Creditreform Corporate Issuer / Issue Rating

Volkswagen AG

Creditreform Rating

Rating object	Rating information	
Volkswagen AG	Corporate Issuer Rating: **BBB+ / stable**	Type: Update, Unsolicited, Public rating
Creditreform ID: 2070000543	LT LC Senior Unsecured Issues: **BBB+ / stable**	Short-term rating: **L3**
Incorporation: 1937		
Based in: Wolfsburg, Germany		
Main (Industry): Automotive		
CEO: Oliver Blume		

Rating date: 2 November 2023
Monitoring until: withdrawal of the rating
Rating methodology: CRA "Corporate Ratings"
CRA "Non-Financial Corporate Issue Ratings"
CRA "Corporate Short-Term Ratings"
CRA "Rating Criteria and Definitions"
Rating history: www.creditreform-rating.de

Rating objects:
Long- and short-term Corporate Issuer Rating: Volkswagen AG
Long-and short-term Corporate Issuer Rating: Volkswagen International Finance N.V.
Long-term Local Currency (LT LC) Senior Unsecured Issues

Content

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Summary

Company

Volkswagen AG, together with its subsidiaries and affiliates - hereinafter also referred to as VW, the Company, or the VW Group - is one of the world's leading automobile and commercial vehicle manufacturers. Its main business activities include the development of vehicles, engines and vehicle software, the production and sale of passenger cars, light commercial vehicles, trucks, buses and motorcycles, as well as its business with original parts, large diesel engines, turbo machinery, drivetrain components and complementary mobility solutions. In addition, the VW Group's business activities include financial services and automotive-related services. The VW Group's key markets currently include the Western Europe region as well as China, the USA, Brazil, Poland, Mexico, Turkey and the Czech Republic.

In fiscal year 2022, the VW Group generated sales of EUR 279.2 billion (2021: EUR 250.2 billion) and EBT of EUR 22.0 billion (2021: EUR 20.1 billion), despite a challenging market environment and a continued decline in sales volumes in the automotive sector. The main reasons for this growth in sales and earnings were positive price and product mix effects and favorable exchange rate developments. In the first nine months of the current fiscal year, the VW Group recorded rising unit sales for the first time since 2019, which, combined with positive price effects, led to sales growth of 15.9% to EUR 235.1 billion (9M 2022: EUR202.9 billion). At EUR 16.2 billion, operating profit was below the prior-year figure (9M 2022: EUR17.1 billion) due to negative effects from the fair value measurement of derivatives outside hedge accounting (EUR-2.5 billion) and increased product costs.

Rating result

With an unsolicited corporate issuer rating of BBB+, VW AG continues to have a highly satisfactory creditworthiness and a low to medium default risk. The Group's diversified business model, with a broad product and brand portfolio and leading market and competitive position in its markets, continue to be decisive for maintaining this rating assessment. Overall, we consider the Group's operating business development in 2022 and in the current fiscal year to be sufficiently solid against the backdrop of a challenging market situation and challenges in the course of ongoing transformation of the automotive industry and the VW Group - although operating profit and the corresponding margin in the first nine months of 2023 were impacted by increased product costs and non-cash valuation effects, in particular from commodity hedging transactions. The lower net cash flow as a result of negative working capital changes - particularly in the Group's financial services business – along with increased capital expenditures and a rise in financial debt against this background, have a dampening effect on our rating assessment, despite a continuing good financial and liquidity position and established access to the capital markets. In addition, the increasing intensity of competition, particularly in the area of e-mobility, with increasing challenges in the Chinese market, and investment requirements in the course of the ongoing transformation process for the VW Group, and particularly in connection with growing (geo)political conflicts and a global economic slowdown, continue to be factors leading to uncertainty.

Outlook

The one-year outlook for the rating remains stable. We assume that the VW Group will be able to display overall business development according to plan for the full year 2023 and beyond, with a further increase in sales volumes, rising sales and an operating profit margin at the previous year's level. We consider the initiation of the performance program to improve profitability in the medium to long term to be a stabilizing factor, even if successful implementation remains to be seen. Fundamentally, we believe that the VW Group is in a position to meet the current financial, structural and operational challenges resulting from the ongoing transformation to e-mobility, the increasing intensity of competition, as well as the challenging market situation. Nevertheless, a negative adjustment to the rating or outlook cannot be ruled out in the event of below-target business performance and a noticeable deterioration in earnings and internal financing power, in conjunction with an increase in debt due to capital expenditure.

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 2022:
+ Sales and EBIT growth
+ EBIT(DA) interest coverage
+ Slight decrease in financial debt
+ Increased equity ratio
+ Liquidity ratios
+ Asset coverage ratio

- Net cash flow burdened by working capital changes
- Decreased return on investment
- Increase in balance sheet total

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 (-).

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

Relevant rating factors

Table 1: Financials I Source: Volkswagen AG, Annual Report 2022; standardized by CRA

Volkswagen AG Selected key figures of the financial statement analysis Basis: Consolidated Annual Accounts of 31.12. (IFRS)	CRA standardized figures[1]	
	2021	**2022**
Sales (billion EUR)	250.20	279.23
EBITDA (billion EUR)	46.36	50.60
EBIT (billion EUR)	19.10	22.37
EAT (billion EUR)	15.43	15.84
EAT w/o non-controlling interests (billion EUR)	14.84	14.87
Total assets (billion EUR)	474.25	501.91
Equity ratio (%)	20.44	25.59
Capital lock-up period (days)	34.46	37.58
Short-term capital lock-up (%)	41.44	41.98
Net total debt / EBITDA adj. (Factor)	6.78	5.88
Ratio of interest expenses to total debt (%)	0.48	0.40
Return on investment (%)	3.57	3.06

General rating factors

+ Diversified business model with strong brands and broad product range
+ Leading market position and global market presence
+ Expanding (financial) services business
+ Solid financial position
+ Good access to capital markets
+ Moderate dividend policy

– Dynamic, structural change in the automotive industry toward e-mobility and digitalization
– Risks associated with the transformation of VW into a software-oriented company
– High investment requirements with increasing project risks
– High intensity of competition and thus also increased pressure to innovate, cut costs and succeed
– Tighter emissions and safety regulations as well as legal and regulatory restrictions
– Market share gains by innovative competitors in the course of technological change
– Increased risks from globalization efforts
– Currency and country risks (political, legal, capital)

Current rating factors

+ Increase in sales and operating profit in 2022, despite declining sales in a challenging market environment, and amid ongoing transformation
+ Sales volumes and deliveries to customers to grow again for the first time in 9M 2023 since outbreak of COVID 19 pandemic - with corresponding contribution to sales growth

[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.

- + Satisfactory financial and liquidity position combined with established access to capital markets
- + Initiation of "Accelerate Forward | Road to 6.5" performance program to improve long-term profitability - although successful implementation remains to be seen
- + Positive business development in Commercial Vehicles

- – Noticeable impact on net cash flow In 2022 and 9M 2023 due to significant working capital changes and increased capital expenditures - negative net cash flow at Group level as of 9M 2023
- – Operating result in 9M 2023 below prior-year comparison, mainly due to non-cash effects from commodity hedging transactions
- – Rising financial debt as of 9M 2023
- – Outlook for deliveries to customers at 9M 2023 slightly lowered, although overall year-on-year growth to be realized
- – Increasing intensity of competition and economic slowdown in relevant markets, especially Germany and China
- – Continuing financial burden in the course of the transformation to electromobility and digitalization

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

- + Strengthening of market position through successful continuation of the transformation process and rapid expansion of infrastructure required for electromobility and digitalization
- + Positive business performance, and improvement in earnings and internal financing capability due to the successful implementation of the Performance Program (Accelerate Forward | Road to 6.5)
- + Improvement in the results of the financial ratio analysis
- + Success in electrification and digitalization and in reducing pollutant emissions
- + Further development and scaling of the new production process for battery cells (dry coating)
- + Cooperations and partnerships in the research and development sector
- + Increased government support for e-mobility

- – Deterioration of the result of the financial ratio analysis, e.g., in the course of business development not occurring according to plan
- – Self-defined financial ratios will not be achieved
- – Market entry of new competitors in the course of technological change
- – Declining sales and loss of market share as a result of increasing competitive intensity
- – Increasing trade barriers
- – Further tightening of regulatory requirements, e.g., emissions and safety regulations
- – Anti-globalization tendencies
- – Recalls and reputational damage

ESG-factors

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.

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

Nevertheless, sustainability issues are also central elements of the VW Group's development in the short term, but particularly in the medium and long term. The Company is committed to the Paris climate agreement, and further tightened its previous climate protection targets at the beginning of 2022. Accordingly, in addition to other measures, CO_2 emissions in manufacturing are to be reduced by 50.4% from 2018 to 2030 instead of the previously targeted 30%. The Company's power needs in its EU locations is to be fully supplied from renewable energies by 2023. At the end of 2022, the VW Group in the EU drew roughly 99.6% of its external electricity from renewable energy sources. By 2030, all locations worldwide outside of China are to be supplied with sustainable energy. In addition, the VW Group aims to reduce CO_2 emissions by 30% on average per passenger car or light commercial vehicle over its entire life cycle by 2030. Despite the tightened interim targets, the VW Group still plans to become a balance sheet carbon neutral company by 2050. After review and evaluation of the VW Group's adjusted emission reduction targets by the Science Based Targets initiative (SBTi), the ambition level in scope 1 and scope 2 now corresponds to 1.5 degrees of global warming. The previous strategy met the requirement of limiting global warming to below 2 degrees Celsius, so that an overall improvement can be noted. The SBTi confirmed conformity with the 2°C target for the envisaged 30% reduction in CO_2 emissions in the use phase (Scope 3). In order to achieve the targets and drive forward the transformation process of the VW Group, the VW Group plans to invest more than EUR 120 billion in the future areas of electrification and digitalization between 2023 and 2027.

Although we see financial risks for the VW Group in this area, e.g., also from CO_2 emissions and in relation to a regulatory compliant fleet consumption, we see the Company overall on a satisfactory path. This includes, for example, the VW Group's re-admission to the UN Global Compact at the beginning of 2021, following a five-year exclusion as a result of the diesel issue. In addition, Audi AG has been readmitted to the UN Global Compact, as well as Porsche AG and TRATON SE. Furthermore, the improvement of compliance systems in accordance with U.S. requirements, the issuance of green bonds and the electric offensive in the Group's model portfolio, as well as the transformation strategy with its sub-strategies, are to be seen overall as positive.

The diesel issue, which is fundamentally a governance issue, was already taken into account in the rating in previous years, contributing negatively to the rating level at the time. Although the issue will continue to be monitored, and further financial burdens are to be expected, we do not derive any further explicit implications for this year's rating, partly because we assume that the greater part of the financial impact from this has been processed. In our opinion, various aspects remain to be observed with regard to the ESG factors, without deriving any effect from them at present which would influence the rating. In the future, ESG factors may have an impact on our rating assessment, depending on the Company's achievement of its self-imposed targets and regulatory changes.

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.

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.

Best-case scenario: A-

In our best-case scenario for one year, we assume that the VW Group will succeed in achieving higher-than-expected sales and earnings, leading to an improvement in its operating profit margin and cash flow generation. This should allow the VW Group, despite high investment and capital requirements in connection with the ongoing transformation process, as well as regulatory challenges, to bring about an improvement in its financial ratio, which could have an overall positive impact on our rating assessment. The performance program, launched for the Volkswagen brand in order to increase earnings power, should provide important approaches in this regard, although tangible improvements are expected in the medium to long term. In view of the numerous uncertainties and challenges arising from current geopolitical crises, the economic slowdown, increasing competition and the ongoing transformation to electric mobility, we consider this scenario to be unlikely.

Worst-case scenario: BBB

In our worst-case scenario for one year, we assume a rating downgrade to BBB. This downgrade would have to be considered in the event of a global recessionary economic trend, with a continuing increase in the undersupply of intermediate products - in particular semiconductors - and raw materials, as well as declining sales figures if the VW Group does not succeed in compensating for cost inflation, e.g., through corresponding cost-cutting measures, and generating business development as planned. Bad investments in connection with the implementation of the NEW AUTO strategy, or a weakening of the Group's market and competitive positions, could also have a negative impact, which would impair the sustainable earnings and internal financing power of the VW Group. In addition, a disproportionate increase in debt as a result of the high investment and capital requirements in connection with the transformation process and regulatory challenges could lead to a deterioration in the results of the financial ratio analysis, and thus to a worsened outlook or a downgrade. Our assessment of key quantitative and qualitative fundamentals sees the rating as secure for the time being.

Business development and outlook

Fiscal year 2022 was particularly impacted by the repeated corona-related lockdowns in China and the outbreak of war between Russia and Ukraine, which noticeably increased the already heightened geopolitical and economic risks and uncertainties. In addition, these crises, combined with the continuing semiconductor shortage, had a negative impact on vehicle availability, with the result that the number of deliveries of passenger cars and light commercial vehicles decreased by 7.6% to 7,957 thousand vehicles (2021: 8,611 thousand vehicles). By contrast, the 12.6% increase in deliveries of commercial vehicles to 305 thousand vehicles (2021: 271 thousand vehicles), which is almost exclusively attributable to the first-time full inclusion of Navistar (consolidated since July 1, 2021), only had a slightly offsetting effect on total vehicles delivered in the VW Group, which decreased by 7.0% to 8,263 thousand vehicles (2021: 8,882 thousand vehicles).

Table 2: Business development of Volkswagen AG (Group) I Source: Annual Report 2022, own presentation

Volkswagen AG				
in EUR billion	**2021**	**2022**	**Δ**	**Δ %**
Sales revenue	250.2	279.2	29.0	11.6
Gross result	47.2	52.2	5.0	10.6
Gross Margin	*18.9%*	*18.7%*	--	--
EBIT	19.3	22.1	2.8	14.8
EBIT Margin	*7.7%*	*7.9%*	--	--
EBT	20.1	22.0	1.9	9.5
EBT Margin	*8.0%*	*7.9%*	--	--
EAT	15.4	15.8	0.4	2.6

In fiscal 2022, the VW Group recorded sales growth of 11.6% to EUR279.2 billion (2021: EUR250.2 billion), despite a continued decline in unit sales. This was primarily due to an improved price and product mix. In addition, exchange rate effects, good business performance in financial services and the first-time full consolidation of Navistar had a positive impact on sales development. Gross profit increased to EUR 52.2 billion (2021: EUR 47.2 billion). Due to the slightly disproportionate increase in cost of sales, largely as a result of higher product costs and research and development costs charged to income, gross margin decreased slightly to 18.7% (2021: 18.9%). The ratio of total R&D costs to Automotive sales (R&D ratio) increased from 7.6% to 8.1% in 2022, partly as a result of the electrification of the vehicle portfolio in line with the strategy, digitization and the further development of modular and electric kits and platforms. At EUR 1.4 billion, other operating profit was down on the prior-year figure (EUR 1.7 billion) and was impacted by various offsetting effects. Income from derivatives and other hedges - which mainly included gains from the fair value measurement of derivative financial instruments for currency and commodity hedging in the Automotive Division not designated in a hedging relationship - was offset primarily by expenses for impairment losses and risk provisions in connection with the Russia-Ukraine conflict (totaling EUR 2 billion in cost of sales and other operating result) and the diesel issue (EUR 0.4 billion). Further burdens on the operating result resulted from transaction costs and personnel expenses in connection with the IPO of Porsche AG (EUR 0.6 billion) and the restructuring measures at SEAT (EUR 0.2 billion). Nevertheless, operating profit (EBIT) increased in the past fiscal year to EUR22.1 billion (2021: EUR19.3 billion) and, in addition to the improved price and product mix already mentioned, benefited in particular from disproportionately low selling expenses and a proportional development of administrative expenses. The operating profit margin improved slightly to 7.9% (2021: 7.7%) and was thus within the forecast target corridor of the VW Group. The financial result deteriorated year-on-year to EUR -0.1 billion (2021: EUR 0.9 billion), mainly due to the impairment losses of EUR 1.9 billion recognized on the investment in Argo AI included in other financial result and the negative securities, and fund results due to the Russia-Ukraine conflict and the resulting capital market turbulence. The improvement in net interest income due to higher interest income and lower interest expense had only a limited offsetting effect, with the result that the EBT margin was slightly lower than in the previous year. At EUR 15.8 billion (2021: EUR 15.4 billion), EAT showed only a slight year-on-year improvement due to a noticeably higher tax rate of 28.2% (2021: 23.3%).

With regard to the individual Group areas, fiscal 2022 was as shown in the following.

Table 3: Segment information of Volkswagen AG (Group) I Source: Annual Report 2022, own presentation

Segment information (EUR billion)	2022		
	Revenue	EBIT	EBIT-Margin
Automotive Division	232.4	16.5	7.1
Passenger Cars	189.3	14.6	7.7
Commercial Vehicles	39.5	1.6	4.0
Power Engineering	3.6	0.3	7.9
Financial Services	46.8	5.7	12.1
Volkswagen Group	***279.2***	***22.1***	***7.9***

In the Automotive Division, all subdivisions made a positive contribution to sales and earnings growth and improved their earnings margins. Passanger Cars, the division with the highest sales, achieved higher-than-planned sales growth and an EBIT margin of 7.7% in 2022 (2021: 7.5%), although this was slightly below the adjusted forecast for 2022 (8.0-9.0%). The Commercial Vehicles and Power Engineering businesses performed positively overall, as planned. The Financial Services Division was also in line with expectations, with a positive sales trend and decline in operating profit. Earnings were impacted in particular by expense for impairment losses and risk provisions recognized in other operating income in connection with the Russia-Ukraine conflict, resulting in a decrease in operating profit margin to 12.1% (2021: 13.8%).

In the first half of H1 2023, the VW Group recorded an 11.0% increase in unit sales to 4.4 million vehicles (H1 2022: 4.0 million vehicles) for the first time since 2019. Increased vehicle sales and improved price positioning led to an 18.2% growth in sales revenue to EUR 156.3 billion (H1 2022: EUR 132.2 billion). At 19.8%, the gross margin was slightly below the prior-year period (H1 2022: 20.0%). Operating profit decreased to EUR 11.3 billion (H1 2022: EUR 13.2 billion), largely due to non-cash valuation effects on derivatives, in particular from commodity hedging transactions, amounting to EUR -2.5 billion (H1 2022: EUR +0.9 billion). The operating profit margin decreased accordingly to 7.3% (H1 2022: 9.7%). Before valuation effects, an operating profit of EUR 13.9 billion (H1 2022: EUR 12.3 billion) and an operating profit margin of 8.9% (H1 2022: 9.3%) would be consistent in the first half of 2023. Operating profit was negatively impacted in particular by higher product costs and special effects from the deconsolidation of Volkswagen Group RUS and its subsidiaries (EUR -0.4 billion). EBT was also down year-on-year at EUR 11.9 billion (H1 2022: EUR 14.1 billion) due to a weaker financial result as a result of higher interest expense and lower income from investments accounted for using the equity method.

Table 4: Business development of Volkswagen AG (Group) I Source: Half-Year Report 2023, own presentation

Volkswagen AG				
in EUR billion	**H1 2022**	**H1 2023**	**Δ**	**Δ %**
Sales Revenue	132.2	156.3	24.0	18.2
EBIT	12.8	11.3	-1.5	-11.5
EBIT Margin	*9.7%*	*7.3%*	--	--
EBT	14.1	11.9	-2.6	-15.3
EBT Margin	*10.6%*	*7.6%*	--	--
EAT	10.7	8.5	-2.1	-20.0

The figures for the first nine months of the current fiscal year 2023 largely confirm the business development in the first half of 2023, with the VW Group reporting a reduced operating result despite positive sales and revenue development. Despite improvements, profitability in the third quarter fell short of the VW Group's ambitious targets. The VW Group intends to counteract this situation with the consistent implementation of cross-brand performance programs to increase profitability.

Table 5: Business development of Volkswagen AG (Group) I Source: 9M Report 2023, own presentation

Volkswagen AG				
in EUR billion	**9M 2022**	**9M 2023**	**Δ**	**Δ %**
Sales Revenue	202.9	235.1	32.2	15.9
EBIT	17.1	16.2	-1.2	-4.9
EBIT Margin	*8.4%*	*6.9%*	--	--
EBT	17.0	17.7	0.7	4.2
EBT Margin	*8.4%*	*7.5%*	--	--
EAT	12.8	12.9	0.1	0.6

Against the backdrop of the current difficult conditions, we consider the Group's business development in 2022, and also in the current fiscal year 2023, to be sufficiently solid overall, despite the operating result being burdened by valuation effects from derivatives. However, in 2022 and in the current fiscal year 2023, the VW Group recorded a noticeable burden on net cash flow due to working capital changes and continued high investment activity (as of September 30, 2023, the VW Group even reported negative net cash flow, which was mainly due to working capital changes in the financial services business), which is reflected in an increase in financial debt to EUR 229.2 billion as of September 30, 2023 (December 31, 2022: EUR 205.2 billion). Net liquidity (financial debt less gross liquidity) decreased to EUR -143.1 billion (Dec. 31, 2022: EUR -125.8 billion). Despite these dampening effects, which we will continue to observe, we continue to assess the financial and liquidity position of the VW Group as satisfactory, in particular against the backdrop of the available cash and cash equivalents and other financial facilities as well as its established access to capital markets.

For the full year 2023, the VW Group forecasts a significant increase in deliveries to between 9 and 9.5 million vehicles, although a slight downward adjustment was made at the half-year point 2023 (previously 9.5 million vehicles). Sales revenue is expected to grow by 10% to 15% to up to EUR 321 billion, but operating profit is expected to remain at the level of the previous year, which would lead to a noticeable decline in the operating profit margin. From the Company's perspective, this is mainly due to negative valuation effects from commodity hedging transactions, which cannot be offset in the current year. As late as the first half of 2023, the VW Group was still forecasting an operating profit margin of between 7.5% and 8.5%. We consider the adjusted forecast to be plausible, but in view of the ongoing disruptive transformation of the automotive industry towards electrification and digitalization, the material and raw material availability required for this, securing and maintaining supply chains, increasing competition, the continuously tightening regulatory framework, the weakening of the economic situation, and the geopolitical crises, we see numerous challenges for the VW Group that may additionally impact further business development. Against this background, we consider the initiation of the Performance Program to improve profitability in the medium to long term to be a stabilizing factor, even if successful implementation remains to be seen.

Compared with the pre-Corona level, the VW Group as a whole has succeeded in significantly increasing sales and earnings, and slightly improving the operating profit margin, despite the current challenging market situation, which is reflected, among other things, in a marked reduction in sales volumes, which has a stabilizing effect on the rating.

Structural risk

As one of the world's leading automobile manufacturers, VW is represented in all major markets. The parent company is Volkswagen AG, headquartered in Wolfsburg. As of December 31, 2022, the VW Group comprises a total of 1,568 companies (2021: 1,529) in Germany and abroad. Of these, 946 are fully consolidated subsidiaries and a further 147 are associates and joint ventures accounted for using the equity method and investments carried at fair value. The remaining companies are accounted for at cost but not consolidated. Overall, the VW Group thus has a focused, but also complex and dynamic group structure.

As of the balance sheet date December 31, 2022, Porsche Automobil Holding SE held 31.9% of the shares in VW AG. Other major shareholders were Qatar Holding LLC (10.5%), the Federal State of Lower Saxony (11.8%) and foreign and domestic institutional investors (24.8%). The remaining shares are in free float (21.0%). Deviating from the capital distribution, 53.3% of the voting rights were held by Porsche Automobil Holding SE, 20.0% by the Federal State of Lower Saxony and 17.0% by Qatar Holding LLC, and 9.7% by the remaining shareholders. Under the "VW Act", important resolutions can only be passed with a majority of more than 80% of the votes. This means that the Federal State of Lower Saxony, with its 20% share of the vote, can have a significant influence on VW's fortunes.

The business activities of the VW Group comprise the Automotive and Financial Services divisions. The main business activities of the Automotive Division include the development of vehicles, engines and vehicle software, the production and sale of passenger cars, light commercial vehicles, trucks, buses and motorcycles, as well as the business with original parts, large-bore diesel engines, turbo machinery and driveline components. The Financial Services Division is primarily engaged in sales financing, and comprises dealer and customer financing, vehicle leasing, direct banking and insurance business, as well as fleet management and mobility services.

The Company has ten core brands from five European countries, organized into brand groups: The Core Brand group with the Volkswagen brand, Volkswagen Commercial Vehicles, ŠKODA, SEAT, CUPRA; the Progressive Brand group with Audi, Lamborghini, Bentley and Ducati; and the Sport Luxury Brand group with Porsche. The VW brands are legally independent companies. Each of the Group's brands is headed by a brand board member who ensures the independent development and business operations of the respective brand in the context of the Group's requirements. As of September 1, 2022, Oliver Blume (previously and still member of the board of management of Porsche AG) took over from Herbert Diess as chairman of the board of management of Volkswagen AG. In the course of this, the board of management of the VW Group was streamlined from 12 to currently 9 members, and the board departments were reallocated in order to be able to make decisions more quickly and efficiently.

A significant structural risk for the VW Group results from the ongoing transformation of the automotive industry, which is accompanied by far-reaching to disruptive changes. The issues of digitalization and electrification, as well as concepts for autonomous driving, present automotive manufacturers with major technological, structural and financial challenges. In addition, innovation cycles are becoming shorter and new, innovative competitors are entering the market. With the strategy program "NEW AUTO - Mobility for Generations to Come", the VW Group is driving forward the structural change initiated years ago, which is intended to enable the company to successfully master the challenges of the future. To this end, the VW Group plans to invest more than EUR 120 billion of the planned investment budget totaling EUR 180 billion between 2023 and 2027 in the fields of future digitalization and electrification. Against the background of the planned construction of cell factories of the battery start-up PowerCo, and advance payments for securing its raw materials as part of the implementation of the battery strategy, the investment budget was recently increased by around EUR 20 billion.

Within the framework of its global presence, VW has a total of 119 national and international production sites - including Chinese joint ventures - which can be interpreted as a structural advantage in view of the increasing protectionist currents. Even though the supply situation was in part very problematic during the Corona pandemic and in the course of the war in Ukraine, we believe that the VW Group is fundamentally in a position to secure the supply of materials, as well as investments in property, plant and equipment and services, thanks to its globally organized procurement and supply chain management. Potential risks exist with regard to individual suppliers, some of which have significantly lower credit ratings, which may have a comparatively strong position vis-à-vis VW due to product and market-specific factors.

In addition to its own branches, VW relies on a dense network of dealers and importers for its sales in Germany and abroad, which gives the Company good market coverage. Although the sales network is relatively granular, and VW influences the dealerships through dedicated contracts, risks regarding existing self-interest in the automotive trade cannot be ruled out. In addition, there are risks with regard to the planned transformation of sales into a mobility provider, which is being pursued as part of the strategic orientation (functional area strategy NEW SALES 2030, derived from the group strategy NEW AUTO) in order to digitize and improve customer experience in all sales channels through new sales systems and processes. The VW Group sees the acquisition of Europcar in July 2022, which is intended to secure the VW Group a significant share of the promising market for mobility services, as a key milestone in this regard.

As of December 31, 2022, the VW Group employed approximately 676,000 people, 43% of whom were based in Germany. Despite the difficult market conditions, the worldwide total workforce of the VW Group has developed relatively consistently in the past five years, although a slight shift in the workforce abroad can be noted. Against the backdrop of the ongoing transformation of the automotive industry and a dynamically changing world of work, the VW Group has defined the transformation of the workforce as one of the central focus topics of the Group's strategy. Based on this, employees are to be qualified for the future requirements, especially in the area of IT and software development, and are to be bound to the Company in the long term by means of participation rights and fair and transparent remuneration. Nevertheless, risks that may arise from the inadequate availability of sufficiently qualified employees cannot be ruled out.

Overall, we see the short to medium-term structural risk of the VW Group as slightly elevated against the backdrop of the ongoing transformation and the associated challenges. Based on the structural and personnel adjustments and measures already implemented and initiated, we believe that the VW Group is generally in a position to meet the challenges in an adequate manner.

Business risk

The business activities of the VW Group comprise the Automotive and Financial Services divisions. The main business activities of the Automotive Division include the development of vehicles, engines and vehicle software, the production and sale of passenger cars, light commercial vehicles, trucks, buses and motorcycles, as well as the business with original parts, large-bore diesel engines, turbo machinery and driveline components. The Financial Services Division mainly provides sales financing and comprises dealer and customer financing, vehicle leasing, direct banking and insurance business, as well as fleet management and mobility services. In addition to Germany and the Western Europe region, the VW Group's key markets include China, the USA, Brazil, Poland, Mexico, Turkey and the Czech Republic.

In view of the global change in mobility and the ongoing transformation of the automotive industry due to current megatrends such as climate change, reduction of CO_2 emissions, resource consumption, electrification and digitalization, as well as autonomous driving, the VW Group is driving forward its transformation into a software-oriented company with the updated Group strategy "NEW AUTO - Mobility for generations to come". The aim is to position the VW Group for the future against the backdrop of the expected changes to existing business models and the development of new ones, and to establish it as the world's leading provider of sustainable mobility. In doing so, the focus is to be placed even more consistently on profitable growth. For the successful implementation of the strategy, the VW Group has defined twelve Group initiatives, consisting of five tech initiatives and seven basic initiatives.

With regard to the new orientation towards electromobility, digitalization, sustainability, new mobility services and autonomous driving, the VW Group is exposed to considerable technological challenges in addition to high investment and innovation requirements. In order to maintain its strong competitive position, VW sees itself challenged to drive forward the creation of new technologies in e-mobility with intensive research and development work, to establish a future-oriented mechatronics platform (Scalable Systems Platform; "SSP" - successor to the Modular E-Drive Toolkit "MEB") and to develop into a software-oriented company. In this context, the VW Group considers the cost-efficient and sustainable production of battery systems and the expansion of the charging infrastructure as decisive factors for success. In order to finance the transformation and the necessary investments, the VW Group strives to optimize the value chain in a meaningful way, and to leverage synergies. Through the planned optimization of the fixed cost structure, productivity of the plants, costs of procurement, distribution costs and working capital management, costs are to be reduced and efficiency increased in order to create the financial scope.

In addition to technological trends, global economic and geopolitical conditions increasingly pose greater challenges to the automotive industry and the VW Group. As a global supplier of the automotive industry, VW is essentially dependent on well-functioning international economic cooperation. Accordingly, geopolitical conflicts, such as the war between Russia and Ukraine, the terrorist attacks on Israel, the tensions between China and Taiwan, as well as trade barriers as they are currently manifesting in the form of increasing protectionism and anti-globalization tendencies, can lead to declines in demand and earnings, as well as negative FX effects.

As a cyclical company, the VW Group is also more susceptible to economic fluctuations, although its global presence and established brand and product portfolio have a diversifying effect. The economic influence of the largest mobility markets China, USA and Europe, and their diverging developments, also pose increasing challenges. With regard to fiscal year 2022, China was by far the largest main market with a share of around 40% of total vehicles delivered, which is not only due to the current economic situation in China but also to the conflict-prone political, economic and social situation, as well as the very dynamic competitive situation.

In the important Chinese market in particular, more and more competitors are gaining market share, increasing the pressure on prices and consequently on margins for the VW Group. In the other main markets of the USA and Europe, too, the intensity of competition is growing as a result of the transformation of the automotive industry, which could be further intensified by the entry of new competitors, particularly as Chinese carmakers are increasingly pushing into European markets.

As a result of its global orientation, VW faces considerable currency, commodity price and legal risks. However, these are appropriately mitigated by the global infrastructure and the use of adequate hedging instruments.

Essential business risks also arise for the VW Group in operational terms. For example, interruptions to production, or additional costs in complying with quality standards, can have a negative impact on earnings. In view of the close cooperation between OEMs and suppliers, and the high level of complexity in the supplier network, such risks cannot be ruled out entirely. The same applies to the sales network, which consists mainly of independent dealers and importers, resulting in certain dependencies for VW.

A significant risk also exists in the tightening of laws and regulations relating to existing emissions and safety requirements for the automotive industry. The resulting higher costs and investment requirements could have a negative impact on the VW Group's economic position. Increasing restrictions on the use of internal combustion engines, or new measurement methods to map a standardized driving cycle - including tighter Worldwide Harmonized Light Vehicle Test Procedure (WLTP) standards - could also present the automotive industry and VW with additional challenges.

With regard to the diesel issue, the remaining legal risks, recalls and service measures could also lead to further financial burden. We do not believe that the risks of a loss of reputation and to the credibility of the Group and its brands, as well as in general with regard to corporate governance aspects, have been completely averted, but are lower than in previous years.

Overall, we assess the business risk of the VW Group as average to slightly elevated. The business risk is significantly determined by the sales and market development for vehicles, original parts and the demand for related financial services. The Group continues to depend on functioning supplier and sales organization, which faces a variety of challenges in the wake of numerous crises, a global economic slowdown and increasing protectionist tendencies. Moreover, there is a high level of complexity in connection with the Company’s extensive product portfolio. High investments and continuous innovation requirements, as well as increasing competitive intensity in the course of the ongoing transformation, must also be taken into account. As one of the world's largest automakers, the VW Group has a sustainable business model with a diversified product and brand portfolio and high market relevance, which has a stabilizing effect on our assessment. We also take a positive view of the rising share of fully electric vehicles, which amounted to roughly 7% at the end of 2022 (2021: around 5%). We see the modular e-drive system (MEB) and its successor platform "SSP" (Scalable Systems Platform) as playing an important role in this respect, enabling capacities to be used more flexibly throughout the Group and thus achieving synergy effects and efficiency benefits. In view of the potential opportunities and risks, we believe VW to be comparatively well positioned overall to meet future challenges.

Financial risk

For analytical reasons, CRA makes adjustments to the original balance sheet values. The following statements refer to the key figures calculated by CRA according to its methods, unless otherwise stated. Due to these adjustments, and the fact that CRA calculates its own key figures, they may differ from the original values and information provided by VW AG.

Despite the difficult market situation and numerous challenges, the result of our financial ratio analysis for fiscal year 2022 remained stable, confirming that the VW Group still has a highly satisfactory credit rating, which is the basis for the current rating level. The analytical equity ratio increased to 25.6% as of December 31, 2022 (2021: 20.4%). The main reason for the significant increase was the IPO of Porsche AG, which increased equity by EUR 19.1 billion - of which EUR 10.8 billion as minority interests - and the improved overall result compared with the prior year. Net financial liabilities totaled EUR 138.8 billion (2021: EUR 147.9 billion), which was 2.9 times (2021: 4.5 times) EBITDA. By contrast, the analytical net total debt / EBITDA adj. ratio, which relates to total debt less cash and cash equivalents and securities held as current assets, showed a value of 5.9 (2021: 6.8), which is somewhat elevated for the rating level specified here. When interpreting these ratios, however, it is important to bear in mind that they include the capital-intensive financial services business, which is subject to regulatory requirements, and increases the ratio for the specific sector and business model. We have taken this into account in the overall assessment. Excluding the financial services business, the leverage ratios were significantly lower than in the previous year.

The VW Group's primary financial liabilities totaled EUR 205.2 billion as of December 31, 2022 (2021: EUR 210.2 billion). They consisted of bonds (EUR 128.4 billion; 2021: EUR 135.6 billion), liabilities to banks (EUR 42.1 billion; 2021: EUR 38.7 billion), deposit liabilities (EUR 26.7 billion; 2021: EUR 26.8 billion), lease liabilities (EUR 6.4 billion; 2021: EUR 6.2 billion) and other liabilities (EUR 1.6 billion; 2021: EUR 2.8 billion). The VW Group has access to a variety of financial instruments on the money and capital markets. For example, the VW Group made use of auto asset backed securities transactions (auto ABS), which are customary in the industry, and had a framework of EUR 104.9 billion as of December 31, 2022, with EUR 41.3 billion drawn. In addition, there is financing potential in the form of bonds of up to EUR 194.3 billion and commercial paper programs of up to EUR 42.0 billion, of which EUR 95.7 billion and EUR 8.7 billion, respectively, had been drawn down as of December 31, 2022. Both the debtor structure and the maturity structure of funding show good diversification overall, although we consider the financial liabilities maturing within one year to be higher at EUR 83.4 billion.

In addition, there are contingent liabilities of EUR 10.6 billion (2021: EUR 9.7 billion), which, in addition to liabilities from guarantees and warranty agreements, primarily comprise possible charges arising from tax and customs matters and legal disputes with third parties. Of this amount, EUR 4.2 billion (2021: EUR 4.3 billion) relates to the diesel issue. In addition, there are other financial obligations of EUR 35.4 billion (2021: EUR 34.7 billion) from purchase commitments, committed loans and other financial obligations.

To safeguard its solvency, Volkswagen AG has a syndicated credit line of EUR 10.0 billion which had not been drawn down as of December 31, 2022. In addition, there were further syndicated credit lines totaling EUR 12.4 billion as well as bilateral, confirmed credit lines with national and international banks at other Group companies, of which EUR 0.4 billion and EUR 0.6 billion respectively were utilized as of the end of 2022.

The existing financing potential has a stabilizing effect on our assessment of the financial risk, especially since the VW Group recorded a net cash flow of EUR -4.7 billion in the first nine months of the current fiscal year. This was mainly due to negative changes in working capital resulting from a higher build-up of inventories, receivables and leased assets, as well as a continued high level of capital expenditure. While net cash flow in the Financial Services Division decreased significantly to EUR -9.7 billion (9M 2022: EUR 4.4 billion), the Automotive Division recorded a slightly lower development of net cash flow compared with the prior-year period at EUR 4.9 billion (9M 2022: EUR 5.6 billion). The noticeable reduction in net cash flow in the Passenger Cars business area was partially offset by the improvement in net cash flow in the Commercial Vehicles business area. For the full year 2023, the VW Group expects net cash flow in the Automotive segment to be below expectations but above the prior-year figure - at the lower end of the range of EUR 6 to 8 billion - due to the disruptions in the logistics chain and the resulting build-up of working capital. This already includes EUR 5 billion for M&A transactions.

Against the backdrop of its currently somewhat strained internal financing power, the VW Group recorded an increase in financial debt to EUR 229.2 billion as of Sept. 30, 2023 (Dec. 31, 2022: EUR 205.2 billion), primarily attributable to the Financial Services Division. According to the cash flow statement as of September 30, 2023, gross liquidity (total of cash, cash equivalents, securities and time deposits, as well as loans receivable from affiliated companies and joint ventures) increased to EUR 86.1 billion at Group level (December 31, 2022: EUR 79.5 billion), which we continue to view as a sufficiently solid figure. After deducting financial debt, net liquidity amounted to EUR -143.1 billion (Dec. 31, 2022: EUR -125.8 billion). The Automotive Division reported net liquidity of EUR 36.7 billion as of September 30, 2023 (December 31, 2022: EUR 43.0 billion), which returned to normal partly due to the payment of the special dividend in connection with the Porsche IPO (following a corresponding inflow in 2022).

Overall, the VW Group continues to have a satisfactory financial and liquidity position, which represents a solid basis with regard to the high capital requirements and supports the current rating level. Nevertheless, economic fluctuations, declines in demand and increased financial requirements in conjunction with the high level of interest rates must be taken into account with regard to the management of current and future challenges - particularly in the course of the ongoing transformation. The VW Group's solid earnings and internal financing power, its available financial room for maneuver, the relatively balanced term structure of its financing and its ability to access the capital markets mean that the risks that can be derived from this appear manageable, although negative effects on our overall rating assessment cannot be ruled out with regard to a possible increase in debt and a resulting deterioration in the financial ratios.

Further ratings

In addition to the rating of Volkswagen AG the following Issuer and its issues (see below), has been rated.

- Volkswagen International Finance N.V.

Due to the corporate, strategic, liability, financial, economic and performance-related interdependencies of the aforementioned subsidiary (100% subsidiary of VW AG and consolidated in the group annual accounts) we derive the unsolicited issuer rating of these subsidiary from the unsolicited issuer rating of VW AG and set it equal to its rating of BBB+ / stable.

Based on the long-term issuer rating and taking into account our liquidity analysis, the short-term rating of the VW AG and the above-mentioned subsidiary was set at L3 (standard mapping), which corresponds to an adequate level of liquidity assessment for one year.

The rating objects of the issue rating are exclusively long-term senior unsecured issues, denominated in euro, issued by Volkswagen International Finance N.V., which are included in the list of ECB-eligible marketable assets.

VW AG is guarantor with respect to the issues that have been issued by Volkswagen International Finance N.V. under the Debt Issuance Programme (DIP), with the latest basis prospectus dated 22.03.2023 and the first and second supplement, dated 12.05.2023 and 08.09.2023 respectively.

We have provided the long-term local currency senior unsecured notes issued by Volkswagen International Finance N.V. with an unsolicited issue rating of BBB+ / stable.

Long-term local currency senior unsecured notes issued by Volkswagen International Finance N.V., which have similar conditions to the current DIP programme, denominated in Euro and included in the list of ECB-eligible marketable assets, generally receive the same ratings as the current LT LC senior unsecured notes issued under the DIP programme. Notes issued under the programme in any currency other than euro, or other types of debt instruments, have not yet been rated by CRA. For a list of all currently valid ratings and additional information, please consult the website of Creditreform Rating AG.

Table 6: Overview of CRA Ratings I Source: CRA

Rating Category	**Details**	
	Date of rating committee	Rating
Volkswagen AG	02.11.2023	BBB+ / stable / L3
Volkswagen International Finance N.V.	02.11.2023	BBB+ / stable / L3
Long-term Local Currency (LC) Senior Unsecured Issues issued by Volkswagen International Finance N.V.	02.11.2023	BBB+ / stable
Other	--	n.r.

Financial ratio analysis

Table 7: Financial key ratios |Source: VW Group Report 2022, structured by CRA

Asset structure	2019	2020	2021	2022
Fixed asset intensity (%)	35.50	35.40	36.97	35.01
Asset turnover	0.59	0.50	0.54	0.57
Asset coverage ratio (%)	110.38	113.14	109.52	117.63
Liquid funds to total assets	9.70	12.35	13.13	13.15
Capital structure				
Equity ratio (%)	18.36	18.48	20.41	25.59
Short-term debt ratio (%)	38.14	37.10	34.67	36.24
Long-term debt ratio (%)	20.83	21.57	20.08	15.59
Capital lock-up period (in days)	32.86	37.14	34.46	37.58
Trade-accounts payable ratio (%)	5.17	5.09	4.98	5.69
Short-term capital lock-up (%)	44.09	49.38	41.44	41.98
Gearing	3.92	3.74	3.26	2.39
Leverage	5.26	5.43	5.13	4.33
Financial stability				
Cash flow margin (%)	17.97	16.94	15.04	9.80
Cash flow ROI (%)	10.31	8.47	7.94	5.42
Total debt / EBITDA adj.	8.07	10.01	8.12	7.14
Net total debt / EBITDA adj.	7.11	8.49	6.78	5.88
ROCE (%)	9.58	5.08	8.59	9.86
Total debt repayment period	8.58	10.08	8.75	30.24
Profitability				
Gross profit margin (%)	100.00	100.00	100.00	100.00
EBIT interest coverage	6.72	3.99	9.56	13.60
EBITDA interest coverage	16.38	15.23	23.20	30.76
Ratio of personnel costs to total costs (%)	16.99	18.18	17.46	16.83
Ratio of material costs to total costs (%)				
Cost income ratio (%)	93.58	96.13	92.81	92.54
Ratio of interest expenses to total debt (%)	0.70	0.60	0.48	0.40
Return on investment (%)	3.58	1.89	3.58	3.06
Return on equity (%)	17.17	10.81	17.22	14.02
Net profit margin (%)	5.55	3.96	6.17	5.67
Operating margin (%)	6.71	4.11	7.63	8.01
Liquidity				
Cash ratio (%)	15.44	20.50	24.17	15.94
Quick ratio (%)	84.33	91.01	95.78	93.80
Current ratio (%)	169.08	174.12	181.78	179.35

Appendix

Rating history

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

Table 8: Corporate Issuer Rating of Volkswagen AG

Event	Rating created	Publication date	Result
Initial rating	07.06.2017	23.06.2017	BBB+ / stable

Table 9: Corporate Issuer Rating of Volkswagen International Finance N.V.

Event	Rating created	Publication date	Result
Initial rating	07.12.2018	14.12.2018	BBB+ / stable

Table 10: LT LC Senior Unsecured Issues issued by Volkswagen International Finance N.V.

Event	Rating created	Publication date	Result
Initial rating	07.12.2018	14.12.2018	BBB+ / stable

Table 11: Short-term Issuer Ratings of Volkswagen AG and Volkswagen International Finance N.V.

Event	Rating created	Publication date	Result
Initial rating	02.11.2023	www.creditreform-rating.de	L3

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, which 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
Non-financial Corporate Issue Ratings	1.0	October 2016
Rating Criteria and Definitions	1.3	January 2018

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

The rating was carried out by the following analysts:

Name	Function	Mail-Address
Artur Kapica	Lead-analyst	A.Kapica@creditreform-rating.de
Natallia Berthold	Analyst	N.Berthold@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 2 November 2023, the analysts presented the rating to the rating committee and the rating was determined. The rating result was communicated to the company on 3 November 2023. 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.

Creditreform Rating AG ensures that the provision of ancillary services does not present conflicts of interest with its credit rating activities and discloses in the final ratings reports any ancillary services provided for the rated entity or any related third party. The following ancillary services were provided for the rated entity or for third parties associated with the rated entity:

Credit Service ancillary services for the rated entity.

For the complete list of provided rating and credit service ancillaries please refer to the Creditreform Rating AG's website: https://www.creditreform-rating.de/en/about-us/regulatory-requirements.html#non-core-business-activities.

Rules on the presentation of credit ratings and rating outlooks

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

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

Corporate issuer rating:

1. Annual report

2. Website

3. Internet research

Corporate issue rating:

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

2. Documents on issues / instruments

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

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

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

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

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

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

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

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

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

Disclaimer

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Future events are uncertain, and forecasts are necessarily based on assessments and assumptions. This rating is therefore no statement of fact, but an opinion. For this reason, Creditreform Rating AG cannot be held liable for the consequences of decisions made on the basis of any of their ratings. Neither should these ratings be construed as recommendations for investors, buyers or sellers. They should only be used by market participants (entrepreneurs, bankers, investors etc.) as one factor among others when arriving at corporate or investment decisions. Ratings are not meant to be used as substitutes for one's own research, inquiries and assessments.

We have assumed that the documents and information made available to us by the client are complete and accurate and that the copies provided to us represent the full and unchanged contents of the original documents. Creditreform Rating AG assumes no responsibility for the true and fair representation of the original information.

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