

02 July 2024 – Neuss, Germany

## Rating Action / Update:

### Creditreform Rating has adjusted the unsolicited corporate issuer rating of Deutsche Telekom AG, from **BBB+ / positive** to **A- / stable**

Creditreform Rating (CRA) has adjusted the unsolicited, public corporate issuer ratings of Deutsche Telekom AG and Deutsche Telekom International Finance B.V. – together referred to as DTAG, Company or the Company – as well as the unsolicited corporate issue rating of long-term local currency senior unsecured notes issued by Deutsche Telekom AG and Deutsche Telekom International Finance B.V. from **BBB+** to **A-**. The initial unsolicited short term ratings for the issuers has been set to **L2** (high level of liquidity). Additionally, CRA has provided the above rating objects with a stable outlook.

Two major factors were of significance for the adjustment of the rating. *Firstly*, as already anticipated in our last rating action (dated May 2023), DTAG was able to further improve its earnings and profitability ratios as compared to the company's 2022 figures and furthermore was able to significantly reduce its indebtedness and thereby the company's leverage. While this development was significantly boosted by positive earnings and cash effects from DTAG's sale of 51% of the GD Tower business unit (see also the section Business development and outlook for further details), the company was also able to improve key financial metrics on an organic, meaning ongoing and sustainable, basis. We view it distinctly positively from a ratings perspective, that in addition, DTAG realised a reduction in capital expenditures (capex) further freeing funds to reduce the company's debt. *Secondly*, we expect a further positive trend for key rating metrics for the company in the upcoming two business years. Importantly, we expect DTAG to be able to maintain the company's capex on a stable level for the 2024 and 2025 business years, compared to the reduced values of 2023. In turn, this limits pressure on the company to increase its indebtedness, even though DTAG plans on further expanding direct and indirect payments to the company's shareholders. In combination with the positive forecasts for earnings (especially EBITDA), and the company's historic ability to achieve its own forecasts and financial targets, we expect the company to be able to further improve key financial metrics in the upcoming business years. In combination with DTAG's improvements in earnings metrics, leverage and balance-sheet ratios for 2023, this led to the adjustment in the company's rating grade to **A-**.

### Current relevant factors for the rating

The following considerations were of specific relevance for the rating assessment:

- + Positive business development and further strengthening of financial performance in 2023
- + DTAG achieved its targeted lower cash capex, which in combination with the proceeds from the GD Tower sale and the improved financial performance enabled the company to distinctly deleverage
- + Positive expectations for the development of key credit rating metrics for the upcoming two business years
- + DTAG proved long-term financial resilience through the past global crises and the following impacts on the global economy

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- Substantially increased shareholder remuneration (dividends and share buybacks) limits headroom for a further reduction of the company's indebtedness and could delay the successful implementation of the company's financial strategy
- DTAGs leverage ratios are still negatively influenced by the integration of Sprint in T-Mobile US (TMUS), which is expected to continue until the end of 2024
- Financing costs have increased and will put pressure on the company's financial result, especially when debt financed at historically low costs has to be refinanced over the upcoming years

**ESG-criteria:**

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

Against the backdrop of global emission reduction commitments to prevent climate change, DTAG has formulated and already implemented targets and measures that can actively contribute to climate protection. The company plans to reduce its Scope 1 and 2 emissions of 217 kt CO<sub>2</sub> (2022: 233 kt) to net zero by 2025, with 95% of the emissions compared to 2017 to be actually reduced and only the remaining 5% offset. The achievement of these plans can effectively reduce the company's transition risk, thereby limiting potential future credit risks, which in general could arise from the transition to a carbon neutral economy.

Telekom has set itself the goal of being climate-neutral by 2040 (Scopes 1-3), which is to be achieved, among other things, through improved information management on supplier emissions (and corresponding supplier management). Target achievement in the area of energy consumption and CO<sub>2</sub> emissions is also integrated into the variable compensation of the Board of Management, which we consider to be clearly positive for the probability of achieving these targets. In addition, the Group also measures and manages risks from climate change and has integrated this risk measurement into its financial risk and opportunity management, applying the standards of the TCFD (Task Force on Climate Related Financial Disclosures).

Due to the number of customers and the business model as a telecommunications company, data and consumer protection are relevant factors for DTAG. Despite various measures in the area of data privacy and cyber security, there were two cases of cybercrime in 2021 and 2023 in which millions of customer data of T-Mobile US (TMUS) were affected. Both cases directly impact financial performance of TMUS due to costs resulting from legal proceedings and court settlements. DTAG points out, that the 2023 instance could still lead to significant expenditures. For upcoming rating actions, we will monitor the developments in this area closely.

Overall, we do not see any rating-relevant risks from the ESG area for DTAG. In particular, we assess the company's management of climate risks and the integration of these aspects into Group management as positive from an ESG and also credit perspective, without deriving a significant impact on the rating.

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](#).

**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.

## Rating result

The current rating of A- attests Deutsche Telekom AG a high level of creditworthiness and a low default risk. The rating result is based on the company's strong market position, the resulting operating performance and its strong financial profile.

We note positively, that DTAG was able to further improve its operating performance over the 2023 business year, with subsequent positive effects on the development of key financial metrics. In addition to that, the sale of 51% of the former subsidiary GD Towers led to both extraordinary profits and an increased cash flow for the company. As communicated and in line with the company's financial strategy, DTAG successfully used a proportion of the proceeds to prematurely repay debt and thereby was able to notably deleverage. A further contributing factor to the rating result was, that DTAG was able to decrease its cash capex as planned, which further freed funds to deleverage. From a rating's perspective, the further improvement in operational performance in combination with the reduction of the company's indebtedness and the achievement of important forecasts for financials were positive contributing factors to the change in the rating grade.

In addition to that, the company also expects a further improvement of profitability and leverage metrics through the utilization of synergy effects after the merger of T-Mobile US and Sprint, stable investment needs and an increase in sustainable service revenues. We currently expect these forecasts to be achievable and view the company's historic track record with regards to its financial strategy positively, which is why the expected positive future development is a further contributing factor to our rating result. Other stabilizing factors were the company's good access to capital markets, which has been proven over many years, and the extensive liquid funds and credit facilities available to service financial liabilities.

On the other hand, a dampening factor in our rating's assessment is the substantial increase in shareholder remuneration for the 2023 and 2024 business years, which ties up liquidity and significantly reduces the company's ability to further deleverage. Furthermore, leverage still is not on the level that DTAG plans to achieve since the Sprint-integration into TMUS, which makes it necessary for the company to withhold funds in order to achieve the targeted leverage ratios in the planned timeframe (until the end of 2024). Even though the increase in interest rates currently levels off, effects of rising interest rates will affect the company's financial performance over the upcoming years through refinancing costs that are higher than the historically low financing costs of the past years. However, based on the company's strong cash generation abilities from its operations as well as its good access to the capital markets, we assess the resulting risks as manageable for the company.

## Outlook

The one-year outlook of the rating has been changed to stable. For the next business year, we expect the company to further develop positively in its operating performance, driven by the utilization of synergy effects and a further increase in sustainable service revenues. We expect these developments to lead to a further improvement in key operational metrics of the company, while on the other hand investment needs currently are limited. In our view, this can enable the company to reduce its indebtedness, which in general we view positively from a rating's perspective. On the other hand, we expect DTAG to utilize large proportions of free funds to remunerate the company's shareholders. We currently do not expect that these payments endanger the achievement of key company targets – such as the leverage-target of net financial debt to EBITDA of  $\leq 2.75x$  – but these cash outflows limit the positive capabilities DTAG has in

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.

the rating context. Overall, we expect a further improvement in operational performance, which will presumably mostly benefit equity holders of the company, while we expect only a slight improvement in metrics, which are of importance to debt holders – thereby leading to the stable outlook of the rating.

**Best-case scenario: A-**

In our best-case scenario, we assume a stable rating of A-. For this scenario, we assume a further improvement in the company's financial performance, driven by positive business developments as well as an increase in profitability. Furthermore, we assume that DTAG is able to maintain its investments at a stable level, which subsequently enables a further reduction of the company's indebtedness. However, for the upcoming year we see very limited possibilities for a further upgrade of the rating grade, since even in our best-case scenario we deem it likely, that DTAG uses a large proportion of its funds for shareholder remuneration, thus limiting positive effects on our rating.

**Worst-case scenario: BBB+**

In our worst-case scenario, we assume a rating of BBB+. For this scenario, we assume that DTAG is not able to fully achieve its targeted improvements in operational performance but maintains its plans for dividend payments and share buybacks. Furthermore, in our worst-case scenario for one year we also assume the necessity to increase investments, which in this scenario would be necessary in order to resume the company's market position as a high quality network provider, which ultimately results in an increase in the company's leverage. The combination of a decline in operational performance and an increase in leverage ultimately leads to the worsened rating evaluation in this scenario.

## Business development and outlook

Over the course of the 2023 business year, DTAG generated revenues of EUR 111.97 bn., a decrease of -2.0% compared to the previous year (EUR 114.20 bn). Major drivers for this decrease were exchange rate effects, changes in the scope of consolidation and a reduction in revenues through lease-deals to customers. DTAG has reduced these revenues in a structured manner in the past and expects the lease-deals to be finalised by the end of the year. Since 64.7% of the company's revenues were earned in the North American business unit T-Mobile US, exchange rate effects of the Euro compared to the US Dollar burdened reported Euro-figures – reported US-revenues decreased by 4.0%, partially due to exchange rate effects. Organically, ignoring exchange rate effects and changes in the scope of consolidation, DTAG's revenues marginally increased by 0.6% compared to 2022. While US revenues on an organic basis decreased by 0.8%, the German business unit was able to increase revenues (organically) by 2.1%.

Table 1: Financials of Deutsche Telekom AG | Source: Deutsche Telekom AG Annual report 2023, standardized by CRA

Deutsche Telekom AG Selected key figures of the financial statement analysis Basis: Annual accounts and report as of 31.12.2023 (IAS, Group)	CRA standardized figures <sup>1</sup>	
	2022	2023
Sales (million EUR)	114,197	111,970
EBITDA (million EUR)	43,491	58,468
EBIT (million EUR)	15,856	34,493
EAT (million EUR)	9,482	21,992
EAT after transfer (million EUR)	8,001	17,788
Total assets (million EUR)	275,293	269,554
Equity ratio (%)	31.54	34.28
Capital lock-up period (days)	38.29	35.13
Short-term capital lock-up (%)	23.67	17.30
Net total debt / EBITDA adj. (factor)	4.19x	3.72x
Ratio of interest expenses to total debt (%)	3.01	4.02
Return on Investment (%)	4.87	10.42

The following results are based on CRAs standardized figures that – for analytical purposes – can deviate from DTAGs reported metrics. DTAG's earnings figures for 2023 are strongly influenced by the net positive result of DTAG's sale of 51% of the stake in the GD Tower business early in 2023. The net result of this sale amounted to EUR 15.9 billion and DTAG received a cash influx of EUR 10.7 billion. Overall, the positive earnings developments in 2023 consequently influenced key rating metrics positively.

Following this sale, the company's EBITDA increased by 34.4%, and the EBITDA margin grew by 14 percentage points from 38.1% to 52.2%. Organically, the company's reported adjusted EBITDA (after Leases) increased by 4.0%, with positive effects both from the US and ex-US business units. Also influenced by the strong increase in EBITDA, the important credit rating metric of net total debt to EBITDA decreased from 4.19x to 3.72x. In addition to the development of EBITDA, DTAG also actively decreased its leverage by utilizing the cash proceeds of the GD Tower sale to prematurely repay debt. Furthermore, DTAG reduced its investments in tangible and intangible assets, reducing the reported Cash Capex from EUR 21.0 billion to EUR 16.6 billion. In doing so, DTAG achieved its communicated plans for the reduction in investments, which reduced the necessity to take out new debt, freed funds for payments to investors and also contributed to a decrease of total assets by -2.1%, thereby positively influencing balance-sheet-related credit metrics. The reduction in capital expenditures can primarily be explained by lower investment needs for the expansion of the US 5G networks. On the other hand, remuneration of Shareholders amounting to a total of EUR 16.7 billion significantly limited the company's abilities to even further decrease its indebtedness.

The increase in EBIT from EUR 15.9 billion to EUR 34.5 billion is mostly attributable to the aforementioned effects on DTAG's EBITDA, however, depreciation and amortization also decreased

<sup>1</sup> 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 takes all balance sheet liabilities into account. Therefore, the key financial figures shown often deviate from the original values of the company.

by more than EUR 3.5 billion, primarily due to the ongoing strategic withdrawal from the terminal equipment lease business in the US business line.

While, in result, the company's net profit benefitted from the aforementioned effects, conversely, the net financial result dropped from EUR -4.4 billion to EUR -8.8 billion. The major driver for this decrease was a change in the discount rate used for valuing associates and joint ventures, primarily the now not any longer fully consolidated GD Towers business. Positive effects on net profit outweighed, however, negative effects substantially. Accordingly, earnings after taxes and transfer more than doubled from EUR 8.0 billion to EUR 17.8 billion. Accordingly, due to these positive results, as well as the decrease in total assets, return on investment more than doubled from 4.87% to 10.42%.

Following the decrease in total assets as well as the strong profit, DTAG's equity ratio improved by 2.74 percentage points from 31.54% to 34.28%. On the other hand, even though debt was reduced, the effects on the company's financial result led to a deterioration of the ratio of interest expenses to total debt from 3.01% to 4.02%, which has to be seen as a strongly negative effect on this key rating metric.

Table 2: The development of business of Deutsche Telekom AG | Source: Annual Report 2023, reported information

Deutsche Telekom AG				
In million EUR	31.03.2023	31.03.2024	Δ	Δ %
Sales	27,839	27,942	103	0.37%
EBITDA	24,046	11,760	-12,286	-51.10%
EBIT	18,015	5,686	-12,329	-68.44%
EAT	15,360	1,982	-13,378	-87,10%

During the first quarter of 2024, DTAG was further able to improve key earning metrics on an *organic* basis. Reported figures, however, showed a deterioration in earnings, which can be explained by the extraordinary earnings effects of last year's sale of the GD Tower business.

Revenues increased only marginally, driven by the positive effect of increased service revenues and the counteracting negative effect of changes in EUR-USD-exchange rates. Organically, revenues increased by 1.6% as compared to last year's first quarter. Excluding extraordinary items and on an organic basis, reported EBITDA (After Leases) increased by 5.8%, thereby indicating an improvement in the company's efficiency.

In comparison with the value at year-end of 2023, reported net financial debt stood at EUR 133.1 billion, an increase EUR 0.8 billion (FY 2023: EUR 132,3 billion). Negative drivers for this increase were primarily Telekom US's share buy-back programs and exchange rate effects, while the company's cash flow generation and Deutsche Telekom's sale of T-Mobile US shares influenced net financial debt positively. This led to an almost constant reported ratio of net financial debt to EBITDA of 2.81x (FY 2023: 2.82x). The company's reported equity ratio increased by 0.2 percentage points to 31.6% (FY 2023: 31.4%), since the increase in equity, which was driven by the net profit of the period, outweighed a slight increase in total assets.

For the 2024 business year, DTAG expects increases in both revenue and EBITDA generation. The company expects the largest proportion of revenue increases to stem from the US business segment, driven by an increase in sustainable service revenues. As of 31 March 2024, DTAG expects an adjusted EBITDA (after leases) of EUR 42.9 billion for 2024, an increase of 5.7% as

compared to the 2023 pro-forma figure of EUR 40.6 billion. DTAG expects the increase in EBITDA to be realized by utilizing synergy effects after the merger of T-Mobile US and Sprint in 2020. As could already be seen in the company's reported Q1 2024 figures, DTAG expects its non-adjusted earnings figures to decrease for 2024, following the extraordinary earnings effects of the GD Tower sale in early 2023.

The company expects its reported ratio of net financial debt to EBITDA to return to the upper bound of DTAG's target corridor (2.25x-2.75x). While the prognosis of a stable Cash Capex and the increase in EBITDA can have a positive influence on this ratio, the company's plans for shareholder remuneration in 2024 significantly burden cash availability and hence limit DTAG's ability to even further improve this key credit metric. In share buybacks alone, DTAG expects to spend EUR 16.1 billion, while in 2023 the company bought back own shares in the value of EUR 12.7 billion. From a credit rating's perspective, we view this increase in shareholder remuneration critically, since it limits the company's ability to further improve leverage ratios. However, given DTAG's positive track record in achieving (or over-achieving) its own forecasts, we currently do not expect a worsening in key credit rating metrics, which is why we currently do not see a strong negative effect on our rating from the increase in shareholder remuneration.



## Further ratings

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

- Deutsche Telekom International Finance B.V.

Due to the corporate, strategic, liability, financial, economic and performance-related interdependencies of the aforementioned subsidiary (which is a direct 100% subsidiary of Deutsche Telekom AG and which has been consolidated into the group annual accounts) we derive the unsolicited issuer rating of this subsidiary from the unsolicited issuer rating of Deutsche Telekom AG and set it equal to its rating of **A-/stable**.

It should be noted at this point that Deutsche Telekom AG's current debt issuance program, dated April 4, 2024, no longer mentions Deutsche Telekom International Finance B.V. (DTIF) as a possible issuer. This may indicate a possible future change in the relationship between DTAG and DTIF. We will continue to monitor this factor for future rating actions.

Based on the long-term issuer rating and taking into account our liquidity analysis, the short-term rating of Deutsche Telekom AG and the above-mentioned subsidiary was set at **L2** (standard mapping), which corresponds to a high level of liquidity for one year.

The rating objects of the issue ratings are exclusively long-term senior unsecured issues, denominated in euro, issued by Deutsche Telekom AG and the above-mentioned subsidiary, which are included in the list of ECB-eligible marketable assets.

Deutsche Telekom AG is guarantor in respect of the issues that have been issued by the above listed group companies under the Debt Issuance Programme (DIP), with the last basis prospectus of 04.04.2024 and with the last amendment of 28.05.2024.

We have provided the long-term local currency senior unsecured notes issued by Deutsche Telekom AG and the above-mentioned subsidiary with an unsolicited rating of **A- / stable**. The ratings are based on the (respective) corporate issuer ratings.

Long-term local currency senior unsecured notes issued by Deutsche Telekom AG and the above-mentioned subsidiary, 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 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 3: Overview of CRA Ratings | Source: CRA

Rating Category	Details	
	Date of rating committee	Rating
Deutsche Telekom AG	02.07.2024	<b>A- / stable / L2</b>
Deutsche Telekom International Finance B.V.	02.07.2024	<b>A- / stable / L2</b>
Long-term Local Currency (LC) Senior Unsecured Issues issued by Deutsche Telekom AG and Deutsche Telekom International Finance B.V.	02.07.2024	<b>A- / stable</b>
Other	--	<b>n.r.</b>



## Appendix

### Rating history

The rating history is available under the following [link](#).

Table 7: Corporate Issuer Rating of Deutsche Telekom AG

Event	Rating created	Publication date	Result
Initial Rating	22.03.2017	31.03.2017	BBB+ / stable

Table 8: Corporate Issuer Rating of Deutsche Telekom International Finance B.V.

Event	Rating created	Publication date	Result
Initial rating	31.10.208	07.11.2018	BBB+ / stable

Table 9: LT LC Senior Unsecured Issues issued by Deutsche Telekom AG

Event	Rating created	Publication date	Result
Initial rating	25.10.2019	05.11.2019	BBB+ / stable

Table 10: LT LC Senior Unsecured Issues issued by Deutsche Telekom International Finance B.V.

Event	Rating created	Publication date	Result
Initial rating	31.10.2018	07.11.2018	BBB+ / stable

Table 11: Short-term issuer ratings of Deutsche Telekom AG and Deutsche Telekom International Finance B.V.

Event	Rating created	Publication date	Result
Initial rating	02.07.2024	<a href="http://www.creditreform-rating.de">www.creditreform-rating.de</a>	L2

### Regulatory requirements

The rating<sup>2</sup> 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:

With Rated Entity or Related Third Party Participation	No
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<sup>2</sup> 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.

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.

The documents submitted 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
<a href="#">Corporate Ratings</a>	2.4	July 2022
<a href="#">Corporate Short-Term Ratings</a>	1.0	June 2023
<a href="#">Non-financial Corporate Issue Ratings</a>	2.0	March 2024
<a href="#">Rating Criteria and Definitions</a>	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
Esra Höffgen	Lead-analyst	E.Hoeffgen@creditreform-rating.de
Holger Becker	Analyst	H.Becker@creditreform-rating.de

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

Name	Function	Mail-Address
Stephan Giebler	PAC	S.Giebler@creditreform-rating.de

On 2 July 2024, the analysts presented the rating to the rating committee and the rating was determined. The rating result was communicated to the company on 02 July 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.

Creditreform Rating AG guarantees that the provision of ancillary services does not cause a conflict of interest with its rating activities and discloses in the final rating report which ancillary services were provided for the rating object or for third parties associated with it. The following ancillary services were provided for this rating object or for related third parties:

Credit Service ancillary services for the relevant rating object.

The final list of rating-related and credit services can be viewed on the Creditreform Rating AG website at <https://www.creditreform-rating.de/de/wir-ueber-uns/regulatorische-anforderungen.html#nebendienstleistungen>.

#### 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

Any rating performed by Creditreform Rating AG is subject to the Creditreform Rating AG Code of Conduct, which has been published on the web pages of Creditreform Rating AG. In this Code of Conduct, Creditreform Rating AG commits itself – systematically and with due diligence – to establish its independent and objective opinion as to the sustainability, risks and opportunities concerning the enterprise or the issue under review.

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.

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