to at least remain at that level, and gradually increase toward 2035. Source: S&P Global Ratings.

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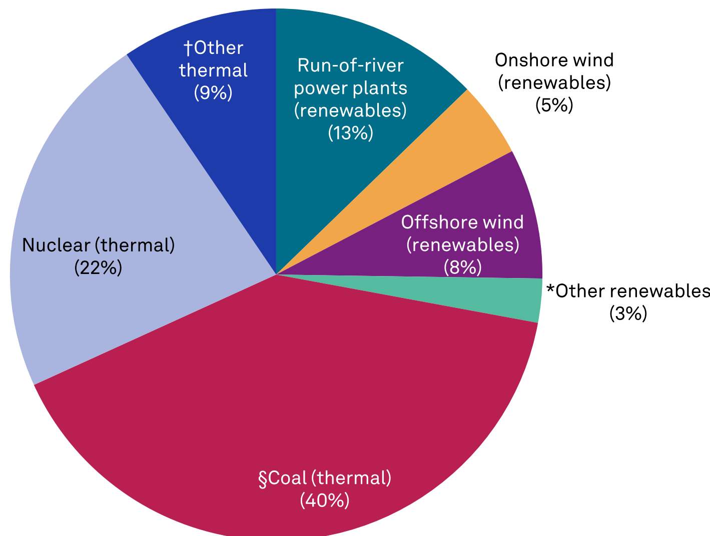
EnBW is forced to retain a relevant share of its existing coal capacity for security-of-supply purposes. This is because most of its installed coal capacity is in Southern Germany, supplying the energy-hungry states of Baden-Württemberg and Bavaria. In 2022, EnBW generated about 40% of its electricity from coal (see chart 5). Notwithstanding this, EnBW has a clear exit path from coal by 2028, well ahead of the legal deadline. Despite these plans, we think that the pace of the coal phaseout depends on Germany achieving its renewable energy targets and successfully deploying necessary grids to absorb the increased capacity because of security-of-supply concerns.

We think that coal generation, while currently very profitable, weakens a power generator's business risk profile given the long-term need to shut down the assets, and because of margin risk on carbon dioxide emission allowance prices. Therefore, EnBW's specific and well-funded plans to accelerate coal's replacement with new gas-peaking or renewable capacity supports business strength over the longer term.

Chart 5

EnBW--Own generation by technology (2022)



*Renewables (other) includes storage/pumped storage power plants using the natural flow of water and other renewable energies. §Thermal (coal) includes both brown coal and hard coal. Thermal (Other) includes gas, pumped storage power plants that do not use the natural flow of water and other thermal power plants.

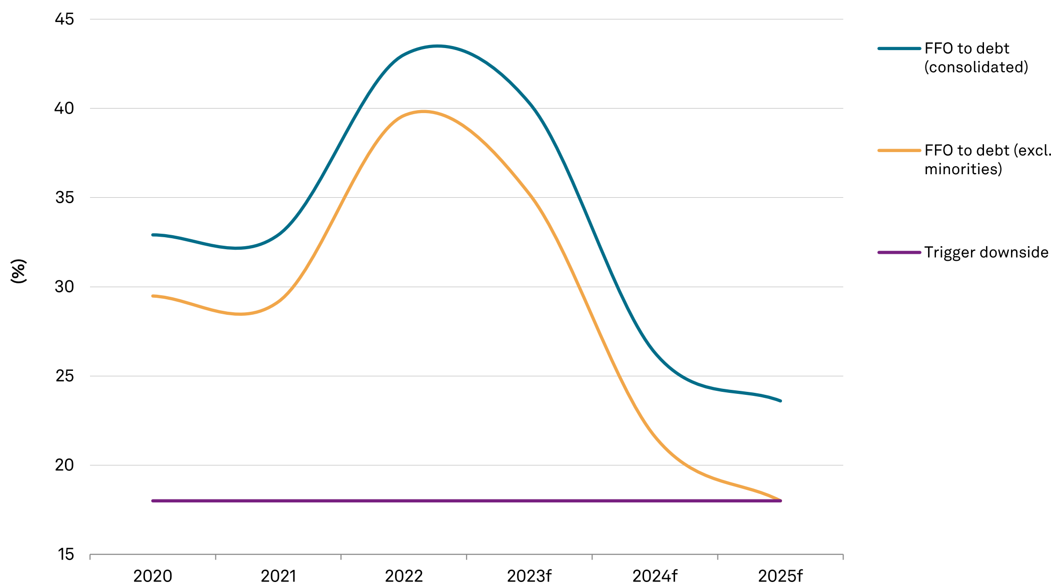
Financial Risk: Significant

We monitor FFO to debt on a proportionate basis, because we think it is a better representation of cash flow available to repay debt. We expect that selling minorities shares to spread project development risk will continue to play a central role in EnBW's expansion strategy, prudently reducing single-asset concentration risk in a certain project. For example, on May 26, 2023, EnBW sold 49.9% of its subsidiary TransnetBW to a consortium of German banks and the German KfW bank. In addition, in March 2023, EnBW sold a 49.9% stake in its project He Dreiht to a consortium consisting of Allianz Capital Partners, AIP, and Norges Bank Investment Management. We expect such partnerships will reduce the investment burden on EnBW's balance sheet. However, at the same time, it increases cash flow leakage to the extent the projects or subsidiaries remain fully consolidated but carry proportionally less debt. We forecast this approach will result in nearly one-third of FFO corresponding to minority shareholders by 2025, leading to a spread

between consolidated and proportionate FFO widening to about 500 bps-600 bps by 2025, versus 150 bps in 2019 (see chart 6). Therefore, we benchmark our rating on EnBW at an FFO to debt of 18% on proportionate basis, which excludes both the share of FFO which corresponds to minorities, and the share of debt which corresponds to EnBW's partners in said projects.

Chart 6

EnBW--The spread between consolidated and proportional FFO will likely widen
EnBW FFO to debt trajectories



FFO--Funds from operations. f--Forecast. Source: S&P Global Ratings.
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Our rating considers EnBW's supportive financial policy, including shareholder support, which will remain a key consideration as the company executes its ambitious strategy. Our 'A-' rating on the group reflects our assumption that management will steer the company's balance sheet to preserve an FFO to debt consistently above 18% on proportionate basis, but that any headroom above such level will likely be exhausted. We think EnBW's shareholders, the State of Baden-Wuerttemberg and Zweckverband Oberschwabische Elektrizitatswerke (an association of municipalities in Baden-Wuerttemberg) are supportive of the company's credit quality. Our opinion is based on the track record shown in 2012, when EnBW, along with its shareholders, introduced measures to strengthen the balance sheet amid weakening credit metrics, including issuance of hybrid securities totaling €1 billion, a capital increase of €822 million, and a significant dividend cut.

Financial summary

Table 2

EnBW Energie Baden-Wuerttemberg AG--Financial summary

Industry Sector: Energy

	--Fiscal year ended Dec. 31--				
	2022	**2021**	**2020**	**2019**	**2018**
(Mil. €)					
Revenue	55,935.3	32,074.7	19,694.3	18,765.0	20,617.5
EBITDA	4,743.3	3,385.0	2,912.4	2,303.0	2,267.8
Funds from operations (FFO)	4,190.8	2,884.0	2,492.8	1,689.8	1,749.6
Interest expense	406.8	312.5	372.3	520.8	426.4
Cash interest paid	324.6	300.4	211.8	204.1	247.5
Cash flow from operations	1,882.8	7,637.7	1,188.7	789.4	970.9
Capital expenditure	2,613.8	2,225.3	2,020.1	1,920.6	1,359.6
Free operating cash flow (FOCF)	(731.0)	5,412.4	(831.4)	(1,131.2)	(388.7)
Discretionary cash flow (DCF)	(1,150.7)	4,827.0	(1,264.2)	(1,485.7)	(739.4)
Cash and short-term investments	5,971.6	5,215.6	947.8	1,105.9	1,943.7
Gross available cash	5,497.6	5,897.5	1,151.4	1,158.9	2,072.0
Debt	9,744.8	8,763.5	12,085.2	10,735.7	7,989.6
Equity	14,013.7	9,742.3	8,996.8	8,684.4	7,260.9
Adjusted ratios					
EBITDA margin (%)	8.5	10.6	14.8	12.3	11.0
Return on capital (%)	15.9	10.3	7.6	5.1	7.0
EBITDA interest coverage (x)	11.7	10.8	7.8	4.4	5.3
FFO cash interest coverage (x)	13.9	10.6	12.8	9.3	8.1
Debt/EBITDA (x)	2.1	2.6	4.1	4.7	3.5
FFO/debt (%)	43.0	32.9	20.6	15.7	21.9
Cash flow from operations/debt (%)	19.3	87.2	9.8	7.4	12.2
FOCF/debt (%)	(7.5)	61.8	(6.9)	(10.5)	(4.9)
DCF/debt (%)	(11.8)	55.1	(10.5)	(13.8)	(9.3)

Reconciliation

Table 3

EnBW Energie Baden-Wuerttemberg AG--Reconciliation of reported amounts with S&P Global Ratings' adjusted amounts (mil. €)

	--Fiscal year ended Dec. 31, 2022--									
EnBW Energie Baden-Wuerttemberg AG reported amounts										
	Debt	**Shareholders' equity**	**Revenue**	**EBITDA**	**Operating income**	**Interest expense**	**S&P Global Ratings' adjusted EBITDA**	**Cash flow from operations**	**Dividends**	**Capital expenditure**
Reported	12,891.2	8,963.0	56,002.6	3,086.3	2,141.2	306.8	4,743.3	1,804.8	399.4	2,770.7

Table 3

EnBW Energie Baden-Wuerttemberg AG--Reconciliation of reported amounts with S&P Global Ratings' adjusted amounts (mil. €) (cont.)										
S&P Global Ratings' adjustments										
Cash taxes paid	--	--	--	--	--	--	(227.9)	--	--	--
Cash interest paid	--	--	--	--	--	--	(318.8)	--	--	--
Reported lease liabilities	912.5	--	--	--	--	--	--	--	--	--
Intermediate hybrids reported as debt	(1,244.4)	1,244.4	--	--	--	(20.3)	20.3	20.3	20.3	--
Postretirement benefit obligations/deferred compensation	1,402.3	--	--	0.7	0.7	93.7	--	--	--	--
Accessible cash and liquid investments	(5,497.6)	--	--	--	--	--	--	--	--	--
Capitalized interest	--	--	--	--	--	26.1	(26.1)	(26.1)	--	(26.1)
Capitalized development costs	--	--	--	(24.4)	(1.5)	--	--	(24.4)	--	(24.4)
Dividends received from equity investments	--	--	--	304.6	--	--	--	--	--	--
Asset-retirement obligations	1,280.7	--	--	--	--	0.5	--	--	--	--
Nonoperating income (expense)	--	--	--	--	439.9	--	--	--	--	--
Reclassification of interest and dividend cash flows	--	--	--	--	--	--	--	108.2	--	--
Noncontrolling interest/minority interest	--	3,806.3	--	--	--	--	--	--	--	--
Revenue: Other (situational)	--	--	(67.3)	(67.3)	(67.3)	--	--	--	--	--
EBITDA: Gain/(loss) on disposals of PP&E	--	--	--	(3.8)	(3.8)	--	--	--	--	--
EBITDA: Derivatives	--	--	--	908.1	908.1	--	--	--	--	--
EBITDA: Valuation gains/(losses)	--	--	--	(112.2)	(112.2)	--	--	--	--	--
EBITDA: Other (situational)	--	--	--	651.3	651.3	--	--	--	--	--
Depreciation and amortization: Impairment charges/(reversals)	--	--	--	--	(670.1)	--	--	--	--	--
Depreciation and amortization: Other	--	--	--	--	67.3	--	--	--	--	--
Capital expenditure: Customer contributions	--	--	--	--	--	--	--	--	--	(106.4)
Total adjustments	(3,146.5)	5,050.7	(67.3)	1,657.0	1,212.4	100.0	(552.5)	78.0	20.3	(156.9)

Table 3

EnBW Energie Baden-Wuerttemberg AG--Reconciliation of reported amounts with S&P Global Ratings' adjusted amounts (mil. €) (cont.)

S&P Global Ratings' adjusted amounts

	Debt	Equity	Revenue	EBITDA	EBIT	Interest expense	Funds from operations	Cash flow from operations	Dividends paid	Capital expenditure
Adjusted	9,744.8	14,013.7	55,935.3	4,743.3	3,353.6	406.8	4,190.8	1,882.8	419.7	2,613.8

Liquidity: Adequate

We forecast that EnBW's sources will exceed uses by about 1.5x over the next 12 months. Although such a metric would be consistent with a strong score from a quantitative perspective, we assess EnBW's liquidity as adequate because we view the group's subsidiary VNG filing for state aid support in 2022 and the insolvency proceedings of its subsidiary BMP Greengas, resulting from exceptionally high intra-year working capital swings, as inconsistent with a stronger assessment.

However, EnBW preserves a robust liquidity position, which provides ample liquidity to fund upcoming capex.

Furthermore, EnBW's proven diverse access to capital markets and good banking relationships support our assessment.

Principal liquidity sources

- Estimated €6.1 billion of unrestricted cash as of Sept. 30, 2023.
- €2.6 billion undrawn committed credit lines maturing beyond 12 months.
- About €3.7 billion cash FFO forecast over the next 12 months.
- Our assumption that EnBW will receive most of the €2 billion from the sale of 24.95% of TransnetBW to a German consortium, and 24.95% to KfW, at closing of the transaction.

Principal liquidity uses

- About €740 million debt maturing over the next 12 months.
- Our assumption of €3.5 billion of working capital outflows over the next 24 months, mostly related to reversing EEG compensation mechanism balances and a positive net margining position.
- Capex of €4.7 billion.
- €620 million dividend payments over the next 12 months.
- We estimate that EnBW will dedicate funds to remediate BMP Greengas GmbH insolvency, and we assume such outflow will not exceed €300 million.

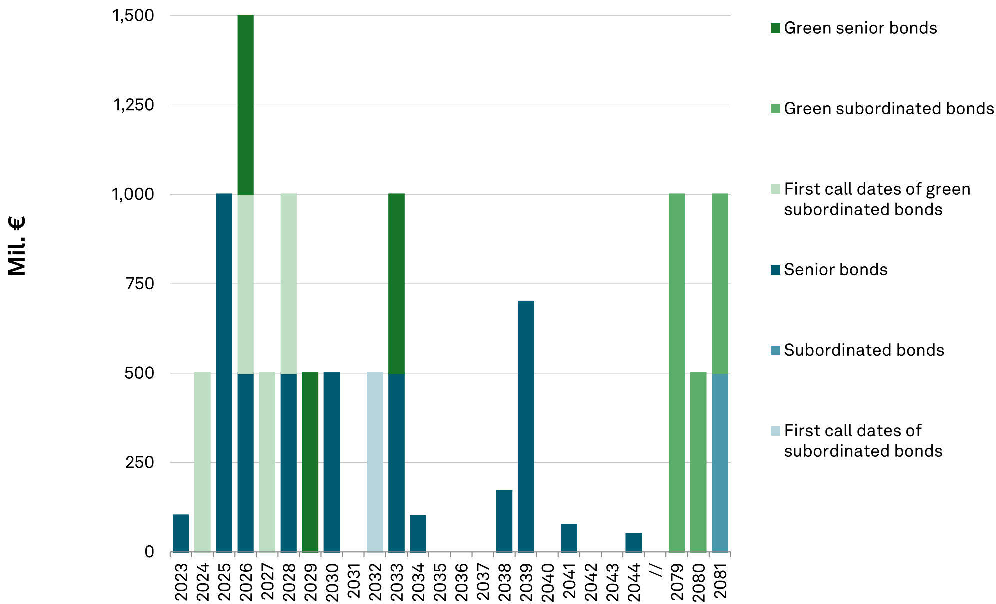
In addition to its cash balances, EnBW had access to about €6.1 billion of marketable securities as of June 30, 2023, to cover pensions and nuclear provisions.

Debt maturities

Chart 7

EnBW debt maturity profile

As of end of 2022



Source: S&P Global Ratings.

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Covenant Analysis

We understand that there are no restrictive covenants in the group's debt documentation.

Environmental, Social, And Governance

ESG factors are an overall neutral consideration in our credit rating analysis of EnBW.

The outbreak of the Russian-Ukraine war, coupled with unusually low French nuclear output in 2022, forced EnBW to increase power generation from its thermal generation fleet, notably brown and hard coal and gas. Ultimately, this added to the company's carbon dioxide intensity, which reached 491 grams per kilowatt hour (g/kWh) from 478 g/kWh the year before. However, despite our view that coal generation is less supportive for a power generator's long-term asset mix, we see the increase in thermal power generation as a short-term and external event of the ongoing energy crisis to preserve security of supply. We do not view this as a risk from a credit perspective because:

- EnBW is forced to retain a relevant share of its existing coal capacity for supply-security purposes. This is decided by the BNetzA along with the transmission system operator, and is independent of EnBW's decision;
- These plants are currently unaffected by windfall taxes, illustrating the government's need to enable the system to respond to energy shortages and extremely high prices for supply-security purposes;
- EnBW will profit from running these plants at current prices, contrasting with the profits on coal generation to 2020 that led the sector to impair most of this capacity.
- More importantly, EnBW announced on March 27, 2023, that it intends to fully shut down its coal fleet by 2028--pending approval from the German government policy framework--and will switch the fuel in locations occupied by coal capacity to new dispatchable power CCGT plants, which would also be built to run on renewable gases.

EnBW has an ambitious target to adhere to a 1.5 degrees Celsius scenario, including its accelerated path to decarbonize its business, which was published on March 27, 2023. The plan entails a path to transform its power-generation mix by reducing carbon by 50% until 2027 and to become carbon neutral by 2035; for this, 4,342 MW of coal capacity needs to be phased out by 2028. We think EnBW has a good track record of delivering its strategy on or ahead of time, which leads us to expect that the company's transformation will position it among the strongest integrated European utilities in the long term.

Government Influence

We consider EnBW to be a government-related entity (GRE). The rating on EnBW reflects our assessment of the group SACP at 'bbb+' and our opinion that there is a moderate likelihood that the State of Baden-Wuerttemberg would provide timely and sufficient extraordinary support to EnBW in the event of financial distress. Our assessment of the likelihood of support results in one notch of uplift to our rating on the group. This is based on our assessment of EnBW's:

- Strong link with Baden-Wuerttemberg, based on the state's 46.75% ownership, which in our view is unlikely to be reduced over the next few years. The state has publicly stated itself to be a long-term investor in the group; and

- Limited role, notwithstanding the group's provision of essential services in Baden-Wuerttemberg. This reflects that the group largely operates in a liberalized energy market and many of its services could be provided by a private-sector company or another GRE.

Issue Ratings - Subordination Risk Analysis

Capital structure

As of June 30, 2023, EnBW's financial debt of €13.5 billion consists mostly of €6.9 billion senior bonds, a private loan of $850 million (€800 million), Swiss franc (CHF) 410 million bonds (€420 million), and €500 million promissory notes. The company has also issued €2.5 billion of hybrid bonds which EnBW reports as debt.

Analytical conclusions

We rate EnBW's senior debt at 'A-', in line with the issuer credit rating.

We arrive at our 'BBB-' issue rating on the group's hybrid debt by notching down from our 'bbb+' SACP on EnBW, because we do not anticipate that the moderate likelihood of extraordinary support from EnBW's shareholders will extend to its hybrid instruments.

In addition, the two-notch difference from the SACP reflects our notching methodology, which calls for deducting:

- One notch for subordination because our long-term issuer credit rating on EnBW is investment grade (that is, higher than 'BB+'); and
- An additional notch for payment flexibility, to reflect that EnBW can indefinitely defer interest payment without triggering an event of default.

Ratings Score Snapshot

Issuer Credit Rating

A-/Stable/A-2

Business risk: Strong

- **Country risk:** Very low
- **Industry risk:** Low
- **Competitive position:** Strong

Financial risk: Significant

- **Cash flow/leverage:** Significant

Anchor: bbb

Modifiers

- **Diversification/portfolio effect:** Neutral (no impact)

- **Capital structure:** Neutral (no impact)
- **Financial policy:** Neutral (no impact)
- **Liquidity:** Adequate (no impact)
- **Management and governance:** Satisfactory (no impact)
- **Comparable rating analysis:** Positive (+1 notch)

Stand-alone credit profile : bbb+

- **Likelihood of government support:** Moderate (+1 notch from SACP)

Related Criteria

- General Criteria: Hybrid Capital: Methodology And Assumptions, March 2, 2022
- General Criteria: Environmental, Social, And Governance Principles In Credit Ratings, Oct. 10, 2021
- General Criteria: Group Rating Methodology, July 1, 2019
- Criteria | Corporates | General: Corporate Methodology: Ratios And Adjustments, April 1, 2019
- Criteria | Corporates | General: Reflecting Subordination Risk In Corporate Issue Ratings, March 28, 2018
- General Criteria: Methodology For Linking Long-Term And Short-Term Ratings, April 7, 2017
- General Criteria: Rating Government-Related Entities: Methodology And Assumptions, March 25, 2015
- Criteria | Corporates | General: Methodology And Assumptions: Liquidity Descriptors For Global Corporate Issuers, Dec. 16, 2014
- Criteria | Corporates | Industrials: Key Credit Factors For The Unregulated Power And Gas Industry, March 28, 2014
- General Criteria: Methodology: Industry Risk, Nov. 19, 2013
- General Criteria: Country Risk Assessment Methodology And Assumptions, Nov. 19, 2013
- Criteria | Corporates | Utilities: Key Credit Factors For The Regulated Utilities Industry, Nov. 19, 2013
- Criteria | Corporates | General: Corporate Methodology, Nov. 19, 2013
- General Criteria: Methodology: Management And Governance Credit Factors For Corporate Entities, Nov. 13, 2012
- General Criteria: Principles Of Credit Ratings, Feb. 16, 2011
- General Criteria: Stand-Alone Credit Profiles: One Component Of A Rating, Oct. 1, 2010

Related Research

- Wind Giant Orsted Long-Term Ratings Placed On CreditWatch Negative On Substantial Charges, Nov. 2, 2023
- Utilities Handbook 2023: Western Europe Regulated Power, Oct. 18, 2023
- Derivative Hedge Accounting: Cutting Through The Clutter, Oct. 12, 2023

- Utilities Handbook 2023: Western Europe Regulated Gas, Sept. 20, 2023
- Germany's Green Energy Ambitions Spark A Transformative Decade For Utilities, Sept. 14, 2023
- Europe's Utilities Face A Power Price Cliff From 2026, June 22, 2023

Business And Financial Risk Matrix

	Financial Risk Profile					
Business Risk Profile	Minimal	Modest	Intermediate	**Significant**	Aggressive	Highly leveraged
Excellent	aaa/aa+	aa	a+/a	a-	bbb	bbb-/bb+
Strong	aa/aa-	a+/a	a-/bbb+	**bbb**	bb+	bb
Satisfactory	a/a-	bbb+	bbb/bbb-	bbb-/bb+	bb	b+
Fair	bbb/bbb-	bbb-	bb+	bb	bb-	b
Weak	bb+	bb+	bb	bb-	b+	b/b-
Vulnerable	bb-	bb-	bb-/b+	b+	b	b-

Ratings Detail (As Of November 15, 2023)*

EnBW Energie Baden-Wuerttemberg AG	
Issuer Credit Rating	A-/Stable/A-2
Junior Subordinated	BBB-
Issuer Credit Ratings History	
30-Mar-2023	A-/Stable/A-2
15-Sep-2022	A-/Negative/A-2
20-Jun-2017	A-/Stable/A-2

*Unless otherwise noted, all ratings in this report are global scale ratings. S&P Global Ratings' credit ratings on the global scale are comparable across countries. S&P Global Ratings' credit ratings on a national scale are relative to obligors or obligations within that specific country. Issue and debt ratings could include debt guaranteed by another entity, and rated debt that an entity guarantees.

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