

An S&P Global Second Party Opinion (SPO) includes S&P Global Ratings' opinion on whether the documentation of a sustainable finance instrument, framework, or program, or a financing transaction aligns with certain third-party published sustainable finance principles. Certain SPOs may also provide our opinion on how the issuer's most material sustainability factors are addressed by the financing. An SPO provides a point-in-time opinion, reflecting the information provided to us at the time the SPO was created and published, and is not surveilled. We assume no obligation to update or supplement the SPO to reflect any facts or circumstances that may come to our attention in the future. An SPO is not a credit rating, and does not consider credit quality or factor into our credit ratings. See [Analytical Approach: Second Party Opinions](#).

## Second Party Opinion

# DSB's Green Bond Framework

Jan. 4, 2024

**Location:** Denmark

**Sector:** Infrastructure Transportation

### Primary contact

**Rita Ferreira**

Madrid

+34 914233216

rita.ferreira

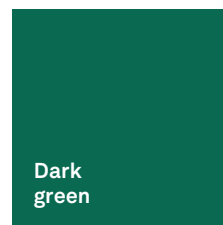
@spglobal.com

## Alignment With Principles

Aligned = ✓ Conceptually aligned = ○ Not aligned = ✗

✓ Green Bond Principles, ICMA, 2021 (with June 2022 Appendix 1)

See [Alignment Assessment](#) for more detail.



Activities that correspond to the long-term vision of a low-carbon climate resilient future.

Our [Shades of Green Analytical Approach](#) >

## Strengths

**Electric rail and train transport is generally considered the most climate and pollution friendly mode of land transportation, and zero direct (tailpipe) emission passenger transport is essential to meet 2050 benchmarks.** Danske Statsbaner (DSB) will use the majority of proceeds under the framework to purchase electrically powered trainsets, and invest in workshops to facilitate the transition from diesel to electric trains.

**DSB considers its physical risks in its operations and value chain emissions.** The company includes physical climate change factors in its decision-making process related to new facilities. Moreover, Banedanmark (the owner of the rail network) has established contingency plans for DSB's tracks focused specifically on precipitation, which is one of the key climate risks in Denmark. The company expects suppliers to minimize the total carbon footprint and environmental impact caused by the choice of materials and production methods, and has dialogues with its suppliers, with the aim of achieving greenhouse gas (GHG) reductions.

## Weaknesses

No weaknesses to report.

## Areas to watch

**DSB will use part of the proceeds under the framework for new workshops, necessary to maintain its electric rolling stock financing.** This implies new buildings, which may involve energy-intensive construction, and lack minimum embodied emissions and energy performance criteria.

## Eligible Green Projects Assessment Summary

Eligible projects under the issuer's green finance framework are assessed based on their environmental benefits and risks, using Shades of Green methodology.

### Clean Transportation

 Dark green

Investments in train coaches and electric trainsets, and major overhauls, improvements, and maintenance of rolling stock with zero direct (tailpipe) carbon dioxide (CO<sub>2</sub>) emission.

Investments in infrastructure for rail transport and associated subsystems, where the activity are connected to electric train operations, including among other things, stations, terminals, and rail service facilities.

Investments in workshops that are dedicated to maintenance of electric locomotives and trainsets and which will at minimum have, or are designed to achieve, a German Sustainable Building Council (DGNB) Gold certificate for sustainable construction or equivalent certification.

### Renewable Energy

 Dark green

Investment in solar photovoltaic (PV) technology, such as on-site solar rooftop panels.

See [Analysis Of Eligible Projects](#) for more detail.

## Issuer Sustainability Context

This section provides an analysis of the issuer's sustainability management and the embeddedness of the financing framework within its overall strategy.

## Company Description

DSB is an independent public railway company 100% owned by the Danish state through the Ministry of Transport. With approximately 6,000 employees, it provides long-distance, regional, and S-Train passenger train services (in Greater Copenhagen), and repair and maintenance services in Denmark and Sweden. It owns 196 stations. In 2022, it generated €1.4 billion of revenue (DKK10.8 billion, based on the company's reported accounts).

## Material Sustainability Factors

### Physical Climate Risk

Acute physical risks such as storms, wildfires, and floods can impair, disrupt, or even destroy assets, limiting the availability of essential infrastructure, including roads and mass transit systems. Both acute and chronic risks--such as changing temperature and precipitation patterns and sea level rise--can shorten the useful life of vehicles and infrastructure. Transportation issues can lead to major impacts for communities and regions, which can be much broader if key assets like bridges, tunnels, or ports are unavailable for extended periods. The increasing frequency and severity of acute physical risks and the assets' long-term nature and fixed locations point to growing materiality. The impacts of physical climate risks can extend beyond the assets themselves and impair the infrastructure provider's region or service area, which could have more prolonged impacts on demand, potentially

affecting stakeholders. According to The European Climate Adaptation Platform ([Climate-ADAPT](#)), the main risks to Denmark are precipitation, flooding, and increased temperatures, which can damage infrastructure and transport disruptions.

## Climate Transition Risk

Transportation is the fastest-growing source of emissions worldwide, and transportation users like autos, airlines, and freight account for around a quarter of global GHG emissions, according to the International Energy Agency (IEA). Infrastructure design and condition can affect GHG emissions (such as if rail lines are electrified or the availability of ship-to-shore power at ports) and existing transportation infrastructure might require investment to support wider decarbonization trends. Infrastructure development also produces significant emissions due to land use changes and reliance on carbon-intensive materials such as steel and cement. In Denmark, the transition to a low-carbon future will require substantial emissions improvements in the transport, energy, and agriculture sectors to ensure it reduces its emissions by 70% by 2030 and achieves climate neutrality by 2050 (see also the country's "[Climate Program 2020](#)" submission to the UNFCCC under the Paris Agreement).

## Pollution

Pollution can take the form of airborne emissions (such as nitrogen oxides and soot), ground pollution at facilities such as gas stations, and excessive noise. These have severe impacts, especially for people living near major sea or road transportation routes. There has been some progress in reducing pollution through regulation, engine improvements, safety procedures, and changes to equipment. As an EU member state, Denmark is subject to policies included under the Zero Pollution Action Plan on, for instance, noise reduction, improved air quality, and hazardous waste management.

## Customer Health and Safety

Constructing and maintaining safe transportation infrastructure is key to policy makers and users, especially for tunnels, bridges, mass transport, and rail. In case of fatal or large-scale injury incidents, issues related to customer health and safety can not only undermine public trust but question an entity's license to operate, reduce usage, result in litigation, and disrupt opportunities. Another consideration relates to the severe travel restrictions during health events such as the COVID-19 pandemic, which challenge the industry's capacity to manage public health risks. The pandemic is a clear example of a low-frequency, high-impact event, yet we recognize that these subsectors will remain highly sensitive to these events, particularly if they become more frequent.

# Issuer And Context Analysis

The project categories in the financing framework address sustainability factors that we consider material for DSB. The clean transportation and the renewable energy categories aim to address climate transition risk. The clean transportation category also seeks to address physical climate risk.

**DSB is implementing its decarbonization strategy by reducing its fossil fuel-based energy consumption and electrifying its trainsets.** In November 2023, the company's emission reduction targets were validated and approved by the Science Based Targets Initiative, which we view positively. Targets include reducing scope 1 and 2 GHG emissions by 98% by 2030, reducing absolute scope 3 emissions by 30% by 2050, and achieving net-zero GHG emissions across the value chain by 2050. Its decarbonization focuses on the electrification of its rail operations. To date, it has purchased 42 EB "Vectron" Siemens electric locomotives, and we view positively that it will continue its electrification process with significant investments under the Clean Transportation category in this framework. An additional pillar of its strategy is increasing onsite renewable energy generation, also included in this framework. In 2022, it started phasing out its multiengine diesel-powered locomotives, reducing its scope 1 and 2 emissions 8% and its particle emissions 46% from the previous year. Nevertheless, the company sold its diesel locomotives to European rail companies, allowing for their reuse but also transferring the associated emissions elsewhere.

**Ultimately, the shift towards electrification is in line with national climate ambitions outlined in the Danish Climate Act to reduce emissions by 70% by 2030 and achieve carbon neutrality by 2050.** Rail transport accounts for only 2% of transport emissions in Denmark, but overall, transportation accounts for 32% of the country's emissions. The company also aims to advance its property development business, and we note that it will do so while mitigating its environmental impacts by complying with the DGNB standard (for example, on biodiversity) and including this business segment in its scope 3 reduction target. It will include its scope 3 emissions in its annual reporting as of 2024.

**DSB actively incorporates physical climate risk considerations in its electrification and rail service activities.** The company undertakes climate scenario analysis with long horizons to assess the exposure of its facilities. DSB then develops adaptation plans when necessary and includes these factors in its decision-making related to new facilities. To this end, it uses insurance policies from insurers that perform their own independent climate scenario analysis. Physical climate issues are further taken into account in new train purchases, for example in factoring their design a capacity to deal with increased precipitation or with the addition of air conditioning in light of higher temperatures. The rail network owner, Banedanmark, conducts its own climate assessments and formulates contingency plans to mitigate risks.

**DSB has policies to mitigate its exposure to employee and customer health and safety and employment conditions.** Its Security Policy seeks to develop a culture of safety based on training and incident reporting and is complemented by compliance with the ISO 27001 standard. In 2022 this resulted in a 54% reduction in its long-term injury frequency rate (LTIFR). Although not covered by this financing, some of DSB's social indicators have risen, specifically the number of significant work accidents (2022: 18, 2021: 10). The company takes precautions to prevent passenger collisions, such as its work with nonprofits to help prevent suicides. Also, in our view, the planned switch to driverless trains might affect train drivers' employment. We understand the company is developing strategies to adapt, such as internal relocation and training.

# Alignment Assessment

This section provides an analysis of the framework's alignment to Green Bond Principles.

## Alignment With Principles

Aligned = ✓ Conceptually aligned = ○ Not aligned = ✗

✓ Green Bond Principles, ICMA, 2021 (with June 2022 Appendix 1)

### ✓ Use of proceeds

All the framework's green project categories are shaded green and the issuer commits to allocate the net proceeds issued under the framework exclusively to eligible green projects. See Analysis of Eligible Projects for more information on our analysis of the expected proceeds' environmental benefits.

Both green bond eligible project categories, clean transportation and renewable energy, contribute to the environmental objective of climate change mitigation. The maximum lookback period for operating expenditure is three years before issuance, in line with market practice. We view positively that the framework connects DSB's projects to activities covered by the EU Taxonomy Technical Screening Criteria.

### ✓ Process for project evaluation and selection

The framework sets out project evaluation and selection processes. DSB has established a capex board responsible for ensuring project alignment with the eligibility criteria, considering overall environmental impact, eligibility, and risk. This board includes members of DSB's group management, and a consensus is required in allocating green bond net proceeds, which we view favorably. The board also ensures that environmental and social risks have been considered and addressed, through adherence to existing DSB policies and procedures. We view positively that the company identifies an exclusion list, which comprises activities that are dedicated to the transport or storage of fossil fuels.

### ✓ Management of proceeds

DSB has established a green register to manage the proceeds of its green bonds. Through the register, proceeds will be earmarked against the portfolio of eligible projects. The issuer also refers to unallocated proceeds if proceeds outstanding cannot be immediately fully allocated, or a green project is sold or loses eligibility, are placed temporarily in DSB's general liquidity reserve and managed according to the company's financial policy. We view positively that DSB will appoint an independent verifier to confirm the internal tracking method and allocation of funds from the green bond proceeds annually.

### ✓ Reporting

DSB commits to publish annually an allocation and impact report until full allocation of the net proceeds, and in the event of any material changes, until the relevant maturity date of the green bond issued. The allocation report will include a list of projects financed, including project descriptions and allocated amounts, as well as the share of financing and refinancing, and the amount of unallocated proceeds (if any). DSB's framework also includes a few examples of impact indicators which the issuer may report on, such as the number of trains financed and deployed, annual GHG emissions avoided, and particle emissions avoided. We view positively that DSB will strive to report on the EU Taxonomy alignment of the projects financed, and that the Green Bond Report may include information regarding the methodology, baselines, and assumptions used in the impact calculations.

## Analysis Of Eligible Projects

This section provides details of our analysis of eligible projects, based on their environmental benefits and risks, using the Shades of Green methodology.

DSB expects to allocate the majority share of proceeds to the Clean transportation category, with approximately 70% funding rolling stock investments and 30% maintenance facilities and other investments, such as those in stations to ensure operability of electrical trains. The renewable energy category is expected to represent a fraction of overall proceed allocation.

The issuer expects a high share of proceeds to be allocated to new financing, and a low portion towards refinancing.

### Overall Shades of Green assessment

Based on the project category shades of green detailed below, and consideration of environmental ambitions reflected in DSB's Green Bond Framework, we assess the framework Dark Green.

### Green project categories

#### Clean Transportation

##### Assessment

 Dark green

##### Description

- Passenger transport by rail: Investment in new train coaches and electric trainsets, and major overhauls, improvements, and maintenance of existing rolling stock, with zero direct (tailpipe) CO2 emission.
- Infrastructure for rail transport: Investment in infrastructure for rail transport and associated subsystems, where the activity is connected to electric train operations, including among other things, stations, terminals and rail service facilities.
- Workshops: Investments in workshops that are dedicated to maintenance of electric locomotives and trainsets and which will at minimum have, or are designed to achieve, a DGNB Gold certificate for sustainable construction or equivalent certification.

### Analytical considerations

- Electric rail and train transport is generally considered one of the most climate and pollution friendly modes of land transportation. Zero direct (tailpipe) emission passenger transport is essential to meet 2050 goals. DSB will use most proceeds under this category to purchase electrically powered trainsets, infrastructure for electric rail transport, and in investments in workshops to facilitate the transition from diesel to electrical trains. We therefore assess this project category as Dark green.
- DSB will use the proceeds to purchase electrically powered trainsets, including at least 100 Coradia trainsets from Alstom, 240 new coaches and 16 control cars from Talgo, and new driverless S-trains. As of 2022, 44% of the company's train traffic was electrified. As per the issuer, once the investment program is completed, practically all DSB's train operations will be electric. We view favorably that the proceeds will not finance expenditure related to fossil fuel trains. Moreover, the company will not include fossil-fuel-based heating in its trains or its properties; it will only use district heating for its properties, which relies largely on biomass and waste incineration power plants.
- DSB's electricity originates from Denmark's grid, which includes 67% renewable energy as of 2022. Also, the company entered a long-term power purchase agreement (PPA) to purchase green power for trains and buildings with a solar cell supplier, which from 2023, supplies green power corresponding to the energy consumption of 10% of DSB's buildings or the three largest train stations in Denmark. The company intends to continue increasing the share of energy supplied via PPAs, and announced in

**Dark green**

Activities that correspond to the long-term vision of a low-carbon climate resilient future.

Our [Shades of Green Analytical Approach](#) >

## Second Party Opinion: DSB's Green Bond Framework

November 2023 an EU tender for procurement of PPAs for solar energy parks in Denmark that are expected to cover up to 25% of power consumption in DSB's train operations.

- Proceeds will also fund workshops dedicated to maintenance of electric locomotives and trainsets and which will at minimum have, or are designed to achieve, a DGNB Gold certificate for sustainable construction or equivalent certification. The DGNB system is based on the three central sustainability areas of ecology, economy, and sociocultural quality, which are equally weighted in the assessment. However, it does not require a minimum energy performance for the buildings, or ensure a level of embodied emissions. The workshops' construction will also be subject to Danish building regulations that sets limits for energy consumption once the building is in operation and emissions during construction, but without setting clear limits regarding embodied emissions. Therefore, we view the new development as exposed to potential energy-intensive construction and operations, but recognize positively that the construction and maintenance of DSB's Dark green electric rolling stock financing is contingent on its related new workshop construction.
- Furthermore, investments will finance electric-train-related maintenance and station service, and capital investments at stations. Investments in stations or terminals will only include rail-related elements, and therefore exclude multiuse buildings with large shopping areas or restaurants. We view positively that, for infrastructure, projects financed will be closely linked to expenditure identified under the EU taxonomy eligibility criteria.
- DSB climate mitigation plan considers its value chain beyond direct emissions, and that the company has Paris-aligned requirements for its suppliers. DSB expects that suppliers strive to minimize the total carbon footprint and environmental impact caused by the choice of materials and by the production methods, and has regular dialogues with its suppliers, with the aim of achieving GHG emission reductions. For instance, in the case of the Coradia trainsets from Alstom, the supplier was required to deliver a preliminary lifecycle assessment, which included disclosure on the expected emissions stemming from production and design of the trainsets. As per DSB's Environmental and Sustainability Requirements, should a supplier not meet its emission reduction plans, and this jeopardizes DSB's own climate targets, a monetary penalty could follow.
- We view positively that when assessing potential projects to be financed with green bond proceeds under this framework, DSB will use its existing process for reporting in accordance with the EU Taxonomy Regulation and subsequently prioritize financing and refinancing of projects considered aligned with the EU Taxonomy, screening for climate risk and resilience. The company also discusses physical climate risk with insurance companies, including for instance, risks analysis for flooding risks. Moreover, Banedanmark has established contingency plans for DSB's tracks, focused specifically on precipitation, which is a key risk in Denmark.
- Regarding the end of life of its rolling stock, DSB aims to reuse the rolling stock and has historically decommissioned rolling stock to rail operations in other countries, typically replacing older stock. The alternative would be to scrap the rolling stock, with the majority of the material recycled. In line with the EU Waste Framework's waste hierarchy, DSB considers direct reuse superior to recycling from an environmental perspective. Nevertheless, by allowing the use of diesel trains in other locations, the company is transferring the associated emissions elsewhere.

### Renewable Energy

#### Assessment

 Dark green

#### Description

Solar Power: Investments in solar PV technology, such as onsite solar rooftop panels.













### Analytical considerations

- DSB intends to install solar panels on the roofs of stations, designed for local production and consumption, without energy storage. Considering the projects' key contribution to climate mitigation and the company's decarbonization strategy, we assign this project category a Dark green shade.
- The issuer does not specify a quantitative lifecycle emissions threshold for this type of project that would limit potential emissions during solar panel materials sourcing, manufacturing, transportation, construction, and disposal. We view positively that suppliers are selected through an EU tender process, which comprises requirements regarding the level of sustainability of the product, production process and operations during their lifetime. According to the issuer, solar panel installation is a pilot project.

## Second Party Opinion: DSB's Green Bond Framework

- Downstream, solar infrastructure end-of-life can be associated with waste and local pollution risks. We view positively that DSB has set a requirement that the panels must be reused, and suppliers must disclose the share of recycling for all components including relevant documentation for the possibility for recycling.
- Solar projects can introduce biodiversity and environmental risks, such as from ecosystem disturbances, local pollution during construction, and the ongoing land use footprint. Solar projects can also be exposed to physical climate risks. In our view, these risks are partly mitigated as the solar panels would be on the rooftop of the train stations, for which physical climate risks assessments have been made (for more information, see "Clean Transportation" project category).

## S&P Global Ratings' Shades of Green

Assessments						
 <b>Dark green</b>	 <b>Medium green</b>	 <b>Light green</b>	 <b>Yellow</b>	 <b>Orange</b>	 <b>Red</b>	
Description						
Activities that correspond to the long-term vision of an LCCR future.	Activities that represent significant steps toward an LCCR future but will require further improvements to be long-term LCCR solutions.	Activities representing transition steps in the near-term that avoid emissions lock-in but do not represent long-term LCCR solutions.	Activities that do not have a material impact on the transition to an LCCR future, or, Activities that have some potential inconsistency with the transition to an LCCR future, albeit tempered by existing transition measures.	Activities that are not currently consistent with the transition to an LCCR future. These include activities with moderate potential for emissions lock-in and risk of stranded assets.	Activities that are inconsistent with, and likely to impede, the transition required to achieve the long-term LCCR future. These activities have the highest emissions intensity, with the most potential for emissions lock-in and risk of stranded assets.	
Example projects						
 Solar power plants	 Energy efficient buildings	 Hybrid road vehicles	 Health care services	 Conventional steel production	 New oil exploration	

Note: For us to consider use of proceeds aligned with ICMA Principles for a green project, we require project categories directly funded by the financing to be assigned one of the three green Shades.




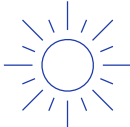

LCCR--Low-carbon climate resilient. An LCCR future is a future aligned with the Paris Agreement; where the global average temperature increase is held below 2 degrees Celsius (2 C), with efforts to limit it to 1.5 C, above pre-industrial levels, while building resilience to the adverse impact of climate change and achieving sustainable outcomes across both climate and non-climate environmental objectives. Long term and near term--For the purpose of this analysis, we consider the long term to be beyond the middle of the 21st century and the near term to be within the next decade. Emissions lock-in--Where an activity delays or prevents the transition to low-carbon alternatives by perpetuating assets or processes (often fossil fuel use and its corresponding greenhouse gas emissions) that are not aligned with, or cannot adapt to, an LCCR future. Stranded assets--Assets that have suffered from unanticipated or premature write-downs, devaluations, or conversion to liabilities (as defined by the University of Oxford).



# Mapping To The U.N.'s Sustainable Development Goals

Where the Financing documentation references the Sustainable Development Goals (SDGs), we consider which SDGs it contributes to. We compare the activities funded by the Financing to the International Capital Markets Association (ICMA) SDG mapping and outline the intended linkages within our SPO analysis. Our assessment of SDG mapping does not impact our alignment opinion.

This framework intends to contribute to the following SDGs:

Use of proceeds	SDGs		
Clean transportation	 <p data-bbox="464 751 634 835"><b>9. Industry, innovation and infrastructure</b></p>	 <p data-bbox="683 751 850 835"><b>11. Sustainable cities and communities*</b></p>	 <p data-bbox="883 751 1081 779"><b>13. Climate action</b></p>
Renewable energy	 <p data-bbox="449 1073 646 1136"><b>7. Affordable and clean energy*</b></p>	 <p data-bbox="683 1073 850 1157"><b>11. Sustainable cities and communities*</b></p>	

\*The eligible project categories link to these SDGs in the ICMA mapping.

## Related Research

- [Analytical Approach: Second Party Opinions: Use of Proceeds](#), July 27, 2023
- [FAQ: Applying Our Integrated Analytical Approach for Use-of-Proceeds Second Party Opinions](#), July 27, 2023
- [Analytical Approach: Shades of Green Assessments](#), July 27, 2023
- [S&P Global Ratings ESG Materiality Maps](#), July 20, 2022

## Analytical Contacts

### Primary contact

**Rita Ferreira**  
Madrid  
+34 914233216  
rita.ferreira  
@spglobal.com

### Sofia Singh Digpaul

London  
+44 2071766750  
sofia.singh.digpaul  
@spglobal.com

### Secondary contacts

**Pierre-Brice Hellsing**  
Stockholm  
+46 84 40 5906  
pierre-brice.hellsing  
@spglobal.com

### Luisina Berberian

Madrid  
+ 34 91 788 7200  
luisina.berberian  
@spglobal.com

### Christina Sewell

Oslo  
+1 4153715033  
christina.sewell  
@spglobal.com

### Research contributor

**Elizabeth Chacko**  
Mumbai

## Second Party Opinion: DSB's Green Bond Framework

Standard & Poor's Financial Services LLC or its affiliates (collectively, S&P) receives compensation for the provision of the Second Party Opinions product (Product). S&P may also receive compensation for rating the transactions covered by the Product or for rating the issuer of the transactions covered by the Product. The purchaser of the Product may be the issuer.

The Product is not a credit rating, and does not consider credit quality or factor into our credit ratings. The Product does not consider, state or imply the likelihood of completion of any projects covered by a given financing, or the completion of a proposed financing. The Product encompasses Use of Proceeds Second Party Opinions and Sustainability-Linked Second Party Opinions. An S&P Global Use of Proceeds Second Party Opinion provides an opinion on an issuer's sustainable finance instrument, program, or framework, and considers the financing in the context of the issuer's most material sustainability factors, the issuer's management of additional sustainability factors relevant to the sustainable financing, and provides an opinion regarding alignment with certain third-party published sustainable finance principles ("Principles"). An S&P Global Ratings Sustainability-Linked Second Party Opinion considers features of a financing transaction and/or financing framework and provides an opinion regarding alignment with relevant Principles. For a list of the Principles addressed by the Product, see the Analytical Approach, available at [www.spglobal.com](http://www.spglobal.com). The Product is a statement of opinion and is neither a verification nor a certification. The Product is a point in time evaluation reflecting the information provided to us at the time that the Product was created and published, and is not surveilled. The Product is not a research report and is not intended as such. S&P's credit ratings, opinions, analyses, rating acknowledgment decisions, any views reflected in the Product and the output of the Product are not investment advice, recommendations regarding credit decisions, recommendations to purchase, hold, or sell any securities or to make any investment decisions, an offer to buy or sell or the solicitation of an offer to buy or sell any security, endorsements of the suitability of any security, endorsements of the accuracy of any data or conclusions provided in the Product, or independent verification of any information relied upon in the credit rating process. The Product and any associated presentations do not take into account any user's financial objectives, financial situation, needs or means, and should not be relied upon by users for making any investment decisions. The output of the Product is not a substitute for a user's independent judgment and expertise. The output of the Product is not professional financial, tax or legal advice, and users should obtain independent, professional advice as it is determined necessary by users.

While S&P has obtained information from sources it believes to be reliable, S&P does not perform an audit and undertakes no duty of due diligence or independent verification of any information it receives.

S&P and any third-party providers, as well as their directors, officers, shareholders, employees, or agents (collectively S&P Parties) do not guarantee the accuracy, completeness, timeliness, or availability of the Product. S&P Parties are not responsible for any errors or omissions (negligent or otherwise), regardless of the cause, for reliance of use of information in the Product, or for the security or maintenance of any information transmitted via the Internet, or for the accuracy of the information in the Product. The Product is provided on an "AS IS" basis. S&P PARTIES MAKE NO REPRESENTATION OR WARRANTY, EXPRESS OR IMPLIED, INCLUDED BUT NOT LIMITED TO, THE ACCURACY, RESULTS, TIMELINESS, COMPLETENESS, MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE WITH RESPECT TO THE PRODUCT, OR FOR THE SECURITY OF THE WEBSITE FROM WHICH THE PRODUCT IS ACCESSED. S&P Parties have no responsibility to maintain or update the Product or to supply any corrections, updates, or releases in connection therewith. S&P Parties have no liability for the accuracy, timeliness, reliability, performance, continued availability, completeness or delays, omissions, or interruptions in the delivery of the Product.

To the extent permitted by law, in no event shall the S&P Parties be liable to any party for any direct, indirect, incidental, exemplary, compensatory, punitive, special or consequential damages, costs, expenses, legal fees, or losses (including, without limitation, lost income or lost profits and opportunity costs or losses caused by negligence, loss of data, cost of substitute materials, cost of capital, or claims of any third party) in connection with any use of the Product even if advised of the possibility of such damages.

S&P maintains a separation between commercial and analytic activities. S&P keeps certain activities of its business units separate from each other in order to preserve the independence and objectivity of their respective activities. As a result, certain business units of S&P may have information that is not available to other S&P business units. S&P has established policies and procedures to maintain the confidentiality of certain nonpublic information received in connection with each analytical process.

For PRC only: Any "Second Party Opinions" or "assessment" assigned by S&P Global Ratings: (a) does not constitute a credit rating, rating, sustainable financing framework verification, assessment, certification or evaluation as required under any relevant PRC laws or regulations, and (b) cannot be included in any offering memorandum, circular, prospectus, registration documents or any other document submitted to PRC authorities or to otherwise satisfy any PRC regulatory purposes; and (c) is not intended for use within the PRC for any purpose which is not permitted under relevant PRC laws or regulations. For the purpose of this section, "PRC" refers to the mainland of the People's Republic of China, excluding Hong Kong, Macau and Taiwan.

Copyright © 2023 by Standard & Poor's Financial Services LLC. All rights reserved.