Creditreform Corporate Issuer / Issue Rating

EnBW Energie Baden-Württemberg AG

Creditreform Rating

Rating object	Rating information	
EnBW Energie Baden-Württemberg AG Creditreform ID: 7110175411 Incorporation: 1997 Based in: Karlsruhe Main (Industry): Energieversorgung CEO: Dr. Stamatelopoulos	SME / Corporate Issuer Rating: A- / stable	Type: Initial rating Unsolicited Public rating
	LT LC Senior Unsecured Issues: A- / stable	Short-term rating: L2
Rating objects: Long- and short-term Corporate Issuer Rating: EnBW Energie Baden-Württemberg AG Long-and short-term Corporate Issuer Rating: EnBW International Finance B.V. Long-term Local Currency (LT LC) Senior Unsecured Issues, issued by EnBW International Finance B.V.	Rating date: 21 August 2024 Monitoring until: withdrawal of the rating Rating methodology: CRA "Corporate Ratings" CRA "Non-Financial Corporate Issue Ratings" CRA "Corporate Short-Term Ratings" CRA "Government Related Companies" CRA "Rating Criteria and Definitions" Rating history: www.creditreform-rating.de	

Content

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Summary

Company

EnBW Energie Baden-Württemberg AG is the parent Company of the EnBW Group, an integrated energy conglomerate and one of the largest energy providers in Germany. EnBW AG is almost entirely publicly owned. The largest shareholders, each holding 46.75%, are owned by the state of Baden-Württemberg and the Zweckverband Oberschwäbische Elektrizitätswerke, in which several municipalities are involved. EnBW is therefore considered a government related company in the context of this rating.

EnBW is active in the generation, trading, transmission and distribution of electricity, as well as in the gas sector. It focuses on new business areas, including e-mobility and telecommunications networks. The Group operates an electricity transmission and distribution network of approximately 148,000 km in length and a gas transmission and distribution network of approximately 31,000 km in length. The EnBW Group expects to make gross investments of approximately EUR 40 billion during the period up to 2030. During the 2023 business year the Group generated revenues of EUR 44,431 million (2022: EUR 56,003 million), EBITDA of EUR 5,633 million (2022: EUR 3,083 million) and a net result of EUR 1,833 million (2022: EUR 1,844 million).

Rating result

The current unsolicited corporate issuer rating of A- attests EnBW Energie Baden-Württemberg AG, with a high degree of creditworthiness and a low risk of default. This rating assessment is largely based on the Group's average financial profile, substantial level of regulated activities and its high degree of systemic importance as well as its strategic direction with regard to the energy transition. Additionally, the shareholder structure of EnBW has a positive effect on the rating. Based on the shareholder structure, as well as the systemic importance of the Group, we assume it to be highly likely that the relevant public institutions will provide extraordinary financial support to EnBW in times of urgency.

These factors are slightly offset by its market price exposure, which leads to potential volatility in operating earnings, as well as increased liquidity risks as it is subject to uncertainty with respect to margin requirements. In addition, we expect large cash outflows with respect to EnBW's investment plan. In order to avert a deterioration in its financial health the Group is actively divesting minority shares in assets to partially finance its investment program. This will ease the

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pressure on cash flows but its planned investments and divestments are still subject to particular execution risks.

Outlook

The one-year outlook for the unsolicited corporate issuer rating is stable. This assessment is based on the fact that performance has been strong and on the expectation that the Group will fall within its forecasted range of range of adjusted EBITDA of EUR 4.6 to EUR 5.2 billion in the current business year. Additionally, volatility on the commodity markets has dropped in comparison to the prior years. Geo-political risks remain elevated.

Reference:

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

Excerpts from the financial key figures analysis 2023:
+ EBITDA, EBIT
+ Equity ratio
+ Net total debt / EBITDA adj. (Factor)
+ Return on Investment

- Ratio of interest expense to total debt

Relevant rating factors

Table 1: Financials I Source: EnBW Energie Baden-Württemberg AG Annual Report 2023, standardized by CRA

EnBW Energie Baden-Württemberg AG Selected key figures of the financial statement analysis Basis: Annual accounts and report of 31.12. (IFRS, etc.)	CRA standardized figures[1]	
	2022	2023
Sales (million EUR)	56,003	44,431
EBITDA (million EUR)	3,083	5,633
EBIT (million EUR)	1,468	3,947
EAT (million EUR)	1,844	1,833
EAT after transfer (million EUR)	1,738	1,538
Total assets (million EUR)	67,700	63,321
Equity ratio (%)	21.75	28.00
Capital lock-up period (days)	55.03	41.49
Short-term capital lock-up (%)	29.46	22.89
Net total debt / EBITDA adj. (Factor)	18.56	6.47
Ratio of interest expenses to total debt (%)	2.00	2.79
Return on investment (%)	2.76	3.54

General rating factors

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

+ Government-related company due to ownership structure and systemic importance.
+ Sustainable business model with a high proportion of regulated business
+ Large scale Group and strong market position in the German and regional energy market
+ Proven capital market access

– High provisions relating to future nuclear and pension obligations
– Risks from (geo-)political, regulatory and economic developments
– Risks arising from commodity market price fluctuations, currency exchange rates and interest exchange rates
– Medium-sized in the international peer-comparison, with a predominantly regional focus

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

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

Current rating factors

+ Very strong operating results, driven by high trading margins from own generation volumes in the Sustainable Generation segment during the 2023 business year
+ Sale of minority shares in the wind farm He Dreiht and the transmission grid operator TransnetBW
+ Increasing share in renewable energy generation

– Negative non-operating effects of EUR 627 during the 2023 business year, with regard to expenses relating to nuclear power, valuation effects and others
– Impairments recorded on several power plants due to downward adjustments in future cash flows
– Increasing indebtedness driven by pace of investments

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

Prospective rating factors

+ Improvement in the Group's financial metrics
+ Increasing share of regulated business and increased geographical diversification
+ Increase in scale
+ Noticeable progress in the transformation oft he Group's sustainability profile

– Deterioration in the Group's financial metrics
– A negative change in our assessment related to being a government related issuer
– Loss of concessions in the networks segment
– Long-term decline in commodity prices of electricty
– Negative impact due to stricter regulatory framework and compensation mechanisms

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

ESG-factors

CRA generally takes ESG factors (environment, social and governance) into account within its rating decisions. In the case of EnBW Energie Baden-Württemberg AG we have not identified any ESG factors with significant influence.

As an integrated energy corporation with a continuing significant share of conventional energy sources (as of the end of 2023, 47% of the generation capacity is from renewables), EnBW is exposed to increased sustainability risks. This could have negative implications for business- and financial risk in the future. However, we do recognize a clear and plausible strategy to reduce these risks and increase the share of renewable generation capacity in accordance with societal and political goals. The EnBW Group expects to make gross investments of approximately EUR 40 billion during the period 2024 up to 2030. Approximately 60% of this is to be allocated to the expansion of the grids, and 30% will be for the expansion of wind farms, solar parks and the construction of climate-friendly, hydrogen-ready power plants. The remaining 10% will be allocated towards the expansion of electro mobility. The EnBW Group plans to phase out coal by 2028 and to reach climate neutrality (Scope 1 and 2) by 2035.

The EnBW Group has an extensive green financing framework, which underpins the Group's corporate strategy and contributes to achieving sustainability targets. In accordance with EnBW's green financing framework, it is exclusively used to finance projects in renewable energies, clean transport as well as in the recently added category of electricity grids in 2022 as it is a focus of the Group's investment program which also plays a key role in the energy transition. As of the end of 2023 these green bonds had a total volume of EUR 5 billion.

We see EnBW as currently well-positioned in terms of sustainability. The significant investment program, a large portion of which is focused on renewable energy and grid expansion could potentially impact our rating assessment. This is, however, balanced by the political and social requirements relating to the investment in its infrastructure. These requirements are expected to bring long-term positive effects. Therefore, we do not currently foresee any impact on the rating from ESG factors.

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

Best-case scenario: A-

Please note:

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

In our best-case scenario for one year, we assume a rating of A-. Despite EnBW's strong operating performance over the past years and the reduced volatility on the energy markets, we do not believe an upgrade within the time horizon of one year to be plausible. This assessment is based on the fact that we do not believe that EnBW's financial profile will improve significantly over the next year as it will be further ramping up the pace of investments, inevitably leading to significant cash-outflows.

Worst-case scenario: BBB+

In our worst-case scenario for one year, we assume a rating of BBB+. This could be the case if the Group's adjusted EBITDA decreases significantly with a disproportionate increase in indebtedness in order to finance its investment program, leading to a substantial increase in leverage as it fails to find the appropriate financing partners.

Business development and outlook

During the 2023 business year the average electricity and natural gas prices dropped significantly. The falling market prices, particularly for gas, were a major factor for revenue development, which fell substantially to EUR 44,431 million (2022: EUR 56,002 million). All three segments decreased in revenue, but the driving factor were the lower prices for trading activity in the Sustainable Generation Infrastructure segment, which recorded a fall in revenue of close to EUR 10 billion. The System Critical Infrastructure reported lower revenues largely due to income from the settlement of re-dispatch measures with other transmission system operators, which has no impact on the result and was partially offset by higher income from the use of the grids. The Smart Infrastructure for Customers segment reported a decrease in the sale of electricity and gas.

Table 2: Revenue and adjusted EBITDA development per segment I I Source: EnBW Energie Baden-Württemberg AG Annual Report 2023

	Revenue		Adjusted EBITDA	
in Mio. EUR	2022	2023	2022	2023
Smart Infrastructure for Customers	18,755	17,249	498	240
System Critical Infrastructure	6,697	6,328	1,058	1,772
Sustainable Generation Infrastructure	30,543	20,832	2,616	4,648
Other/Consolidation	8	21	205	294
Total	**56,003**	**44,431**	**3,967**	**6,365**

Despite a decline in revenues, the EnBW's gross profit surged to EUR 9,207 million (2022: EUR 5,211 million). This resulted in a sharp increase in the gross profit margin to 20.72% (2022: 9.31%), reflecting a recovery to healthier levels after a notable drop in 2022. Consequently, the Group's reported EBITDA experienced a substantial rise, reaching EUR 5,738 million (2022: EUR 4,473 million). These solid operating results were driven by strong performance in the System Critical Infrastructure and Sustainable Generation Infrastructure segments. In the System Critical Infrastructure segment, higher revenues were generated from grid usage, supported by increased investments in grid expansion and the inclusion of higher grid reserve costs in pricing, including re-dispatch activities to ensure supply security. The Sustainable Generation Infrastructure segment performed exceptionally well, with strong results in thermal generation and trading, where generated volumes were sold at significantly higher prices compared to the previous periods, resulting in much higher segment EBITDA.

Table 3: Reconciliation reported EBITDA to adjusted EBITDA business year 2023I I Source: EnBW Energie Baden-Württemberg AG Annual Report 2023

Reconciliation reported EBITDA to adjusted EBITDA business year 2023		
in Mio. EUR	2022	2023
Reported EBITDA	4,473	5,738
Non-Operating items (adjustments)	-506	627
Adjusted EBITDA	**3,967**	**6,365**

Non-operating items during the year had a negative effect on operating results. Adjusted by these effects, EBITDA increased by EUR 627 million to EUR 6,365 million (2022: 3,967 million). EnBW recorded expenses related to nuclear power, as well as provisions relating to onerous contracts and several incidents at SENEC concerning battery storage systems. This was partially offset by valuation effects of derivatives and income from reversals of impairment losses. Furthermore, impairments of EUR 711 million (2022: EUR 717 million) were recorded, on two offshore wind farms and conventional power plants due to a downward adjustment to the expectation of future earnings.

Despite its improved operating performance, EnBW's net result for the year was at approximately the same level as in the prior year at EUR 1,833 million (2022: EUR 1,844 million). This was driven by increasing financing costs and lower income and higher income taxes. Moreover, net earnings were negatively affected by a negative investment result of EUR -89 million (2022: EUR 277 million), largely driven by write downs on its participations due to either increasing capital costs or downward adjustments to its expected future earnings.

Within the context of its strategy and in order to create capital to finance its planned investments, EnBW has sold minority shares of 49.90% in the Group's offshore wind farm in the North Sea, He Dreiht GmbH & Co. KG. Furthermore, the Group sold 49.90% of the holding company of the Group's transmission grid operator TransnetBW GmbH and 49.90% of SunInvest GmbH & Co. KG, a solar park. All three companies will remain fully consolidated. With these partial divestments, EnBW entered into important partnerships and safeguards significant amounts of capital, reducing the need to seek external financing with respect to its investment program.

EnBW has updated its 2025 strategy and its outlook up to 2030. From 2024 up to 2030 the Group plans gross investments of approximately EUR 40 billion, translating into approximately EUR 5.7 billion per year. If the investment plan proceeds as intended, adjusted EBITDA is expected to increase to between EUR 5.5 billion and 6.3 billion by the end of 2030, of which between EUR 0.7 and EUR 1.0 billion is to be accounted for by the Smart Infrastructure for Customers segment, between EUR 2.3 and EUR 2.6 billion by the System Critical Infrastructure segment and between EUR 2.7 and EUR 3.0 billion by the Sustainable Generation Infrastructure segment.

As was expected the Group recorded a continued fall in revenues and EBITDA during the first half of 2024. Revenues fell to EUR 19,034 million (H1 2023: EUR 26,686 million). In terms of EBITDA a significant drop to EUR 3,239 million (H1 2023: 5,134 million) was recorded. This reduction in revenue and EBITDA was particularly driven by lower EBITDA in the Sustainable Generation segment, largely due to a lower realized power price in comparison to the exceptionally high trading margins in its own generation volumes in the previous year. Adjusted by non-operating items, of which particularly fair value valuation effects of derivatives, the EBITDA stood at EUR 2,588 million (H1 2023: EUR 3,498 million). The lower EBITDA consequently resulted in lower operating and net profit. The year on year fall in (operating) profit was anticipated, as the 2023 results were based on exceptionally high trading margins in the marketing of EnBW's own generation volumes in the Sustainable Generation Infrastructure segment due to the ongoing high market volatility and market prices. The full year outlook therefore remains unchanged and the Group continues to expect to realize an adjusted EBITDA in the range of EUR 4.6 to 5.2 billion

Structural risk

EnBW AG is the parent company of the EnBW Group, a horizontally and vertically integrated energy conglomerate focused on growth areas such as the expansion of renewable energy and new business fields like e-mobility and telecommunications networks. As of the end of 2023 the group consisted of 256 fully consolidated companies, 25 equity-accounted associates, and three joint operations.

The Group is managed through business and functional units, with existing business units represent the core activities along the energy value chain. It is organized into three strategic business segment: "Smart Infrastructure for Customers", "System Critical Infrastructure" and "Sustainable Generation Infrastructure".

As of the end of 2023, EnBW supplied roughly 5.5 million business and private customers with approximately 34.2bn kWh (2022: 36.7bn kWh) of electricity and 114.5bn kWh (2022: 163.1bn kWh) of gas. The group operates an electricity transmission and distribution network of around 148,000 km in length and a gas transmission and distribution network of about 31,000 km in length. The Group's generation portfolio has an installed capacity of 12,208 MW (2022: 13,048 MW), of which 5,728 MW (2022: 5,444 MW) renewable capacity,

The largest shareholders of EnBW are the state of Baden-Württemberg, which indirectly holds shares through its subsidiary NECKARPRI GmbH and its subsidiary NECKARPRI-Beteiligungsgesellschaft mbH, and OEW Energie-Beteiligungs GmbH, each with equal shares of 46.75%. OEW Energie-Beteiligungs GmbH is wholly owned by the Zweckverband Oberschwäbische Elektrizitätswerke (a public law corporation) in which several municipalities are involved. Other shareholders of EnBW are smaller municipal companies. A small share of around 0.4% is in free float.

Due to our assessment of the direct and indirect shareholder structure and the systemic importance of the EnBW Group, the sub-systematic approach of corporate issuer ratings, "Government-Related Companies" was applied. The impact of which is credit positive on the rating assessment. At the time of the rating, CRA did not have a sub-sovereign rating for the state of Baden-Württemberg. We, therefore, derived the Group's systemic importance by, applying partial discounts to the sovereign rating of CRA for the Federal Republic of Germany (AAA / stable as of 22.03.2024). The result of this analysis made a sub-sovereign rating of the highest category for the state of Baden-Württemberg likely, which was then also applied to its municipal owners, from which we derive a positive notching on the stand-alone rating of EnBW.

We assess the structural risk of EnBW to be low measured against comparable companies in the European energy sector, with the exception of its relatively small size and limited regional diversification. The Group operates mainly in Germany and partly in neighbouring European countries. Especially in its domestic market, we attribute a certain level of systemic importance to EnBW, particularly in the business areas of System-Critical Infrastructure and Sustainable Generation Infrastructure. Based on this, and the determined state affiliation, we assume that the Group's (in)direct shareholders would provide financial support if necessary, which has a credit positive effect.

Business risk

EnBW is an integrated energy Group that handles all business activities in the electricity and gas sectors, from generation and trading to transmission and distribution. The Group also focusses on new business areas, including E-mobility and telecommunication networks. The Group has three different segments that perform its business activities.

The Smart Infrastructure for Customers predominantly comprises the sale of electricity and gas, and the provision and expansion of quick-charging infrastructure and digital solutions for electro-mobility. In 2023 this segment generated approximately 39% (2022: 33%) of the Group's revenues, but accounted for approximately 3.8% (2022: 12.6%) of the Group's adjusted EBITDA. In order to trade large amounts of gas and electricity, EnBW enters into derivatives. These financial instruments can be subject to volatility and can significantly affect profit and loss through changes in fair value. Furthermore, volatility in the market prices of commodities can lead to substantial increases in liquidity requirements due to the net margining requirements. As of H1 2024 the Group had sufficient room in its credit lines to accommodate unanticipated market volatility.

The System Critical Infrastructure segment focuses on the transmission and distribution of electricity and gas. The segment also provides network-related services and manages water supply in some municipalities. Ensuring supply security and system stability is crucial. EnBW is involved in projects that aim to transport renewable energy from northern to southern Germany. In addition, investments are made in the grid integration of e-mobility and the future viability of the networks, leading to high capital intensity. During the 2023 business year this segment generated approximately 14% of the Group's revenues, but accounted for approximately 27.8% of EBITDA. We view the business risk in this segment as low due to regulated tariff systems in the electricity and gas grid sectors. However, changes in the regulatory framework can potentially have a significantly negative impact on operating margins.

The Sustainable Generation Infrastructure encompasses the areas of renewable energy and conventional generation, district heating and waste management and energy services. During the business year 2023 the Sustainable Generation Infrastructure segment represented 46.9% of revenues and accounted for approximately 73% (2022: 65.9%) of the Group's EBITDA. It is noteworthy that the margins from the sale of generated volumes were extraordinarily high during the 2023 business year. This segment is involved in the project development, design, construction, and operational management of generation facilities based on renewable energy sources, including both company-owned and third-party facilities. The construction of large offshore wind farms presents higher risks. This segment is subject to market price volatilities. EnBW seeks to reduce exposure by entering into power purchase agreements in order to safeguard margins, and hedges the expected generation levels to reduce short-term price exposure. As of 31 March 2024 the expected trading volumes in this segment were almost fully hedged, and 70-90% for the 2025 business year.

We see the business risk profile of EnBW as low to intermediate. The reason for this is that the Group has a diversified risk profile of which a significant part of its EBITDA generation is backed by regulatory frameworks and power purchase agreements. The Group's expected allocation of significant amounts of capital through its investments into the segments System Critical Infrastructure and Sustainable Generation Infrastructure will solidify this. The Group will however retain exposure to market price volatility for electricity. Moreover, with the scheduled investments EnBW is exposed to risks related to project development, in a business environment that has become increasingly unpredictable over recent years.

Financial risk

For analytical purposes, CRA adjusted the original values in the financial statements in the context of its financial ratio analysis. Contrary to our usual practice, we deducted the goodwill shown on the balance sheet from equity by only 50%, suggesting a certain recoverability of goodwill. The following descriptions and indicators are based solely on these adjustments.

Despite significant investments driven by the energy transition, EnBW recorded a significant reduction in total assets to EUR 63,321 million (2022: 67,670 million). This contraction came as a result of a reduction in working capital. Particularly a fall in the value of derivatives, but also a reduction in trade receivables, and inventories, primarily due to an easing of prices on the energy markets.

At the basis of the group's financial profile stands its equity ratio, which increased to 28.00% (2022: 21.75%) during the 2023 business year. The increase was mostly driven by the increase in non-controlling interests, which rose significantly as a result of the sale of its minority stakes in particularly the offshore wind park He Dreiht, and the holding company of the Group's transmission grid operator TransnetBW. Outstanding indebtedness rose to EUR 15,222 million (20222: EUR 11,647 million), and was primarily driven by the Group's pace of investments, but also due to its investment in short-term financial assets. Adjusted by liquid funds (including current financial assets), net financial debt rose by 4.8% in comparison to the prior year to EUR 7,558 million. As of the end of June 2024 net financial debt rose to EUR 9,006, because of a reduction in liquid funds due to an increased pace of investments.

The Group's cash flow from operations of EUR 900 million (2022: EUR 1,805 million) was significantly lower than the prior year, despite its strong operating performance. This was driven by cash outflows relating to working capital management. FFO, however, was significantly higher at EUR 5,503 million (2022: EUR 3,727 million), and was sufficient to cover the Group's increasing pace of investments. EnBW invested EUR 4,903 million during the year. This was further offset by the proceeds from the sale of the minority participations of 49.9% in the abovementioned subsidiaries, as well as some other smaller divestments. Net investments totalled EUR 2,740 million).

The financial metrics related to operating profitability have increased significantly. Particularly the net total debt / EBITDA adj., which improved to 6.47 (2022: 18.56), as well as EBITDA interest coverage of 4.42 (022: 2.80), as well as return on investment of 3.54 (2022: 2.76). As the operating performance in 2023 was extraordinary, the expectation for 2024 is that operating profit will fall in comparison to 2023. We therefore expect a deterioration in credit metrics relating to (operating) profitability for the 2024 business year.

Liquidity during 2023 continued to be strong, having had a FFO and sufficient credit lines at its disposal at all times. Also at H1 2024 liquidity continued to be strong with cash and cash equivalents of EUR 4,476 million (2023: 5,995 million) and committed credit lines of EUR 3.9 billion, of which approximately EUR 300 million was in use. Furthermore, EnBW disposes over unutilized uncommitted credit lines of EUR 1.7 billion. Furthermore, EnBW disposes over a positive working capital of EUR 5,519 million.

We see the financial risk profile of EnBW as low, particularly in the short-run but also during the next two years as the Group disposes over a strong operating cash flow and a well-diversified maturity profile of its indebtedness coupled with strong liquidity with very good capital market access. With the Group's updated strategy and 2030 plan, EnBW's plans to invest approximately EUR 40 billion during the time period of 2024 up to 2030, translating into approximately EUR 5.7 billion per year. However, in order to maintain a healthy financial profile, and within the context of its strategy, EnBW aims to continue its investments with partnerships and by offering up minority stakes. With this, EnBW expects to safeguard significant amounts of capital, expecting its net investments to be reduced to EUR 22 billion in the aforementioned time span. This would translate to approximately EUR 3,2 billion per year, which we believe is an amount that will be financially sustainable. There are, however, execution risks as the Group first needs to safeguard these aforementioned partnerships, as well as the sale of minority stakes.

Further ratings

Based on the long-term issuer rating, and taking into account our liquidity analysis, the short-term rating of EnBW Energie Baden-Württemberg AG has been set at L2 (standard mapping), which corresponds to a high level of liquidity based on the assessment for one year.

The rating objects of the issue rating are exclusively long-term senior unsecured issues, denominated in euro, issued by EnBW Energie Baden-Württemberg AG, and which are included in the list of ECB-eligible marketable assets.

In addition to EnBW AG, the following issuer and its emissions listed below are considered within the scope of this rating:

- EnBW International Finance B.V.

The EnBW International Finance B.V., hereinafter also referred to as EnBW Finance, acts as a financing vehicle for the EnBW Group. In its capacity, EnBW Finance channels funds raised on the capital market, including through a Debt Issuance Program (DIP) with a volume of up to EUR 10 billion, to companies within the EnBW Group. EnBW Energie Baden-Württemberg AG guarantees the liabilities of EnBW Finance B.V., specifically ensuring the timely payment of capital and interest for the issuances.

The primary purpose of EnBW Finance is to raise capital to finance the EnBW Group, particularly through the issuance of bonds. It significantly ensures long-term liquidity and financing between the companies within the EnBW Group.

Due to the financial, corporate and liability-related interconnections, an assessment of the rating for EnBW International Finance B.V. only makes sense within the context of the Group. Consequently, we derive the unsolicited Corporate Issuer Rating of EnBW International Finance B.V. from the unsolicited Corporate Issuer Rating of EnBW Energie Baden-Württemberg AG and therefore currently stands at A- with a stable outlook. The short-term rating was set at L2.

The unsolicited issue rating is exclusively valid for the long-term senior unsecured issues denominated in euros, issued by EnBW Finance B.V. and which are included in the list of ECB-eligible marketable assets. The ECB list of eligible marketable assets can be found on the website of the ECB.

The Debt issuance Program (DIP) currently has a volume of up to EUR 10 billion. According to the latest prospectus of 5 April 2024, EnBW AG provides an unconditional and irrevocable guarantee for the proper and timely payment of principal, interest, and other amounts payable on the bonds.

We have provided the debt securities issued by EnBW Finance B.V. with a rating of A-. The rating is based on the corporate rating of EnBW Finance B.V. Other types of debt instruments, or notes of the issuer denominated in other currencies, have not been rated by CRA. For a list of all currently valid ratings and additional information, please consult the website of Creditreform Rating AG.

The following tables provide an overview of the ratings issued by Creditreform Rating AG in this context, as well as the key features of the Debt Issuance Program.

Overview

Table 4: Overview of CRA Ratings I Source: CRA

Rating Category	Details	
	Date	Rating
EnBW Energie Baden-Württemberg AG	19.08.2024	A- / stable / L2
EnBW International Finance B.V.	19.08.2024	A- / stable / L2
Long-term Local Currency (LC) Senior Unsecured Issues	19.08.2024	A- / stable
Other	--	n.r.

All future LT LC senior unsecured Notes issued by EnBW Energie Baden-Württemberg AG or EnBW International Finance B.V., and those that have similar conditions to the current DIP program, denominated in euro and included in the list of ECB-eligible marketable assets will, until further notice, receive the same ratings as the current LT LC senior unsecured Notes issued under the DIP program. Notes issued under the program in any currency other than euro, or other types of debt instruments, have not yet been rated by CRA. For a list of all currently valid ratings and additional information, please consult the website of Creditreform Rating AG. For the time being, other emission classes or programs (such as the Commercial Paper Program), as well as issues that do not denominate in euro, will not be assessed

Financial ratio analysis

Table 5: Financial key ratios |Source: EnBW AG annual report 2023, structured by CRA

8	2020	2021	2022	2023
Fixed asset intensity (%)	68.07	44.51	48.76	56.85
Asset turnover	0.47	0.57	0.82	0.69
Asset coverage ratio (%)	87.35	87.73	85.84	94.23
Liquid funds to total assets (%)	3.93	10.72	10.96	13.50
Capital Structure				
Equity ratio (%)	19.27	13.82	21.75	28.00
Short-term-debt ratio (%)	27.09	49.68	42.68	29.02
Long-term-debt ratio (%)	40.20	25.22	20.10	25.56
Capital lock-up period (in days)	75.16	73.54	55.03	41.49
Trade-accounts-payable ratio (%)	9.21	9.34	12.47	7.98
Short-term capital lock-up (%)	31.31	77.42	29.46	22.89
Gearing	3.99	5.46	3.09	2.09
Leverage	5.10	6.27	5.64	4.04
Financial Stability				
Cash flow margin (%)	14.01	6.95	-3.31	10.20
Cash flow ROI (%)	6.34	3.25	-2.76	7.24
Total debt / EBITDA adj.	13.93	23.78	21.58	7.97
Net total debt / EBITDA adj.	13.25	20.82	18.56	6.47
ROCE (%)	6.43	-0.24	5.00	16.62
Total debt repayment period	17.48	8.26	-2,045.25	-29.47
Profitability				
Gross profit margin (%)	28.73	20.14	9.31	20.72
EBIT interest coverage	1.54	0.34	1.38	3.10
EBITDA interest coverage	3.70	5.57	2.80	4.42
Ratio of personnel costs to total costs (%)	10.93	7.58	4.60	6.44
Ratio of material costs to total costs (%)	71.62	80.03	90.75	79.51
Cost income ratio (%)	95.87	100.33	98.21	92.94
Ratio of interest expenses to total debt (%)	2.02	0.81	2.00	2.79
Return on investment (%)	2.53	0.38	2.76	3.54
Return on equity (%)	9.63	4.88	15.17	11.29
Net profit margin (%)	4.05	1.36	3.27	4.08
Operating margin (%)	5.53	0.51	2.60	8.78
Liquidity				
Cash ratio (%)	10.50	19.31	22.41	32.63
Quick ratio (%)	97.68	97.67	95.26	119.01
Current ratio (%)	117.86	111.70	120.05	148.70

Appendix

Rating history

The rating history is available under the following link.

Table 6: Corporate issuer rating of EnBW Energie Baden-Württemberg AG | Source: CRA

Event	Rating date	Publication date	Result
Initial Rating	13.04.2021	15.04.2021	A- / stable

Table 7: Corporate Issue rating of EnBW International Finance B.V. l Source: CRA

Event	Rating date	Publication date	Result
Initial rating	13.04.2021	15.04.2021	A- / stable

Table 8: LT LC senior unsecured issues by EnBW International Finance B.V. | Source: CRA

Event	Rating date	Publication date	Result
Initial rating	13.04.2021	13.04.2021	A- / stable

Table 9: Short-Term Issuer Rating EnBW International Finance B.V. | Source: CRA

Event	Rating date	Publication date	Result
Initial rating	1.09.2023	07.09.2023	L2

Regulatory requirements

The rating[2] was not endorsed by Creditreform Rating AG (Article 4 (3) of the CRA-Regulation).

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

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

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

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

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

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

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

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

Rating methodology	Version number	Date
Corporate Ratings	2.4	July 2022
Corporate Short-Term Ratings	1.0	June 2023
Government-related Companies	1.1	May 2023
Non-financial Corporate Issue Ratings	2.0	March 2024
Rating Criteria and Definitions	1.3	January 2018

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

The rating was carried out by the following analysts:

Name	Function	Mail-Address
Rudger van Mook	Lead-analyst	R.vanMook@creditreform-rating.de
Christian Konieczny	Analyst	C.Konieczny@creditreform-rating.de

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

Name	Function	Mail-Address
Tobias Stroetges	PAC	T.Stroetges@creditreform-rating.de

On 21 August 2024, the analysts presented the rating to the rating committee and the rating was determined. The rating result was communicated to the company on 22 August 2024. There has not been a subsequent change to the rating.

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

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

ESG-factors

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

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

Conflict of interests

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

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- No ancillary services in the regulatory sense were carried out for this rating object.

For the complete list of provided rating and credit service ancillaries please refer to the Creditreform Rating AG's website.

Rules on the presentation of credit ratings and rating outlooks

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

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

Corporate issuer rating:

1. Annual report

2. Website

3. Internet research

Corporate issue rating:

1. Corporate issuer rating incl. information used for the corporate issuer rating

2. Documents on issues / instruments

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

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

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

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

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

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

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

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

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