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EnBW Energie Baden-Wuerttemberg AG

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EnBW Energie Baden-Wuerttemberg AG

Credit Highlights

Issuer Credit Rating
A-/Stable/A-2

Overview

Key strengths	Key risks
Strong EBITDA base (S&P Global Ratings' forecast of about €4.6 billion as of 2024), with a diversified and integrated position along the energy supply chain; demonstrated resilience across different economic and geopolitical cycles.	Our estimate of a 25%-30% share of funds from operations (FFO) related to minority-stake partners over the medium term, which increases cash-flow leakage.
High share of EBITDA (42% on average) from regulated operations under strong regulation, and an expanding share of renewable generation (25%), which provides stability and predictability to earnings and cash flow.	Our view, that EnBW's ambitious investment plan will pressure credit metrics to levels below our expectations for the current rating temporarily. Executing the plan will increase its dependence on external capital.
An investment plan oriented toward low-risk regulated networks and long-term contracted renewable generation, which we believe carries moderate execution risk and supports long-term earnings visibility.	Significant exposure to lower commodity prices, particularly after 2026.
A financial policy, including shareholder support, that we see as geared toward protecting the current 'A-' rating.	An above-average carbon footprint in the short term because of EnBW's existing coal-generation fleet, which nevertheless is profitable and is being gradually switched to gas in 2026-2028.
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.	

Under its 2024-2030 strategic plan, EnBW targets a long-term business mix with 70% of EBITDA from regulated grid operations and mostly long-term contracted renewable power generation, which underpins our 'A-' rating. EnBW's ambitious plan aims to invest €40 billion on a gross basis until 2030 (€22 billion net of partners contributions and asset sales), of which 60% will be allocated to regulated grid operations, 30% to renewables generation, and the rest to, among others, its smart infrastructure for customers' business (mainly power and gas supply, e-mobility and telecom). EnBW targets a consolidated adjusted EBITDA base of €5.5 billion-€6.3 billion by 2030. We believe the investments will help EnBW to preserve a business mix dominated by regulated transmission and distribution activities (mostly power) and long-term contracted renewables generation, which we believe provide stable and predictable cash flows over the long term.

However, EnBW's ambitious and frontloaded €40 billion 2024-2030 investment plan will consume most of its financial headroom over 2024 and 2025. We expect EnBW's investments will increase to about €8.3 billion on a gross basis per year in 2024 and 2025, up from an average of €4.0 billion in 2022 and 2023. While we expect minority-stake partners will contribute about 45% of capital expenditure (capex) through 2030, resulting in net capex averaging €5.5 billion over 2024 and 2025, we expect EnBW's proportionate FFO to debt will decline to slightly below 18% in 2024 and 2025. As contracts hedged at favorable 2022 and 2023 prices expire in 2026, EnBW's exposure to power and gas price fluctuations will also increase, since new contracts will likely close at lower prices. In our opinion, this leaves EnBW with minimal headroom for financial underperformance at the current 'A-' rating.

The pressure on financial metrics is mitigated by our expectation that FFO to debt will improve by 2026 and that EnBW will adhere to a financial policy consistent with the rating. We forecast its FFO to debt will recover to above 18% by 2026, after a temporary dip in 2024 and 2025. This is supported by our assumption that He Dreiht (a 960MW offshore wind power plant) will start full-year contributions of about €110 million to EBITDA (51% ownership) from 2026. We also think the company's regulatory asset base will steadily increase, resulting in EBITDA from regulated activities growing by 25% by 2026 (from a 2023 base). However, this recovery in credit metrics depends heavily on EnBW receiving significant external capital from partial asset sales and partners' capital contributions by 2026. We believe this will increase the company's reliance on external parties to execute its strategic plan.

The 'A-' rating rests on our assumption that if EnBW's proportionate FFO to debt was not on track to recover to 18% or more, management would take remedial steps such as hybrid issuance (current hybrid stock amounts to €2.5 billion, translating into about half of the company's hybrid capacity utilization), capex reduction or deferral, and further asset disposals. We also note EnBW's favorable track record of shareholder support, including dividend reductions and capital increases.

As EnBW continues to pursue a risk-sharing strategy, divesting minority stakes in high-quality assets, we will monitor the quality of its earnings' mix. We believe that there is a risk of dilution of EnBW's earnings quality because the company has sold equity stakes mostly at high-quality assets, such as TransnetBW, He Dreiht, and other long-term contracted power generation assets. We estimate that, on average, the share of regulated activities and long-term contracted renewable generation will be 65%-67% when accounting for the dilution of minority stakes at the EBITDA level, compared to 69%-71% on a consolidated basis (see chart 1). In our opinion, this is not yet material enough to lead us to raise our credit metrics expectations for the 'A-' rating, but we are monitoring this trend because we foresee potential for further dilution as the minorities' shares of EnBW's regulated and renewable earnings increase, impacting, in particular, the quality of FFO.

Chart 1

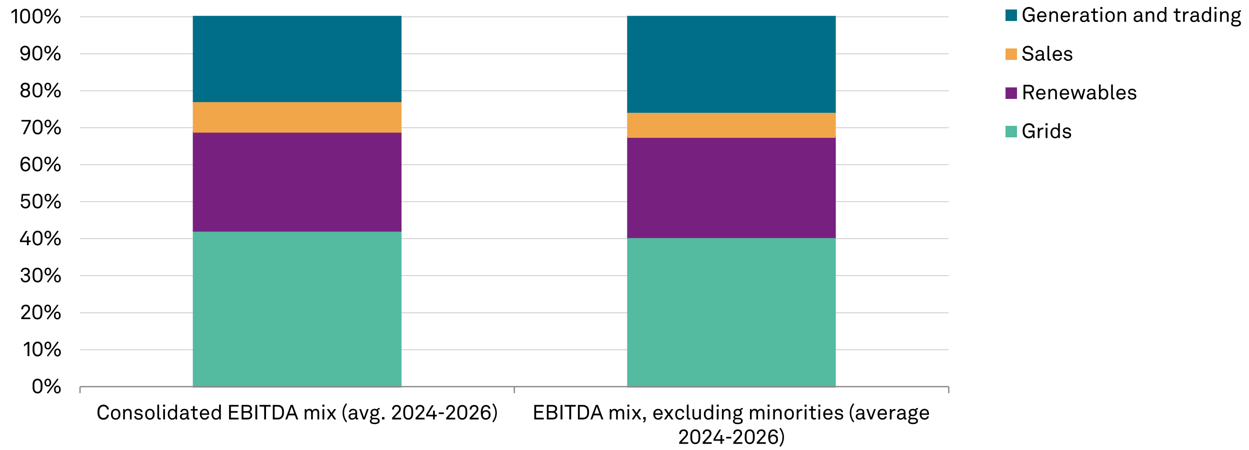

*Chart excludes consolidation effects in EBITDA. Source: S&P Global Ratings.

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We expect EnBW's position as a diversified and integrated player throughout the energy supply chain will continue enabling the group to deliver a resilient financial performance. We base our opinion on its track record across different economic and geopolitical cycles. For instance, the negative effects of absorbing BMP Greengas' restructuring amid gas price volatility in 2022 (around €250 million) and a €400 million-€500 million (our estimate) home battery system replacement at its Senec subsidiary during 2023 were mitigated by a 78% EBITDA increase in EnBW's power generation and trading activities due to favorable hedges and renewable capacity additions. It was also helped by a 68% increase in regulated EBITDA due to EnBW recovering grid-reserve redispatch costs from 2021 and 2022, along with higher allowed revenues from commissioning new grid infrastructure. Therefore, in 2023 EnBW was able to post FFO to debt of 40.2% on a consolidated basis, and 32.8% on a proportionate basis, in line with our expectations.

Outlook

We estimate the company will frontload around 60% of its €40 billion gross investments, planned from 2024 to 2030, in 2024-2026. This will burden its balance sheet, even if all planned asset disposals and partners' contributions are executed. However, the stable outlook reflects our view that:

- FFO to debt will recover to above 18% sustainably from 2026, after dropping in 2024 and 2025, thanks to investments yielding returns and capex moderation.
- We assume that the company will receive contributions from partners according to its investment plan, although we view EnBW as increasingly dependent on these to execute its strategic plan.
- We regard EnBW's financial policy as committed to the 'A-' rating and we expect it would implement remedial measures such as hybrid issuance, capex deferral, or dividend reduction if credit metrics do not sufficiently recover by 2026.

Downside scenario

We believe that EnBW's financial metrics remain exposed to commodity price and volume fluctuations, particularly to power prices beyond 2026, as contracts closed in 2022 and the favorable conditions of 2023 are fading. As such, an abrupt decline in power prices to below €70 per megawatt hour (/MWh) for a prolonged period, coupled with high capex, could pressure the rating as it would likely result on FFO to debt (proportionate) of below 18%, all else being equal.

EnBW being unable to monetize its projects in line with our expectations would pressure the rating, as we believe its credit metric recovery relies on selling projects and partners' capital contributions, if the company is to adhere to its investments as planned.

Upside scenario

We see an upgrade as unlikely because we expect EnBW will exhaust all its financial headroom under the current rating, given its intensive capex program. Also, we believe the partial sales of high-quality assets--such as TransnetBW, He-Dreiht, and Hohe See--slightly dilute the quality of its cash flows.

Our Base-Case Scenario

Assumptions

- Gradual normalization of the business mix, with grids and renewables representing about 70% of consolidated EBITDA (somewhat less on a proportionate basis).
- No further windfall tax on EnBW's inframarginal power generation. The electricity and gas price breaks expired on March 31, 2024.
- Gross capex of about €7.1 billion in 2024, €9.2 billion in 2025, and €7.6 billion in 2026.
- Dividends from equity investments of €150 million per year, which we add to EBITDA.

- Dividend distributions, including to minority shareholders, of about €780 million in 2024, €765 million in 2025, and €800 million in 2026.
- Collaterals received for exchange-based and over-the-counter trading business to partially flow back in 2024, via working capital.
- Hybrid stock of €2.5 billion as end-2024. We assume EnBW will use its hybrid capacity to protect its credit metrics as it executes on capex.
- 100% of power generation hedged for 2024, 80%-90% for 2025, and close to 50% for 2026.
- Realized power prices of about €90/MWh in 2025 and 2026 for unhedged generation. Clean dark spreads of €4.3/MWh in 2024, €7.0-€6.0/MWh in 2025, €15.6/MWh in 2026. Clean lignite spreads of €12.0/MWh in 2024, €15.62/MWh in 2025, and €6.8/MWh in 2026.
- Average cost of funding of 2.6%-2.8%. New debt issued at about 4.0%.
- Proceeds of €4.5 billion from asset sales in 2024-2026.
- No balance relating to the German Renewable Energies Act or margining cash as part of the cash available to the company for debt repayment.
- EnBW recovering re-dispatch and grid reserves expenses incurred in 2022 mostly by 2025.

Key Metrics

Table 1

EnBW Energie Baden-Wuerttemberg AG--Forecast summary

Industry sector: Energy									
	--Fiscal year ended Dec. 31--								
(Mil. €)	**2020a**	**2021a**	**2022a**	**2023a**	**2024e**	**2025f**	**2026f**	**2027f**	**2028f**
Revenue	19,694	32,075	55,935	44,364	38,968	38,096	37,453	37,453	37,453
EBITDA (reported)	2,716	2,761	3,086	5,894	4,619	4,953	4,861	5,236	5,610
Plus/(less): Other	197	625	1,657	132	(20)	(54)	65	65	65
EBITDA	2,912	3,385	4,743	6,026	4,599	4,899	4,926	5,300	5,675
Less: Cash interest paid	(212)	(300)	(325)	(484)	(420)	(449)	(461)	(468)	(477)
Less: Cash taxes paid	(208)	(201)	(228)	(907)	(690)	(537)	(421)	(421)	(421)
Funds from operations (FFO)	2,493	2,884	4,191	4,635	3,489	3,913	4,044	4,411	4,777
Cash flow from operations (CFO)	1,189	7,638	1,883	907	3,315	3,581	3,321	3,923	4,288
Free operating cash flow (FOCF)	(831)	5,412	(731)	(3,271)	(3,833)	(5,617)	(4,127)	(3,526)	(3,160)
Discretionary cash flow (DCF)	(1,264)	4,827	(1,151)	(3,708)	(4,631)	(6,404)	(4,962)	(4,360)	(3,995)
Debt (reported)	9,613	11,250	12,891	16,468	17,453	17,816	18,289	18,289	18,720
Plus: Lease liabilities debt	886	884	913	986	1,177	1,190	1,170	1,181	1,193
Plus: Pension and other postretirement debt	2,734	2,327	1,402	1,803	1,393	1,456	1,502	1,502	1,502
Less: Accessible cash and liquid investments	(1,151)	(5,898)	(5,498)	(8,093)	(4,018)	(1,986)	(3,274)	(1,338)	(200)
Plus/(less): Other	3	199	36	372	(267)	(563)	(998)	(1,030)	(966)
Debt	12,085	8,763	9,745	11,536	15,738	17,912	16,689	18,604	20,249
Cash and short-term investments (reported)	1,253	6,653	7,824	5,995	3,803	1,765	3,074	1,138	(0)
Adjusted ratios									
Debt/EBITDA (x)	4.1	2.6	2.1	1.9	3.4	3.7	3.4	3.5	3.6

Table 1

EnBW Energie Baden-Wuerttemberg AG--Forecast summary (cont.)

Industry sector: Energy

	--Fiscal year ended Dec. 31--								
(Mil. €)	**2020a**	**2021a**	**2022a**	**2023a**	**2024e**	**2025f**	**2026f**	**2027f**	**2028f**
FFO/debt (%)	20.6	32.9	43.0	40.2	22.2	21.8	24.2	23.7	23.6
FOCF/debt (%)	(6.9)	61.8	(7.5)	(28.4)	(24.4)	(31.4)	(24.7)	(19.0)	(15.6)

All figures include S&P Global Ratings adjustments' unless stated as reported. a--Actual. e--Estimate. f--Forecast.

EnBW's achieved prices will progressively decline as contracts that closed under favorable 2022 and 2023 conditions expire. The company will feel the effects of this exposure in 2025 but more so in 2026. We expect FFO to debt will recover to above 18% by 2026 so long as power prices in Germany remain above €70/MWh, all else being equal. If power prices decline below this threshold there would be some uncertainty as to how EnBW's dispatchable power generation segment could compensate for such drop in the last few years of the decade. This is because we expect load factors for coal and lignite capacity will decline until such plants are either retired, sold, or converted to gas. We would review how power price trends could result in EnBW actively implementing remedial measures to preserve proportionate FFO to debt above 18%.

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 the traditional EnBW brand, the group serves its German household and industrial customers under the Yello and Naturenergie labels, targeting different market segments. EnBW aims to continue positioning its business mix toward less volatile renewable generation and stable grid operations, with both segments representing 70% of EBITDA by 2030. 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 its operations focus on the State of Baden-Wuerttemberg, a center of manufacturing and engineering. The group is also the majority shareholder of Stadtwerke Duesseldorf AG (not rated). In addition, EnBW has operations in the U.K., France, Sweden, Denmark, the Czech Republic, Austria, Switzerland, and Turkey.

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

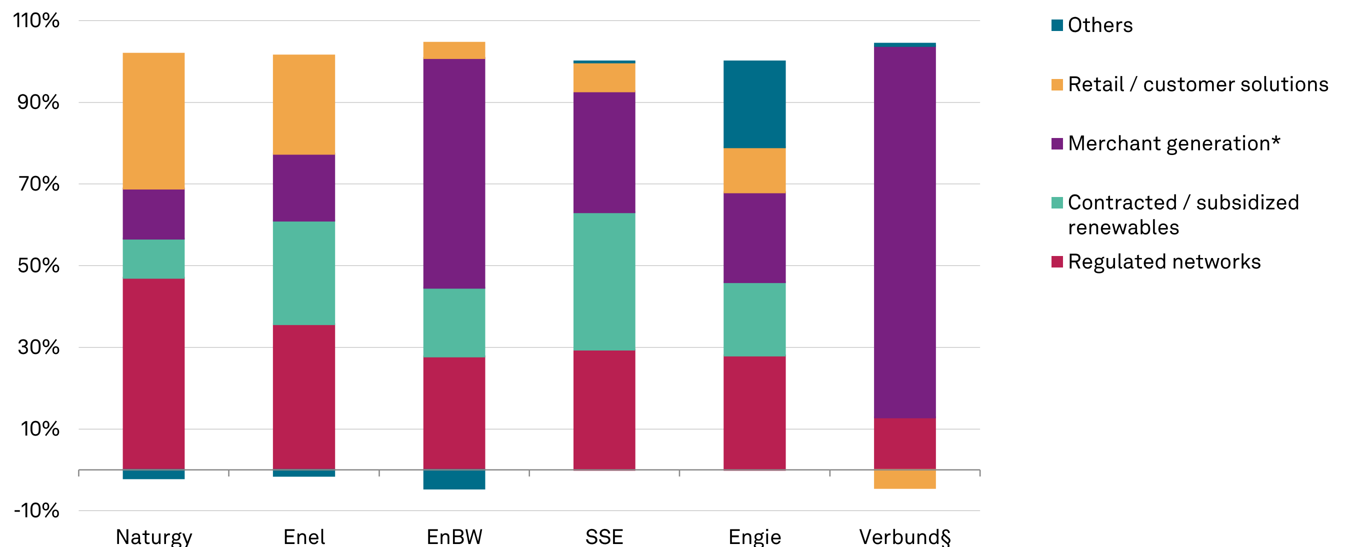
We compare EnBW with other integrated European utilities--companies with exposure to power generation, gas and electricity distribution, and the transmission and commercialization of power and gas.

We consider SSE PLC to be one of EnBW's closest peers because of its integrated nature and similar EBITDA mix (see chart 2). The share of EBITDA coming from regulated activities has declined for both entities to 30% as power and gas prices have boosted generation and trading EBITDA. That said, we expect this share to settle at about 40%-45% as power and gas prices normalize. Both entities' regulated activities, in the U.K. and Germany, respectively, benefit from operating under two of the most supportive regulatory frameworks in Western Europe. Both entities have similarly ambitious renewable generation pipelines, with SSE targeting to increase its gross renewable capacity to 8GW by 2026, and EnBW to 10.0GW-11.5GW by 2030 (close to 7GW by 2026 once the He Dreiht offshore wind farm [900MW] is commissioned in 2025). We assess both entities' stand-alone credit profiles at 'bbb+' but we rate EnBW 'A-', one notch higher than SSE, due to the moderate likelihood of extraordinary government support from the State of Baden Württemberg.

Chart 2

Share of regulated EBITDA in 2023

EBITDA split by operations



*Merchant generation includes mostly thermal generation which usually isn't contracted, but for some issuers a portion is. §For Verbund, we have considered the renewable generation and Hydro Generation in Merchant Generation Segment. For SSE, the data is as of March 31, 2024. Source: S&P Global Ratings.

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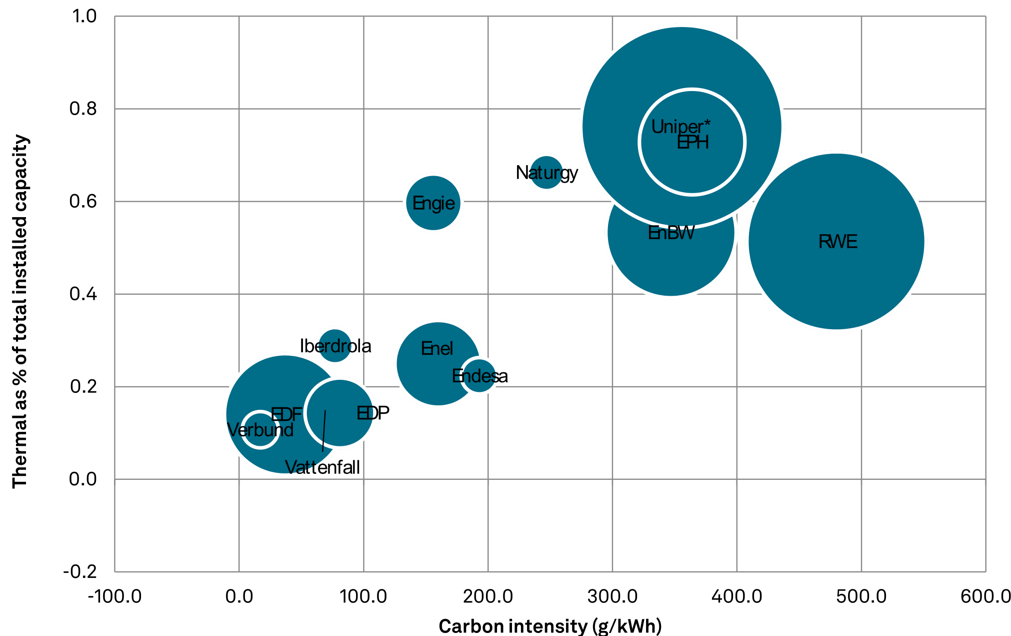
German power operators, including EnBW, remain exposed to coal power generation given security-of-supply considerations. We think that larger CO_2 footprints could reveal some business vulnerabilities as the energy transition accelerates. In the meantime, the transition is forcing operators to undertake sizeable investments to transform their energy mix, a disadvantage compared to operators that already own a large share of low-cost renewable generation capacity, such as Iberdrola. However, we note positively that EnBW has a clear coal-exit plan by 2028, significantly ahead of the mandatory 2038 coal phase out. This is the earliest date of any German coal power generator (Uniper is

2029, RWE [not rated] is 2030, and EPH has not defined a timeline).

Chart 3

Power generators are likely to decarbonize their generation mix by 2030

German operators' CO2 footprint reflect stickiness of coal generation



*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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One of EnBW's key advantages is its integrated nature, with supply activities acting as a natural hedge and trading activities providing arbitrage opportunities to sell its energy. We also believe that a combination of renewable generation with efficient dispatchable generation, which EnBW aims to achieve by converting its coal plants to gas, will be profitable as the penetration of renewable power generation increases market volatility.

Business Risk

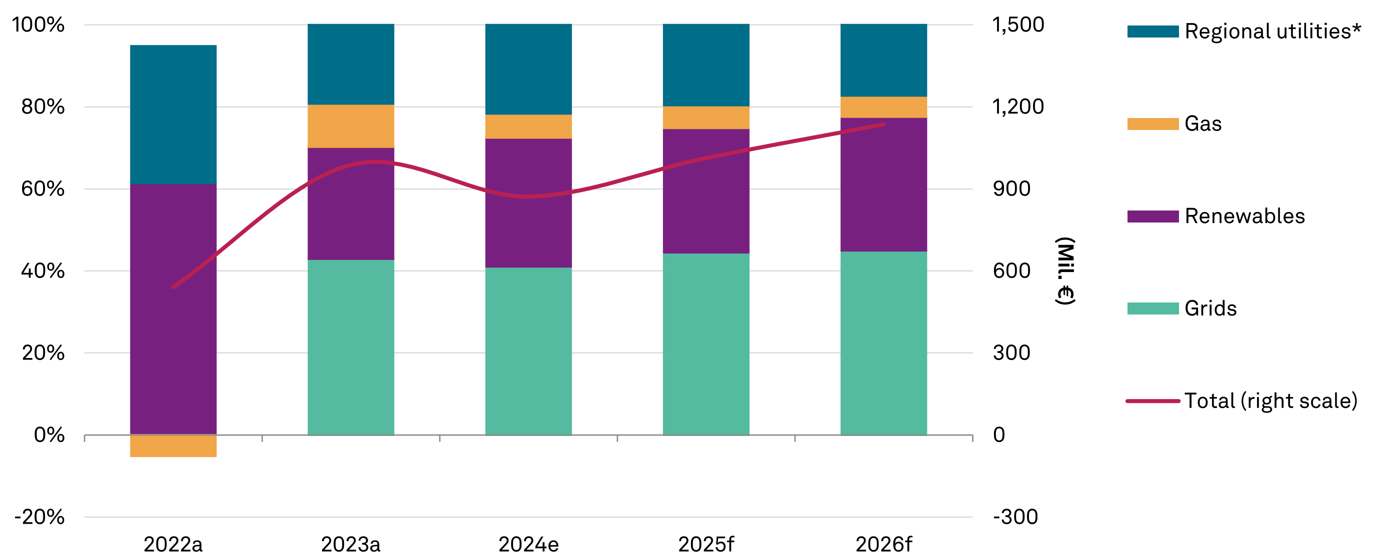
We see EnBW's regulated grids and secondarily its renewable business as its most supportive segments, and important rating pillars. As such, we view its strong business risk profile as consistent with a mix of 40%-50% of EBITDA coming from grids and 25%-30% from renewables. Our base case is that EnBW's regulated grids and renewables will represent about 40% and 27% of EBITDA, on average, during 2024-2026. We also anticipate EnBW's investments will focus on low-risk regulated power and gas grids and long-term contracted renewables, thereby creating stable and predictable long-term cash flow.

However, most of its minorities are present in high-quality assets. Because EnBW's minority participations are concentrated in its low-risk assets--Transnet BW primarily, and also offshore wind parks such as Hohe See, Albatros, Baltic 2, and He Dreiht (see chart 4)--we will monitor the company's ability to preserve cash flow quality consistent with the strength of its current business mix, as it continues to divest minority interests to partners. For instance, we estimate the minorities' participation in EnBW's consolidated EBITDA will be about 25% by 2026, but 30% of FFO, implying greater dilution in the quality of cash flows compared to earnings.

Chart 4

Split of FFO owed to minorities

A larger proportion of low risk cash flows are leaving the company



*Regional utilities have a mix of supply, generation, and grids. a--Actual. e--Estimate. f--Forecast. Source: S&P Global Ratings.

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A factor in our analysis is our expectation that EnBW will continue investing such that its earnings mix is preserved over the long term, even after accounting for the effect of minorities. We expect unallocated capex will follow the same investment pattern, and for it to be mostly allocated to regulated grids or renewables.

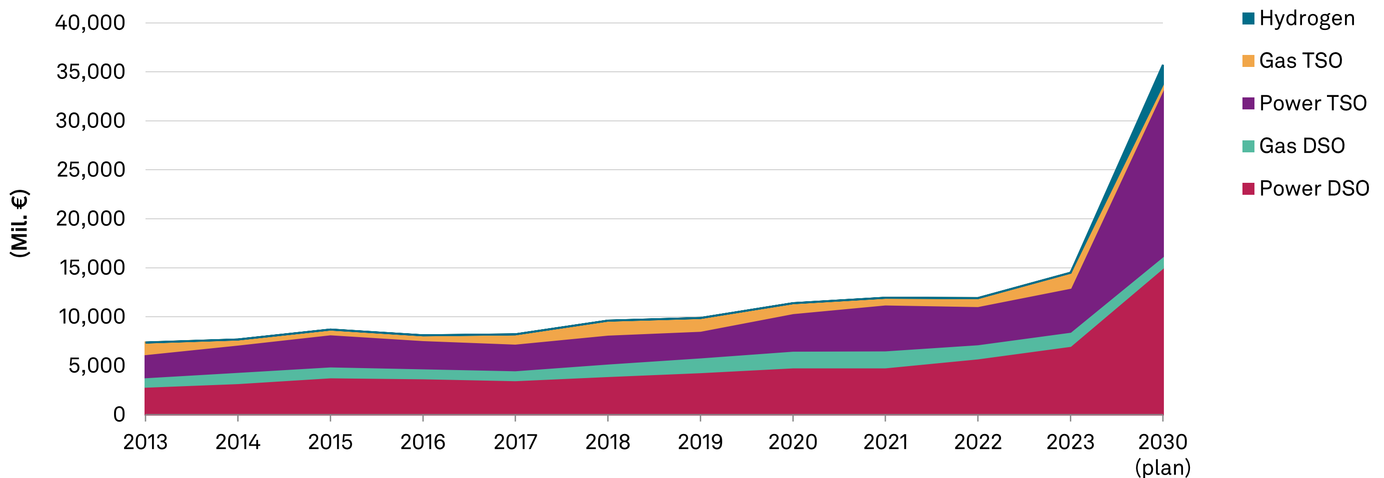
We view the German regulatory framework as one of the most supportive in Western Europe and one that enhances EnBW's credit quality. The regulator (Bundesnetzagentur; BnetzA) has a solid track record of stability and the five-year regulatory period has well-defined and transparent tariff-setting procedures. The framework also enables EnBW to fully recover its costs--as long as the regulator deems it efficient--and mitigates the effects of volume and commodity risks via regulatory account mechanisms, albeit with some time lag.

BNetzA has recently launched consultations to adapt the framework to the needs of the energy transition while remaining attractive to private capital. Its evolution will be central to EnBW's earnings visibility because of the company's presence across regulated power and gas transmission and distribution grids, all affected by the rapidly evolving energy mix in Germany and the rest of Europe. This trend affects EnBW's segments in various ways:

Power transmission: We forecast EnBW's 50.1%-owned subsidiary TransnetBW will represent most regulated capex, contributing to about 50% of investments through 2030 (and 30% of total investments). The size of capex TransnetBW needs to invest to adapt the German transmission grid to the evolving power-energy mix has led EnBW to sell 49.9% of its shares to the German development bank KfW (24.9%) and a consortium of German banks. We expect all these minorities will contribute their pro rata shares to our estimate of €12 billion gross investments through 2030 for TransnetBW. These investments translate into capex to EBITDA of about 2.0x-2.5x on average per year until 2030. Although slightly below Tennet or Eurogrid, at 3.0x, this is still significantly higher than other European power TSOs (typically 0.8x to 1.5x).

The key challenge for power TSOs in Germany is financing investment of tens of billions in the short term for infrastructure that will generate returns over the very long-term (typically a period of over 40 years). Power TSOs also face financing increasingly volatile costs for system services such as power redispatch, which, while covered by regulation, presents a mismatch in timing between incurring and recovering such costs. We continue to view the German regulatory framework as supportive, despite these challenges, based on our expectation that regulation will adapt to these challenges from the regulatory period starting in 2028.

Chart 5



Sources: S&P Global Ratings, BNetzA.

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Gas Transmission: EnBW's subsidiaries ONTRAS and TerranetsBW are gas transmission system operators. We expect gas will decline in relevance, along with investment needs for natural gas infrastructure, as demand wanes. BNetzA has proposed that operators can amortize all existing and future investments until 2045, removing the risk of stranded assets, which we view positively. Given the minimal growth prospects for gas transmission infrastructure, the ramp up of the hydrogen economy is key to gas TSOs preserving their long-term relevance in the energy mix.

The German government approved the amended Energy Industry Act on April 12, 2024, providing clarity on a regulatory framework for new hydrogen grids and how an amortization account managed by KfW will finance tariff deficits, temporarily, assuming hydrogen demand picks up. EnBW intends to invest €1 billion in the German hydrogen core network until 2030 through both of its gas TSO subsidiaries. However, we understand operators may bear up to 16% of unamortized investments if the ramp-up is not successful by 2039, which could increase to 24% if the ramp-up is declared a failure in 2055. Even though Germany is more advanced in developing a hydrogen regulatory framework than most Western European countries, we believe that this translates into higher risks than those related to the natural gas and power grids that operate under the existing German regulated framework, as residual risk will linger over the long term.

Power DSO: We estimate EnBW's investments in its distribution networks at about 25% of its regulated capex through 2030, with growth capex mostly used to connect decentralized generation (solar PV and onshore wind) in Baden-Württemberg to its mid- and low-voltage grid. It will also use capex to adapt the grid to more electric cars and heating systems.

BNetzA's consultation process suggests some elements of the regulation could evolve; the regulatory framework might reduce to three years (from five) to mitigate operating expenditure volatility by allowing earlier recognition of costs. The regulator has also proposed simplifying the costs that operators cannot influence and which are currently subject to intensive auditing and bureaucratic processes. Other proposed changes include the incorporation of efficiency tools; rewards for those operators more adapted to the energy transition; and a potential revision of sector productivity factors, which translates into a higher price cap so long as it remains below CPI. Generally, we expect the changes will improve investment conditions for operators at the distribution level.

Gas DSO: We expect investments in gas DSO activities to remain at maintenance levels, and for EnBW's asset base to gradually contract as its grid is amortized and decommissioned over the next two decades.

Most of EnBW's new renewable capacity will come from offshore wind projects, which are subject to higher execution risks than onshore or solar. Of the close to 5.5GW of incremental gross renewable capacity that EnBW intends to install by 2030, we estimate that nearly 4GW will come from offshore wind in Germany and the U.K. We understand the quality of long-term contracted offshore capacity is mostly supportive, although we acknowledge that its execution is subject to higher risks than solar PV, or onshore wind. This is because of its higher capex intensity, which exacerbates inflationary pressures, project-management complexity, and in certain cases seabed or other sunk costs. Supply-chain bottlenecks can also mean that developers are sometimes forced to commit capex before making a final investment decision to get projects finished on time. On the other hand, we understand that turbine development has evolved more favorably than anticipated, which has boded well for budgeting for projects such as He Dreiht.

EnBW will be able to compensate for inflationary effects on component costs by installing 15MW turbines instead of

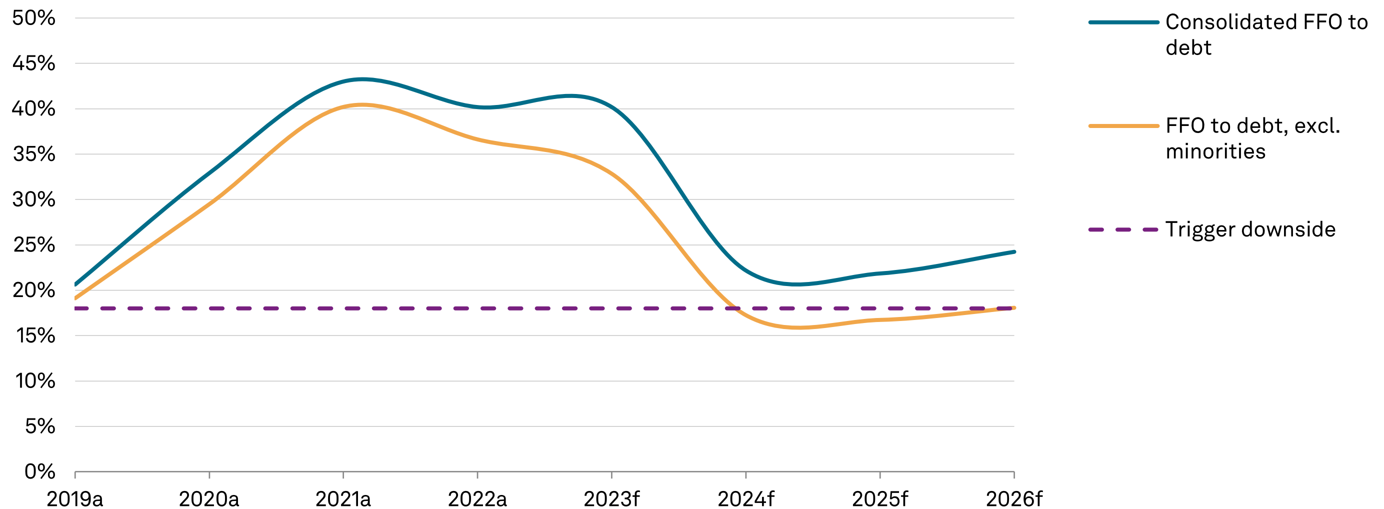
the initially budgeted 8MW. Also, EnBW shares project risks with creditworthy partners, such as Allianz Capital Partners (a subsidiary of Allianz SE), AIP Management, and Norges Bank, who together own and contribute 49.9% of the equity needed to develop this project. At Mona and Morgan, EnBW has partnered with bp (A-/Stable/A-2). We understand that most of both projects' capacity will operate under CfD schemes or long-term pay-as-produced PPA contracts, which we expect will operate in timeframes commensurate with industry standards.

EnBW aims to replace three coal-fired plants to gas, which will reduce its carbon footprint and increase its competitiveness. 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 the replacement of three coal-fired power plants (Heilbronn, Münster and Altbach) with new dispatchable power CCGT plants running on natural gas at first, then climate neutral gases in a second stage, supports its business strength over the longer term. We understand that these plants will be integrated into EnBW's district heating offering, which increases the profitability of such projects irrespective of the evolution of the German Kraftwerkstrategie, which is expected to provide a support mechanism to CCGT plants running on renewable gases.

Financial Risk

We benchmark our rating on EnBW at FFO to debt of 18% on proportionate basis, which excludes both the share of FFO that corresponds to minorities, and the share of debt that corresponds to EnBW's partners in said affiliates. We view this ratio as a good representation of cash flow available for EnBW to repay its debt. We expect selling minority shares to spread project development risk will remain central to EnBW's expansion strategy. Positively, as long as the partners are commensurately strong, the strategy reduces single-project concentration risk and the financial burden on EnBW. However, it will further increase cash-flow leakage to the extent the projects or subsidiaries remain fully consolidated but carry proportionally less debt than the rest of the group. We forecast this approach will result in nearly one quarter of EBITDA and about one third of FFO corresponding to minority shareholders by 2026, leading to the spread between consolidated and proportionate FFO widening to about 600 bps by 2026, versus 150 bps in 2019 (see chart 6).

Chart 6



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

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EnBW's capex intensity will result in negative cash flow generation in 2024 and 2025, and will make the company dependent on external funding. We forecast EnBW's capex increase will result in negative cash flow available for debt repayment of €3.0 billion-€3.4 billion in 2024, and €2.3 billion-€2.5 billion in 2025. This will lead to FFO to debt, on proportionate basis, of about 17% in both years. We expect this ratio will recover to above 18% no later than 2026 as several projects, including He Dreiht, become operational, but most importantly because EnBW plans to continue raising capital from partial asset disposals, and partner's equity contributions to ongoing projects. In our view, EnBW's capacity to carry out its investments according to its strategic plan--in terms of timing and amount spent--will depend heavily on its ability to monetize its projects and assets as budgeted. While we believe that the group has some discretion in deciding which new projects to invest in, it has less flexibility for projects for which partners have already committed capital. As such, one of the key elements we will monitor over the medium term is that EnBW realizes its projects on time and on budget, and is able to raise capital to sufficiently protect its balance sheet.

We benchmark EnBW's metrics against our medial volatility table. EnBW derives more than one third (40%-45% on average in our base case) of its cash flows from purely regulated activities operating in the German regulatory framework, which we assess as having a strong regulatory advantage.

Table 2

EnBW Energie Baden-Wuerttemberg AG--Financial summary

Industry sector: Energy

	--Fiscal year ended Dec. 31--				
	2023	**2022**	**2021**	**2020**	**2019**
(Mil. €)					
Revenue	44,364.2	55,935.3	32,074.7	19,694.3	18,765.0
EBITDA	6,026.2	4,743.3	3,385.0	2,912.4	2,303.0
Funds from operations (FFO)	4,635.4	4,190.8	2,884.0	2,492.8	1,689.8
Interest expense	880.1	406.8	312.5	372.3	520.8
Cash interest paid	484.1	324.6	300.4	211.8	204.1
Cash flow from operations	907.4	1,882.8	7,637.7	1,188.7	789.4
Capital expenditure	4,178.1	2,613.8	2,225.3	2,020.1	1,920.6
Free operating cash flow (FOCF)	(3,270.7)	(731)	5,412.4	(831.4)	(1,131.2)
Discretionary cash flow (DCF)	(3,708.1)	(1,150.7)	4,827.0	(1,264.2)	(1,485.7)
Cash and short-term investments	5,630.0	5,971.6	5,215.6	947.8	1,105.9
Gross available cash	8,093.3	5,497.6	5,897.5	1,151.4	1,158.9
Debt	11,535.6	9,744.8	8,763.5	12,085.2	10,735.7
Equity	17,098.6	14,013.7	9,742.3	8,996.8	8,684.4
Adjusted ratios					
EBITDA margin (%)	13.6	8.5	10.6	14.8	12.3
Return on capital (%)	18.2	15.9	10.3	7.6	5.1
EBITDA interest coverage (x)	6.8	11.7	10.8	7.8	4.4
FFO cash interest coverage (x)	10.6	13.9	10.6	12.8	9.3
Debt/EBITDA (x)	1.9	2.1	2.6	4.1	4.7
FFO/debt (%)	40.2	43.0	32.9	20.6	15.7
Cash flow from operations/debt (%)	7.9	19.3	87.2	9.8	7.4
FOCF/debt (%)	(28.4)	(7.5)	61.8	(6.9)	(10.5)
DCF/debt (%)	(32.1)	(11.8)	55.1	(10.5)	(13.8)

Table 3

EnBW Energie Baden-Wuerttemberg AG--Reconciliation of reported amounts with S&P Global Ratings'-adjusted amounts

	--Fiscal year ended Dec. 31, 2023--									
EnBW Energie Baden-Wuerttemberg AG reported amounts (mil. €)										
	Debt	**Shareholders' equity**	**Revenue**	**EBITDA**	**Operating income**	**Interest expense**	**S&P Global Ratings' adjusted EBITDA**	**Cash flow from operations**	**Dividends**	**Capital expenditure**
	16,467.7	9,308.7	44,430.7	5,894.0	3,341.3	520.1	6,026.2	899.7	417.1	4,403.8
S&P Global Ratings' adjustments										
Cash taxes paid	--	--	--	--	--	--	(906.7)	--	--	--
Cash interest paid	--	--	--	--	--	--	(421.2)	--	--	--

Table 3

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

Reported lease liabilities	986.4	--	--	--	--	--	--	--	--	--
Intermediate hybrids reported as debt	(1,245.6)	1,245.6	--	--	--	(20.3)	20.3	20.3	20.3	--
Postretirement benefit obligations/deferred compensation	1,802.8	--	--	0.5	0.5	192.7	--	--	--	--
Accessible cash and liquid investments	(8,093.3)	--	--	--	--	--	--	--	--	--
Capitalized interest	--	--	--	--	--	83.2	(83.2)	(83.2)	--	(83.2)
Capitalized development costs	--	--	--	(38)	(19.2)	--	--	(38)	--	(38)
Dividends received from equity investments	--	--	--	198.1	--	--	--	--	--	--
Asset-retirement obligations	1,617.6	--	--	--	--	104.4	--	--	--	--
Nonoperating income (expense)	--	--	--	--	553.5	--	--	--	--	--
Reclassification of interest and dividend cash flows	--	--	--	--	--	--	--	108.6	--	--
Noncontrolling interest/minority interest	--	6,544.3	--	--	--	--	--	--	--	--
Revenue: Other (situational)	--	--	(66.5)	(66.5)	(66.5)	--	--	--	--	--
EBITDA: Gain/(loss) on disposals of PP&E	--	--	--	0.3	0.3	--	--	--	--	--
EBITDA: Derivatives	--	--	--	(481.5)	(481.5)	--	--	--	--	--
EBITDA: Valuation gains/(losses)	--	--	--	(214.7)	(214.7)	--	--	--	--	--
EBITDA: Other (situational)	--	--	--	734.0	734.0	--	--	--	--	--
Depreciation and amortization: Impairment charges/(reversals)	--	--	--	--	866.5	--	--	--	--	--
Depreciation and amortization: Other	--	--	--	--	66.5	--	--	--	--	--
Capital expenditure: Customer contributions	--	--	--	--	--	--	--	--	--	(104.5)
Total adjustments	(4,932.1)	7,789.9	(66.5)	132.2	1,439.4	360.0	(1,390.8)	7.7	20.3	(225.7)

Table 3

EnBW Energie Baden-Wuerttemberg AG--Reconciliation of reported amounts with S&P Global Ratings'-adjusted amounts (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
	11,535.6	17,098.6	44,364.2	6,026.2	4,780.7	880.1	4,635.4	907.4	437.4	4,178.1

Liquidity

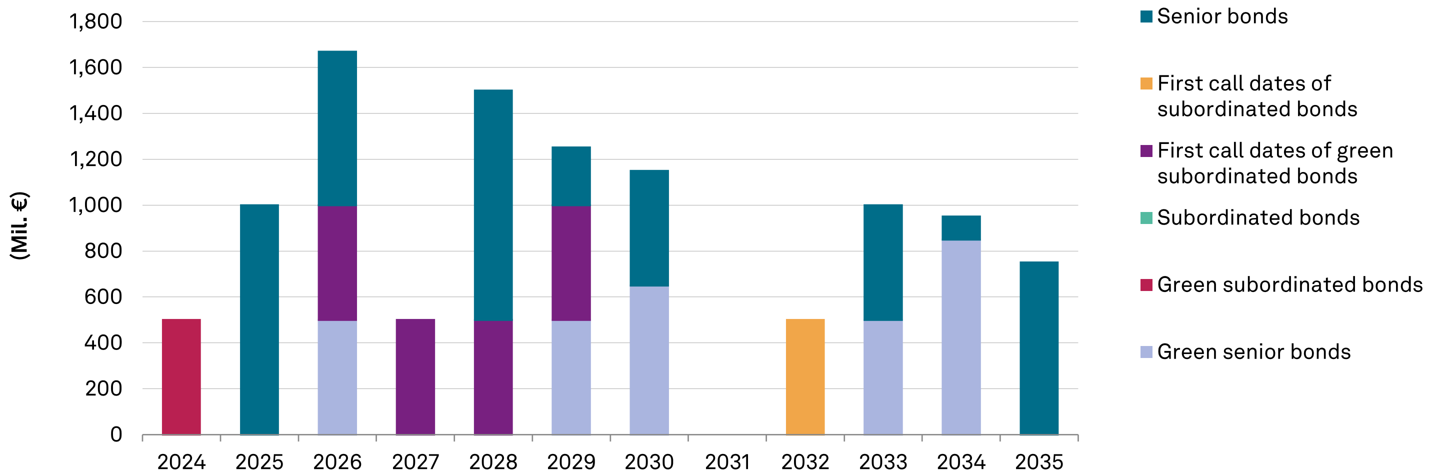
We assess EnBW's liquidity as adequate because we forecast that its sources will exceed uses by more than 1.2x over the next 12 months. We note that EnBW's liquidity has been exposed to large intra-year working capital swings at its trading activities. However, we believe that EnBW has prudent risk management policies in place, consistent with an adequate liquidity assessment. We expect the company will be able to fund its upcoming capex, although it will become increasingly dependent on partners' contributions.

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

Principal liquidity sources	Principal liquidity uses
• Forecast cash FFO of about €3.2 billion; • Cash and liquid investments of €6.9 billion as of June 30, 2024; • Undrawn committed credit lines of €4.5 billion, maturing beyond the next 12 months; and • Working capital inflows of €300 million	• Debt maturities of about €2 billion over the 12 months starting March 31, 2024; • Gross capex of €8.3 billion; and • Dividend distributions of €770 million. In addition to its cash balances, EnBW had access to about €6.4 billion of marketable securities as of June 30, 2024, to cover pensions and nuclear provisions.

Debt maturities

Chart 7



Source: S&P Global Ratings.

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Covenant Analysis

We understand there are no restrictive covenants in EnBW's debt documentation.

Environmental, Social, And Governance

ESG factors are a neutral consideration, in aggregate, in our credit rating analysis of EnBW.

EnBW's carbon footprint is significantly above that of the European peers such as Iberdrola, Verbund, EDP, or Vattenfall. This is mostly owed to the fact that EnBW is forced to retain its coal power generation capacity due to security of supply purposes. This is decided by the BNetzA along with the transmission system operator and is independent of EnBW's decision.

However, we note that EnBW intends to fully shut down its remaining 3.5GW coal fleet by 2028--pending approval from the German government policy framework--and replace its coal plants with new dispatchable power CCGT plants, which would also be built to run on renewable gases, once it is viable. This mitigates the company's exposure to the regulatory and social scrutiny related to running coal power plants. We also think it will provide EnBW with cost-effective power generation to continue supplying its customers over the longer term.

EnBW has an ambitious target to adhere to a 1.5 degrees Celsius scenario, including its accelerated path to decarbonize its business, which it published on March 27, 2023. The plan entails transforming its power-generation mix by reducing scope 1 and 2 emissions by 50% by 2027 and by 83% by 2035, from 2018 as base year. EnBW

ultimately targets climate neutrality by 2035. Although this depends on the successful transformation of the group's power generation mix, we think EnBW has a good track record of delivering its strategy on or ahead of time, which leads us to expect that its 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 reduce over the next few years. The state has publicly stated that it is 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 Dec. 31, 2023, EnBW's financial debt of €16.5 billion consisted mostly of €12.0 billion bonds, of which €9.5 billion are senior bonds, €3.2 billion of bank liabilities, and €1.3 billion of other financial liabilities. EnBW 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 would 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 ("medial volatility")

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: Neutral (no impact)
- Comparable rating analysis: Positive (+1 notch)

Stand-alone credit profile: bbb+

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

Related Criteria

- Criteria | Corporates | General: Sector-Specific Corporate Methodology, April 4, 2024
- Criteria | Corporates | General: Corporate Methodology, Jan. 7, 2024
- Criteria | Corporates | General: Methodology: Management And Governance Credit Factors For Corporate Entities, Jan. 7, 2024
- 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
- General Criteria: Methodology: Industry Risk, Nov. 19, 2013
- General Criteria: Country Risk Assessment Methodology And Assumptions, Nov. 19, 2013
- General Criteria: Principles Of Credit Ratings, Feb. 16, 2011

Ratings Detail (As Of August 23, 2024)*	
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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