

ASSESSMENT

9 September 2024



Analyst Contacts

Vivian Lee
Sustainable Finance Analyst
vivian.lee@moodys.com

Susie Ko
Sustainable Fin Associate
susie.ko@moodys.com

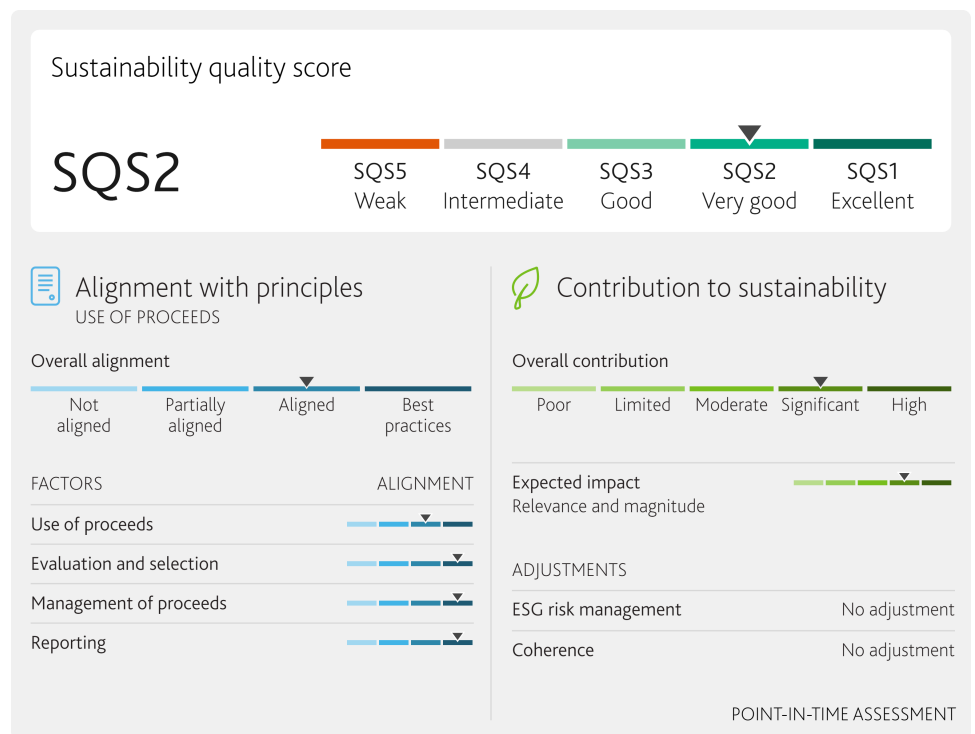
Matthew Kuchtyak
VP-Sustainable Finance
matthew.kuchtyak@moodys.com

Toronto-Dominion Bank (The)

Second Party Opinion – Sustainable Financing Framework Assigned SQS2 Sustainability Quality Score

Summary

We have assigned an SQS2 sustainability quality score (very good) to the Toronto-Dominion Bank's (TD) sustainable financing framework dated September 2024. The issuer has established its use-of-proceeds framework with the aim of financing projects across 13 eligible green and social categories. The framework is aligned with the four core components of the International Capital Market Association's (ICMA) Green Bond Principles (GBP) 2021 (with June 2022 Appendix 1) and Social Bond Principles (SBP) 2023. The framework demonstrates a significant contribution to sustainability.



Scope

We have provided a second party opinion (SPO) on the sustainability credentials of TD's sustainable financing framework, including the framework's alignment with the ICMA's GBP 2021 (with June 2022 Appendix 1) and SBP 2023. Under its framework, TD plans to raise sustainable financing through green, social and sustainability bonds and/or other wholesale funding instruments, collectively referred to as "sustainable financing instruments," to finance green and/or social assets across 13 eligible asset categories, as outlined in Appendix 2 of this report.

Our assessment is based on the last updated version of the framework received on 4 September 2024, and our opinion reflects our point-in-time assessment¹ of the details contained in this version of the framework, as well as other public and non-public information provided by the company.

We produced this SPO based on our [Framework to Provide Second Party Opinions on Sustainable Debt](#), published in October 2022.

Issuer profile

Headquartered in Toronto, TD is the sixth largest bank in North America and is one of the largest Canadian banks with CAD2.0 trillion in assets as of 30 April 2024. The bank offers a wide range of financial products and services across four main business lines: Canadian Personal & Commercial Banking, US Retail, Wealth Management and Insurance, and Wholesale Banking.

Strengths

- » Eligible project categories address a wide range of environmental and social objectives that are relevant to the bank's lending activities and the regions in which it operates
- » Robust environmental and social risk management process, including screening for potential controversies associated with projects
- » Short maximum proceeds allocation period of 18 months, in line with best market practice

Challenges

- » Some eligible categories lack granular details on specific assets or projects to be financed
- » Financing of road projects under the access to basic infrastructure category and livestock farming under the sustainable management of natural resources category may carry negative environmental externalities
- » Although the framework is in line with current market practices, the inclusion of general corporate purpose loans through pureplay means constitutes a non-standard use of proceeds susceptible to specific challenges

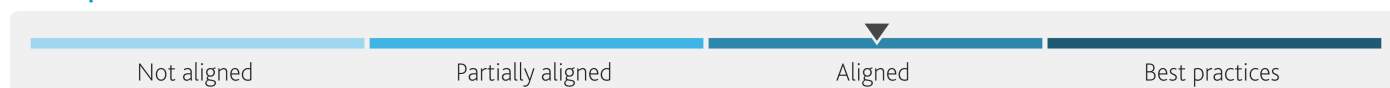
This publication does not announce a credit rating action. For any credit ratings referenced in this publication, please see the issuer/deal page on <https://ratings.moody's.com> for the most updated credit rating action information and rating history.

Alignment with principles

TD's sustainable financing framework is aligned with the four core components of the ICMA's GBP 2021 (with June 2022 Appendix 1) and SBP 2023:

- Green Bond Principles (GBP)
- Social Bond Principles (SBP)
- Green Loan Principles (GLP)
- Social Loan Principles (SLP)
- Sustainability-Linked Bond Principles (SLBP)
- Sustainability Linked Loan Principles (SLLP)

Use of proceeds



Clarity of the eligible categories – ALIGNED

The bank has clearly communicated the nature of the expenditures, the eligibility and exclusion criteria for financed projects, as well as the target populations for the social categories. The net proceeds from sustainable financing instruments will be allocated to finance or refinance in whole or in part, new or existing eligible green and/or social assets that meet the eligibility criteria. The bank has articulated the eligibility criteria for nearly all projects which includes general project descriptions and technical thresholds, although the criteria for some categories remain broadly defined. Exclusion criteria are explicit in the framework, with additional exclusions specified for individual categories where relevant. Eligible projects will be located in TD's operational footprint, primarily in North America (Canada and the United States).

The cornerstone of the ICMA's Green Bond Principles and Social Bond Principles is the full utilization of net bond proceeds to eligible projects with clear environmental or social benefits. TD's framework includes general corporate purpose bonds, loans or investments to pure-play companies that derive at least 90% of their revenue from activities that adhere to the eligibility criteria in the framework. The bank's sustainable financing review group (TD SFRG) monitors that the revenue threshold is met in its quarterly review process to ensure continued eligibility. General corporate purpose loans are subject to environmental and social risk monitoring according to TD's risk management approach. Although pure play loans could be allocated to any category, the bank has shared that pure play financings under its past sustainable bond issuances have been minimal and have largely been allocated towards assets in the renewable energy category. Our assessment considers that pure play investments will continue to represent a small share of the bank's sustainable proceeds going forward.

In our view, pure play lending represents a non-standard use of proceeds that introduces potential challenges related to asset-level adherence to sustainability objectives, allocation and traceability, impact reporting, as well as an increased risk of double counting. The bank has provided information that demonstrates suitable measures to identify, select and allocate net proceeds to general corporate purpose facilities that adhere to the sustainability objectives and benefits targeted in the framework, and also to track and report on the associated sustainability benefits. The bank commits to report on its pro-rata share of financing or investments to pure players to minimize the risk of double counting of allocation and benefits. With these practices in place, coupled with the 90% revenue threshold, we consider the bank's internal processes to be in line with current market practices and sufficient to largely mitigate the potential associated risks.

Clarity of the environmental or social objectives – BEST PRACTICES

The bank has clearly outlined the environmental and social objectives associated with all 13 eligible categories. All eligible categories are relevant to the respective environmental or social objectives to which they are aiming to contribute. The bank has referenced the UN Sustainable Development Goals (SDGs) in articulating the objectives of the eligible categories.

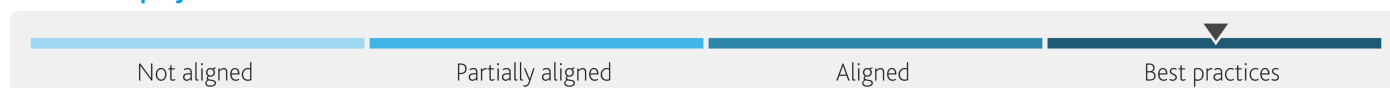
Clarity of expected benefits – ALIGNED

The bank has identified clear and relevant expected environmental and social benefits for the 13 eligible categories based on the projects likely to be financed under each category. The benefits are measurable for all project categories and the bank will report on these quantitative expected benefits in its annual reporting. The bank intends to share anticipated proceeds allocation with investors prior to issuance, where feasible, and has committed to transparently disclose the actual share of refinancing in its annual reporting. The bank does not implement a framework level look-back period.

Best practices identified — use of proceeds

- » Objectives set are defined, relevant and coherent for all project categories
- » Relevant benefits are identified for all project categories
- » Benefits are measurable and quantified for most projects, either ex-ante with clear baselines or with a commitment to do so in future reporting
- » Commitment to transparently disclose the share of proceeds used for refinancing where feasible

Process for project evaluation and selection



Transparency and quality of process for defining eligible projects – BEST PRACTICES

The bank has established a clear and structured decision-making process for the selection and evaluation of eligible assets. The TD SFRG has the ultimate responsibility of framework oversight. The TD SFRG is comprised of relevant expertise across the bank including senior representatives from corporate sustainability, treasury, balance sheet management, risk management, capital markets and other relevant business segments. The TD SFRG is responsible for the review and approval of the eligible assets under the sustainable assets portfolio, in accordance with the framework criteria and with the support of the bank's risk management processes. The group tracks and monitors the eligibility of assets on at least a quarterly basis. In case assets are no longer compliant with the eligibility criteria, the ineligible asset will be removed from the portfolio. The sustainable assets portfolio will be subject to the bank's ongoing monitoring of ESG risks which will apply through asset maturity. Traceability of the process is ensured through the documentation of meetings for the process for project evaluation, selection and monitoring.

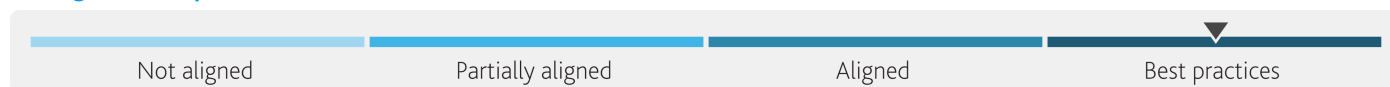
Environmental and social risk mitigation process – BEST PRACTICES

The environmental and social risk mitigation process is disclosed at a high level in the framework. The bank carries out appropriate ESG risk due diligence in accordance with the bank's enterprise-wide risk management framework and risk appetite statement, which covers environmental and social (E&S) risk management processes. All eligible assets will be subject to a regular review in line with the bank's applicable E&S risk management policies, and the Equator Principles for applicable project financing assets. Transactions with heightened E&S exposure undergo enhanced due diligence, which may include additional review by the ESG risk management team. ESG controversies are covered under the bank's E&S risk management processes and will be monitored until bond maturity.

Best practices identified — process for project evaluation and selection

- » The roles and responsibilities for project evaluation and selection are clearly defined and include relevant expertise
- » There is evidence of continuity in the selection and evaluation process through the life of the financial instrument(s), including compliance verification and procedures to undertake mitigating actions when needed
- » The process for project evaluation and selection is traceable
- » Material environmental and social risks for most project categories are identified
- » Presence of corrective measures to address environmental and social risks across projects
- » ESG controversies are monitored

Management of proceeds



Allocation and tracking of proceeds – BEST PRACTICES

The bank has defined a clear process for the management and allocation of bond proceeds in its framework. Net proceeds of sustainable financing instruments are placed in a general treasury account, and the proceeds are tracked in the sustainable assets portfolio. The bank will perform periodic adjustments of net proceeds to eligible assets on a quarterly basis. The bank aims to fully allocate the net proceeds from each sustainable bond within a period of 18 months of issuance.

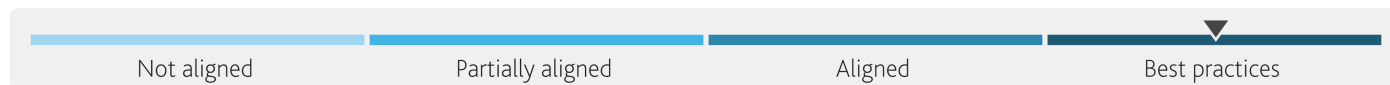
Management of unallocated proceeds – BEST PRACTICES

Unallocated proceeds will be held in cash, cash equivalents and/or other liquid securities in accordance with TD's normal liquidity management policy. The placement of unallocated proceeds will comply with the exclusion criteria under the framework, which excludes financing of certain socially harmful activities. In the event an asset has matured, is repaid or is no longer eligible, the asset will be removed from the sustainable assets portfolio and the bank commits to reallocate proceeds to assets that meet the framework's eligibility criteria.

Best practices identified — management of proceeds

- » Broad disclosure of a clearly articulated and comprehensive management of proceeds policy to external stakeholders; bondholders or lenders at a minimum
- » Short allocation period, for example typically less than 24 months
- » Disclosure on temporary placements and presence of exclusion criteria toward environmentally or socially harmful activities
- » Commitment to reallocate proceeds to projects that are compliant with the framework

Reporting



Transparency of reporting – BEST PRACTICES

The bank will report annually on the use of proceeds allocation and impact reporting until maturity of the bonds issued under the framework. The report will be publicly available on TD's website and will include exhaustive indicators such as the net proceeds raised from each sustainable financing instrument issuance; the amounts allocated at the eligible category level; the balance of unallocated proceeds; the share of financing vs re-financing; and the impact metrics. The report may include information on the assets added and removed from the portfolio over the course of the year based on a review of the asset's conformity to the framework criteria covering material developments related to the assets. The report will be made on an asset level where client consent is obtained.

The bank has identified relevant potential impact indicators in the framework for the eligible categories. For general corporate purpose loans, the bank will track the environmental and social indicators associated with the assets through an internal methodology, leveraging an enterprise value-based attribution factor at the entity level for reporting. Allocations to nuclear energy projects will be explicitly disclosed at or before the time of issuance and subsequently disclosed in TD's annual sustainable financing reporting. The bank will request a reasonable assurance report from its external auditor on the allocation of proceeds on an annual basis until maturity of the instruments and will obtain, where feasible, independent validation for selected disclosed impact metrics until bond maturity. We view both of these commitments as consistent with market best practice.

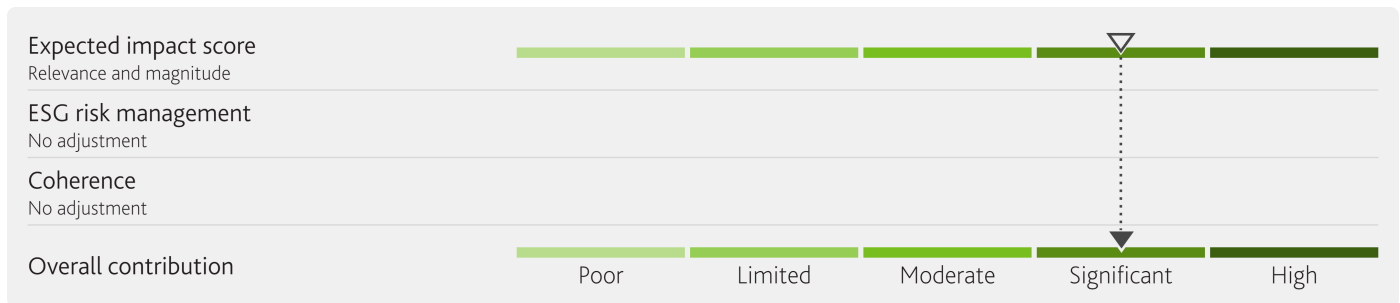
TD is an experienced sustainable bond issuer. The bank has issued both green and sustainable bonds since 2014, with its most recent green bond sized at \$500 million in 2023. The bank has provided annual post-issuance reporting in line with the commitments in its prior sustainable bond framework, suggesting a high likelihood of continued timely and consistent reporting for future issuances.

Best practices identified — reporting

- » Reporting until full bond maturity or loan payback
- » Reporting covers material developments and issues related to the projects or assets
- » Reporting on allocation of proceeds and benefits done at least at eligible category level
- » Exhaustive allocation reporting – balance or % of unallocated funds, types of temporary investments (e.g. cash or cash equivalent) and share of financing vs re-financing
- » Clear and relevant indicators to report on the expected environmental/social impact of all the projects, where feasible, or eligible categories
- » Disclosure of reporting methodology and calculation assumptions to bondholders or lenders at a minimum
- » Independent audit of the tracking and allocation of funds at least until full allocation and in case of material changes
- » Independent impact assessment on environmental benefits by a qualified third-party reviewer at least until full allocation and in case of material changes and/or case studies to report on the social impact/benefits.

Contribution to sustainability

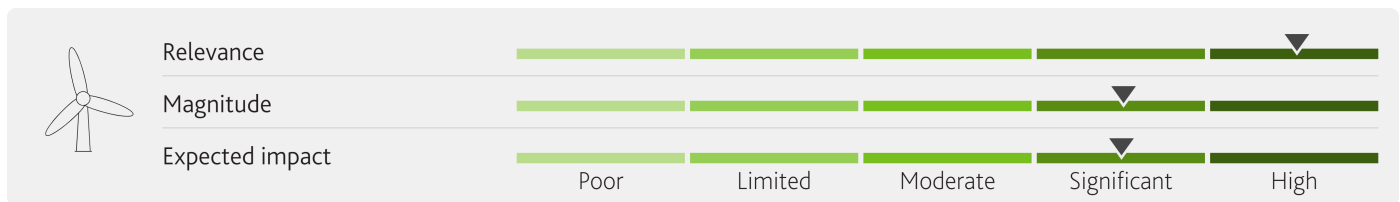
The framework demonstrates a significant overall contribution to sustainability.



Expected impact

The expected impact of the eligible projects on environmental and social objectives is significant. Based on information provided by the bank, we expect proceeds from forthcoming issuances to represent a higher proportion for the renewable energy, green buildings and clean transportation project categories. We have therefore assigned higher weights to those categories in our assessment of the overall framework's contribution to sustainability. A detailed assessment by eligible category is provided below.

Renewable energy

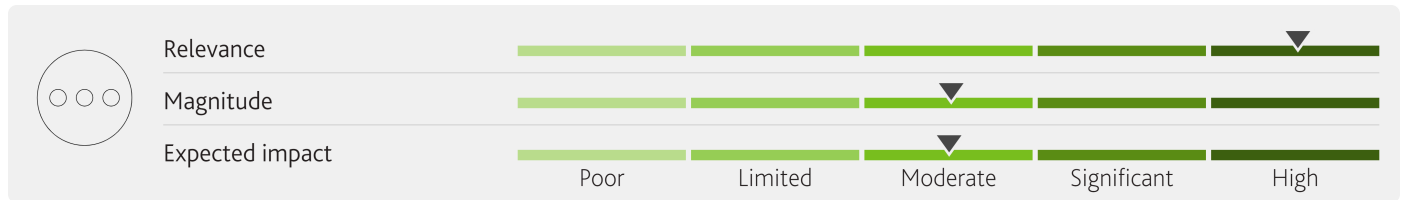


Investments under this category are highly relevant to decarbonize energy systems and to scale up renewables. According to the International Energy Agency (IEA), the share of renewables will need to increase over 60% in 2030 and to nearly 90% in 2050 under its net zero by 2050 scenario.² Despite recent growth in renewable capacity, the total energy supply in Canada and the US is still heavily reliant on fossil fuel sources. The banking sector plays a key role to provide capital support for the development of renewable technologies for the broader economy.

The magnitude of this category is significant because the eligible projects are likely to substantially reduce greenhouse gas (GHG) emissions by expanding renewable energy capacity. The bank has shared that most of the proceeds are expected to be allocated to financing eligible solar and wind projects, which are considered best available technologies. Other eligible projects, including hydropower, geothermal, and transmission and distribution assets follow clearly defined thresholds that are in line with market standards, ensuring positive long-term environmental benefits with no negative lock-in effects. Biomass projects will follow the life cycle emissions threshold of 100gCO₂e/kWh and include certified biomass feedstocks that comply with relevant regulatory standards such as sustainable agriculture residues and forestry residues. While only waste feedstocks are eligible, the use of woody biomass may introduce potential negative environmental externalities. However, the eligibility criteria incorporate certified feedstocks, supporting the project's sustainability credentials.

The bank has confirmed that only green hydrogen projects produced through electrolysis from renewable sources are eligible under the framework. Eligible hydrogen projects are required to align with the carbon intensity threshold of 36.4gCO₂e/MJ as established under the National Resources Canada's Hydrogen Strategy. This translates to roughly a threshold of under 4.5kgCO₂e/kg H₂. Although the referenced threshold is in line with national and market standards, more stringent criteria for the production of hydrogen exist in the market, such as the Climate Bond Initiative's (CBI) sliding scale target of reducing emissions to achieve zero emissions per hydrogen produced by 2050.³ Ammonia produced from green hydrogen is also considered eligible.

Nuclear energy



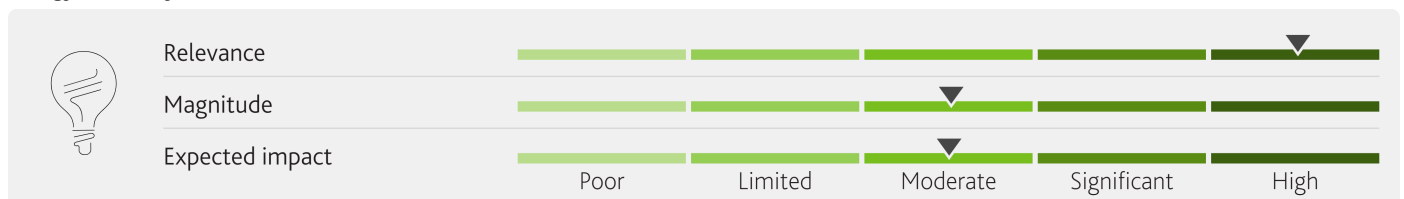
Nuclear energy investments in the category are highly relevant to support a low-carbon energy future. Although wind and solar sources are expected to generate most of the clean energy under a net zero scenario, nuclear capacity is projected to double between 2020 and 2050, with a share of generation just below 10%.⁴ According to the IEA, failing to meet the projected needed capacity from nuclear sources would place an additional burden on wind and solar sources for carbon free generation. Within the regional context, nuclear plays an important role in the US and Canada's energy grid, generating 19%⁵ and 15%⁶ of electricity, respectively. Furthermore, the banking sector plays a critical role to provide financing for high capital costs associated with large scale nuclear plants as well as to mobilize capital to support research and development (R&D) of advanced nuclear technologies for power generation.

The magnitude is moderate, balancing the long-term climate mitigation potential of low-carbon energy against the category's broad eligibility criteria and the potential inherent environmental and social externalities associated with nuclear projects.

Under the category, the bank can finance a variety of investments related to nuclear energy. The bank has shared that any proceeds explicitly allocated to nuclear assets from issuances under the framework would likely be focused on operation or retrofits of existing assets with the aim of extending the operating life of existing assets and new installations such as generation II and above reactors. A smaller share of proceeds will be allocated to R&D investments that minimize waste from the fuel cycle, such as small modular reactors (SMRs) and fusion technology. The location of financed nuclear assets would primarily be in Canada and the US, in accordance with the bank's operational footprint. Although we expect such projects will provide a long-term positive benefit to the objective of climate change mitigation, the broad eligibility criteria of likely nuclear financings limit visibility into whether the most advanced technologies and risk management practices will always be financed.

New nuclear installations and the operation and maintenance of existing plants inherently pose negative potential environmental and social externalities and risks. One of the key environmental concerns is the management, long-term storage and disposal of radioactive waste. Additionally, social issues from the health and safety risks for plant workers and surrounding communities may arise in the event of potential accidents. While these risks could be quite severe if realized, we note that nuclear accidents have been infrequent, and the national regulatory oversight of nuclear projects is typically comprehensive. In Canada, for example, oversight of nuclear projects covers the various stages of nuclear project development with relevant regulations derived from the [Nuclear Safety and Control Act](#), [Nuclear Energy Act](#), [Nuclear Fuel Waste Act](#) and [Nuclear Liability and Compensation Act](#). While regulatory risk controls provide assurance that long term environmental risks are managed and mitigated, the implementation of such risk management practices may vary by region. For example, Canada is currently evaluating the construction of a deep geological repository for the safe, long-term management of used nuclear fuel in line with international best practices, but site location has not yet been confirmed.⁷

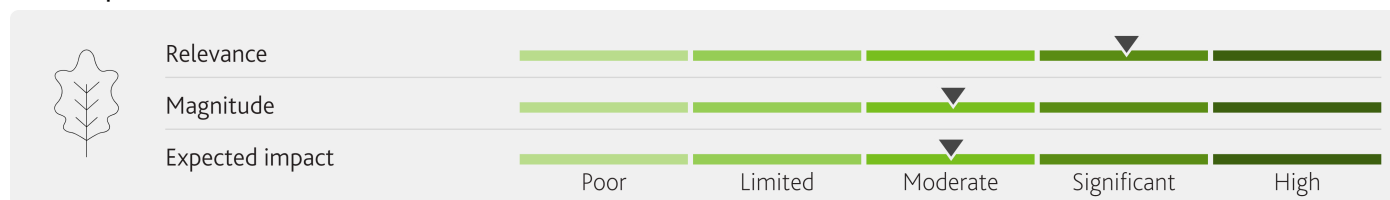
Energy efficiency



Investments under this category are highly relevant to reduce energy-related emissions in the broader economy. Energy efficiency initiatives align and contribute to Canada's 2030 target to reduce GHG emissions by 40-45% from baseline 2005 levels and its net zero emissions by 2050 goal. Globally, measures to improve energy efficiency are cited by the IEA to be the single largest measure to avoid energy demand, highlighting its importance to contribute to climate change mitigation.

Investments under this category will likely have a moderate contribution to reducing emissions. Eligible projects are required to demonstrate a minimum 30% energy efficiency improvement or reduction in GHG emissions, in line with market standards. The bank has shared that it will prioritize allocations to assets that do not lock in fossil fuel technologies and will screen supporting information on the asset against its internal environmental and social due diligence criteria, including end-use information when available. However, the eligibility criteria allow for broad sector eligibility of assets, contributing to the moderate magnitude score.

Pollution prevention and control



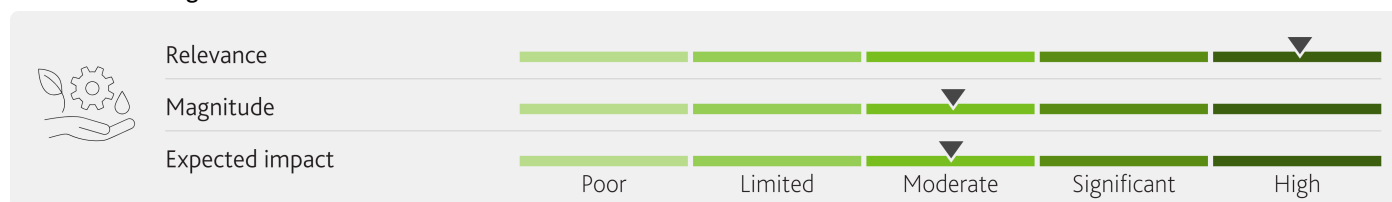
The relevance of this category is significant because projects address an important environmental issue by reducing air pollution, including GHG emissions, and supporting non-hazardous waste management practices. While important, eligible waste management projects may not include other hazardous wastes associated with the waste sector, narrowing the scope of the category. Additionally, from a climate perspective, the waste sector is responsible for a modest share of total emissions in the US at 2.7%² and in Canada at 4%.² The significant relevance also captures the importance of carbon capture and storage (CCS) projects under a net zero emissions by 2050 scenario. CCS projects play a key role to support the carbon transition pathways for hard to abate industrial sectors such as the cement sector. However, the applicability of CCS may not be the most relevant for some sectors, such as the power sector, where the path to decarbonization is more feasible through the adoption of renewables.

Projects are likely to have a moderate contribution to sustainability. The bank aims to finance projects to support soil remediation, segregation of waste, and projects that promote the recovery of non-hazardous waste through recycling efforts. Eligible recycling technologies include both mechanical and chemical recycling, the latter of which is more energy and emission intensive than the former. The bank has shared that the likely allocation of proceeds would support mechanical facilities to a greater degree, which would minimize the exposure to negative environmental externalities. Favorably, the bank follows market standards on mitigation criteria for landfill biogas capture projects, requiring at least a 75% capture rate for power, heat, vehicle fuel or as feedstock in the chemical industry at decommissioned landfill sites.

For CCS projects, the bank requires a 90% or greater capture rate, in line with recommendations set by the IEA. Eligible CCS projects include point source and direct air capture (DAC) projects. As eligible investments are focused on the development and manufacturing of CCS technologies, the bank may not have an exhaustive ex-ante view of a company's off-taker agreements at the time of financing. The bank has shared that it will review supporting information related to the asset, including its end-use applications when available to mitigate risk of carbon lock in from fossil fuel activities. Favorably, CCS for enhanced oil recovery activities is excluded, which is an activity with one of the highest lock-in risks. The bank's internal due diligence also includes a review of the potential borrower's carbon leakage mitigation plans to ensure that plans are in accordance with local regulatory requirements and for captured carbon to be permanently stored underground.

While we recognize the potential climate benefits of CCS projects, there is uncertainty on the capture efficiency of CCS due to the nascency of the technology. The high energy demands of DAC also imply that the effectiveness of emission reduction largely depends on the energy sources used by the plants. The category does not include carbon utilization projects.

Sustainable management of natural resources

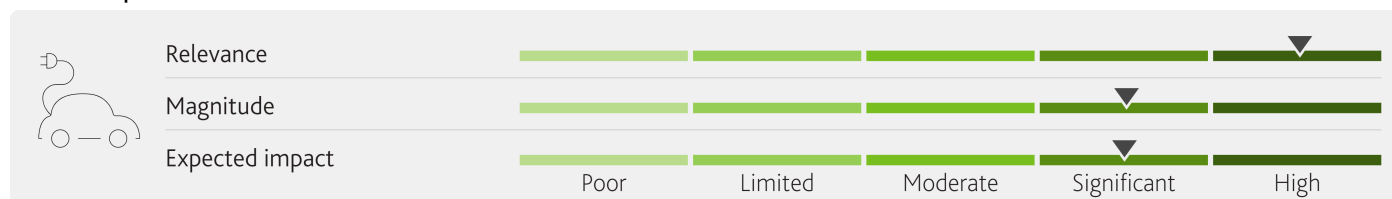


The relevance of this category is high because it addresses relevant challenges in the forestry, agriculture and fisheries sectors through the promotion of sustainable management of resources to increase the sectors' resiliency to the impact of climate change. The projects are broadly in line with Canada's 2030 emissions reduction plan for agriculture and forestry to preserve and improve ecosystems through nature-based climate solutions and sustainable agricultural practices. While governments bear primary responsibility for addressing environmental damages such as biodiversity loss, financial institutions play an important complementary role to align financial flows in support of conservation and sustainable use of resources.¹⁰

The magnitude of the projects is moderate, balancing our view of the expected long term environmental benefits and presence of negative impacts from livestock farming that are likely to be well managed. Projects to promote sustainable forestry, agriculture, aquaculture and fisheries operations must be certified according to standards relevant to their sectors. Although the certification criteria are positive, we recognize that the scope of the sustainability standards and the minimum requirements across the certifications vary, which makes it challenging to fully assess the extent of the benefits and the degree to which potential negative externalities are mitigated. Eligible projects also include industrial livestock farming which raises potential concerns on emissions and negative land use implications. The bank has shared that only activities that are certified under Canada Organic or equivalent are eligible for financing, helping support the management of potential environmental risks. The financing of organic and sustainable agricultural practices will likely promote positive considerations related to improved soil health from regenerative farming techniques.

For the production of alternative proteins, the bank intends to prioritize allocations toward plant-based protein and fermentation, both of which are likely to have substantially lower emissions than conventional protein production. Certified commercial forestry operation, which is an eligible expenditure under the framework, may carry negative risks to biodiversity and soil pollution.

Clean transportation

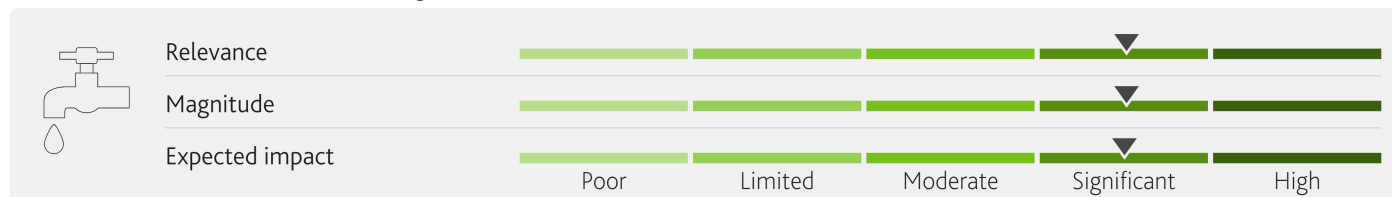


Projects in this category are highly relevant investments to decarbonize the transportation sector globally and within the local context. Transportation was responsible for 23% of global carbon emissions in 2021, the second largest share behind the energy sector.¹¹ In Canada and the US, fuel combustion from the transportation sector is responsible for nearly a third of each country's total emissions, highlighting the need to decarbonize the sector. The projects are broadly aligned with the national strategies to accelerate the adoption of zero emission and low carbon transport options to facilitate the reduction in the sector's emissions and improvement in air quality.

Investments under this category are likely to contribute significantly to reduction in transport emissions through the growth in supply and up take of zero-tailpipe emission vehicles. Eligible projects include best available technologies such as electric and hydrogen fueled vehicles for road transport, electrified rail and public transportation, walking and biking infrastructure as well as charging stations and infrastructure dedicated to low-carbon transport. In accordance with historical allocations, the bank has shared that it expects to allocate a large share of proceeds to zero emission vehicles. The category also includes financing of hybrid buses and passenger rail that are required to adhere to relevant market recognized thresholds. Although zero-emission freight rail and water vessels are not to be dedicated for the transport of fossil fuel, more stringent criteria, such as CBI's criteria of limiting the transport of fossil fuel to less than 25% of cargo, are likely to drive higher benefits.

Under the category, the bank also aims to finance enabling activities that are dedicated to support the production of electrified and zero emission vehicles. Eligible value chain enabling activities include mining of metals used in battery production, refinement of materials, battery and electric motor production. The bank has communicated that it will view favorably projects that consider the reuse and use of secondary raw materials in production and recyclability of batteries. While the bank does not explicitly reference market standards for management of E&S risks related to enabling activities, all eligible assets are subject to the bank's applicable risk management practices which include enhanced E&S due diligence for activities with heightened risks.

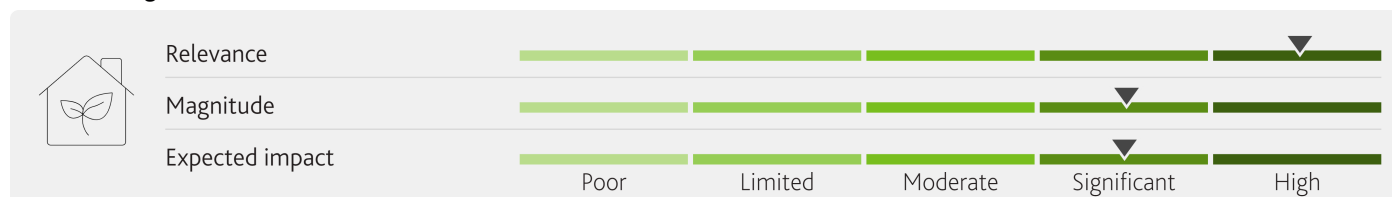
Sustainable water and wastewater management



The relevance of this category is significant because both Canada and US already benefit from mature and efficient water systems relative to developing economies. Still, investments that improve water quality, efficiency and conservation remain relevant to enhance the sustainable management of water resources particularly in areas facing high water stress risks. These risks are amplified in the context of demographic growth and climate change, which underscores the need to improve water quality, water use efficiency and conservation strategies.

The magnitude of this category is significant because projects are expected to yield beneficial environmental outcomes by improving the sustainable management of water resources and reducing the energy intensity of water systems. Investments to increase the resilience of stormwater management and flood defense systems are likely to minimize risks of sewer overflows. Water system projects are required to comply with an energy efficiency improvement of 30%. The bank has shared that it will prioritize allocations to projects with neutral or negative emissions, strengthening the likely environmental impact of projects. While positive, the eligibility criteria do not include a criterion to minimize water leakage. Eligible projects also include water metering activities as a demand side reduction lever to promote efficient water use. The category excludes financing of desalination plants.

Green buildings and infrastructure



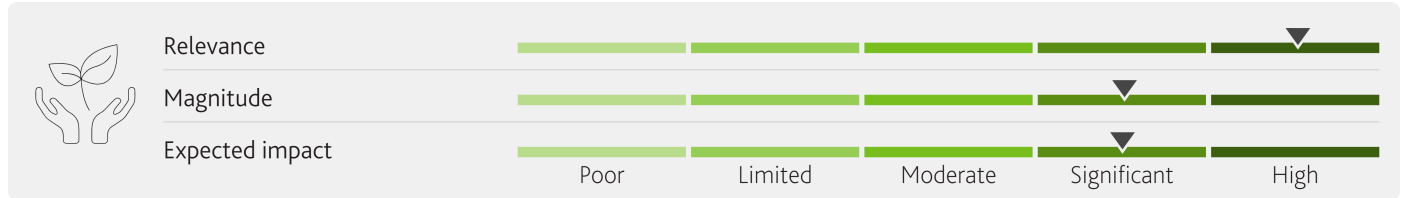
The relevance of this category is high. According to the IEA, operational energy use in buildings account for a third of global final energy consumption and is responsible for 26% of global energy related emissions, primarily for the consumption of heat and electricity.¹² Electricity related building emissions account for substantial shares at 18% and 30% of the total 2021 emission inventory in Canada and the US, respectively, highlighting the need for further investments in green sustainable buildings. Furthermore, the banking sector plays an important role in directing funds toward the development of energy and resource-efficient buildings to reduce energy consumption and energy-related emissions.

The financed projects are likely to have a significant magnitude. The criteria used to evaluate eligibility of projects include adherence to internationally recognized building certifications such as the Leadership in Energy and Environmental Design (LEED) Gold and above or equivalent, and a 30% reduction in emissions or improvement in energy efficiency for refurbished buildings, in line with market standards. The criteria also include buildings that are in the top 15% in energy efficiency in their respective local regions. However, not all buildings will be certified to the highest market standards and the minimum project eligibility criteria for any project type (e.g., new construction, acquisition or renovation) only require at least one of the criteria to be met.

Although eligible data center projects in the category reference relevant power usage effectiveness (PUE) thresholds, there is limited visibility on the management and mitigation of environmental externalities from water use at financed data centers. The PUE criteria

under the framework is below the global average PUE of 1.55.¹³ However, a lower and more ambitious PUE threshold for existing data centers can deliver stronger data center efficiency, according to the thresholds listed under the Climate Neutral Data Center Pact, a market recognized voluntary scheme.¹⁴

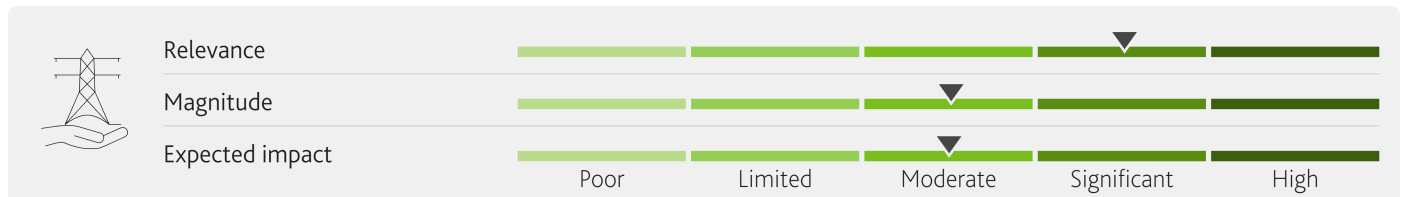
Climate change adaptation



Projects under this category are highly relevant to efforts to promote climate resilience of infrastructure amid rising climate change risks. Although exposure to physical climate risks in Canada and the US is relatively low at the national level, some regions and sectors in both countries experience higher exposure to climate hazards, highlighting the need for adaptation financing. The banking sector plays a central role to provide capital flows for adaptation projects.

The magnitude is significant as projects will likely have long-term environmental benefits to climate change adaptation. The eligible projects include the construction and development of infrastructure projects to increase asset resiliency to severe weather events from flood, drought and fires. Other eligible projects include technologies to improve climate monitoring and early warning systems to enhance the resiliency of assets as well as nature-based solutions. Although no lock-in effects were identified, there is limited visibility into whether the financed adaptation projects will consistently employ best available approaches to address the specific climate risk in the location of projects.

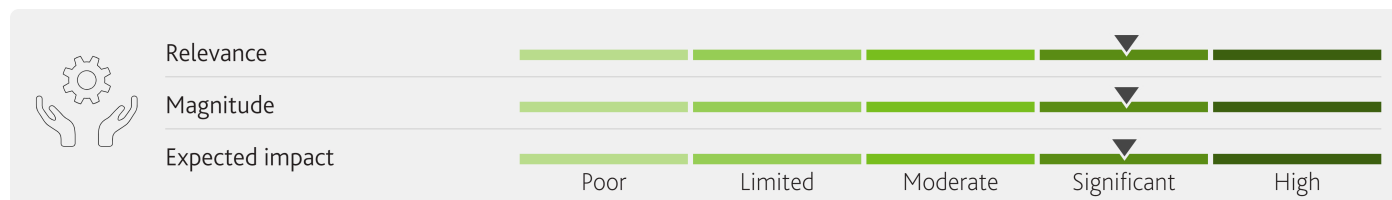
Access to basic infrastructure



The relevance of the project category is significant because the projects will likely improve access to basic infrastructure for underserved and remote communities. Although the projects address a relevant social challenge, access to basic services such as clean water, sanitation and energy are generally not critical issues in advanced economies compared with developing economies, as the former typically benefit from stronger existing infrastructure and national programs to guarantee the provision of basic services to its population.

The magnitude of the projects is moderate. The bank will use definitions provided by relevant government agencies in the region of financing to identify rural communities and low-to-moderate income population with insufficient infrastructure. While the projects are likely to benefit a vulnerable population, affordability of the services may not be guaranteed for all, as some services, specifically telecom services, may be provided at the prevailing market rate. The bank has shared that majority of proceeds will most likely be allocated to clean energy projects that support power transmission and distribution to the identified target population. For eligible transport projects such as roads and bridges, the bank aims to consider projects that provide improved access for the target population where no or limited infrastructure currently exists. Although projects will likely provide a long-term social benefit, such transport projects may carry negative environmental externalities.

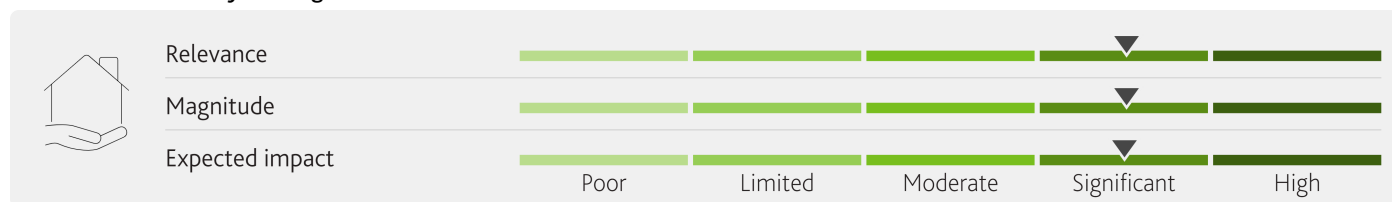
Access to essential services



The project category has significant relevance. The provision of essential services is not a major social challenge in Canada and the US as both countries benefit from strong institutions, resources and programs for healthcare and education in line with those of other advanced economies. Still, continued investments in the social infrastructure will be critical in maintaining quality of services in Canada and the US.

The magnitude of projects is significant because the projects will likely benefit a vulnerable target population over the long term. Projects are expected to benefit the general population, with more specific vulnerable groups identified for some healthcare and education services and activities. Eligible projects for financing include public, government-subsidized, or non-profit health and education facilities. For eligible projects in Canada, the country’s universal healthcare and publicly funded education systems provides assurance of the accessibility and affordability of services for the target population. Financing of eligible health care and education facilities in the US are made under the Community Reinvestment Act, which aims to provide loans to organizations serving low- and moderate-income communities. However, more specific affordability programs for the most vulnerable population can drive higher social impact.

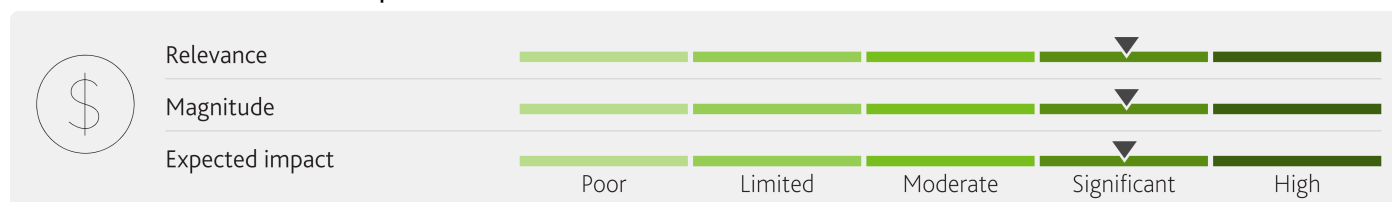
Affordable/community housing



According to national statistics, one of five Canadian households live in unaffordable housing, defined as spending 30% or more of before-tax household income on shelter.¹⁵ In the US, the shortage of affordable and available homes disproportionately affects extremely low income households across all states and in the 50 largest metro areas. Although Canada and the US broadly benefit from strong access to housing when compared with other countries on a global scale, there are vulnerable areas within both jurisdictions with housing deficits that have constrained housing affordability for many residents. This highlights the still relevant need to deploy affordable housing solutions to expand access in affected areas. The banking sector plays a critical role to support affordable housing initiatives through national programs such as Canada’s affordable housing initiative of the Canadian Mortgage and Housing Corporation and the Community Reinvestment Act in the US.

The magnitude is significant because the projects will provide structural improvement to the housing challenges faced by a vulnerable population. The target population is determined according to local jurisdiction guidelines for low- and moderate-income individuals, as highlighted in the framework. Eligible projects include rent-to-own programs, as well as housing for qualifying individuals or family households with defined income limits to increase access to homeownership and options for affordable housing. While the projects provide housing solutions to a vulnerable population, the category does not exclusively target the housing needs of the most vulnerable communities or those at the lowest income band. Eligible projects may also include mixed-use housing with affordable units. The bank has shared that the social impact from these developments will be reported on a pro-rata basis.

Socioeconomic advancement and empowerment



The relevance for this project category is significant. Although financing of micro, small and medium enterprises (MSMEs) will provide a solution that addresses a highly important social issue for the banking sector, there is a lower need for MSME support in advanced economies compared with developing economies. Nevertheless, loans directed to MSMEs that are owned 51% or greater by women, Indigenous Peoples, and people of color are important to support their growth, financial inclusion and participation in the national economy.

The magnitude is significant. Under this category, the bank aims to support the socioeconomic development and financial inclusion of a vulnerable target population, defined as MSMEs where more than 51% of ownership is held by the identified target population in economically underperforming regions. Although eligibility includes small and medium sized enterprises, the bank has shared that it intends to prioritize allocating proceeds raised from issuances under the framework to support micro enterprise loans. We believe this increases the likelihood that the majority of social benefits will be targeted for the most vulnerable. Favorably, the bank supports MSME business development and socioeconomic empowerment through no cost financial literacy tools and resources specific to small businesses.

ESG risk management

We have not applied a negative adjustment for ESG risk management to the expected impact score. TD has a robust ESG risk management in place, integrating ESG into its existing risk management framework. As detailed in the sustainable financing framework, all eligible assets will be subject to the bank’s applicable financial and nonfinancial risk identification and assessment processes, which includes environmental and social risks. TD is a signatory to and a participant in key global initiatives that advance transparency and disclosures in sustainability. The bank’s ESG reporting is informed by several global sustainability disclosure standards, frameworks and initiatives including, but not limited to, the Task Force on Climate-Related Financial Disclosures (now maintained by the International Sustainability Standards Board), the Glasgow Financial Alliance for Net Zero, the Net-Zero Banking Alliance, the Partnership for Carbon Accounting Financials, Climate Disclosure Project, the Equator Principles and the UN Environment Programme Finance Initiative.

Coherence

We have not applied a negative adjustment for coherence to the expected impact score. Projects to be financed under TD’s framework are informed by the bank’s sustainability strategy. The bank has committed to achieve net zero in its operations and financing emissions across its lending portfolio by 2050. Eligible green category projects under the framework align with the bank’s commitment to support the broader economy’s transition to a low carbon pathway. Social category projects to be financed under the framework are informed by TD’s Pathways to Economic Inclusion strategy, which encompasses initiatives to support access to employment, financial access and housing for communities in need.

Appendix 1 — Mapping eligible categories to the United Nations' Sustainable Development Goals

The 13 eligible categories included in TD's framework are likely to contribute to 10 of the United Nations' Sustainable Development Goals (SDGs), namely:

UN SDG 17 Goals	Eligible Category	SDG Targets
GOAL 3: Good Health and Well-being	Access to essential services	3.8: Achieve universal health coverage with access to quality and affordable essential health-care services and medicines for all
GOAL 4: Quality Education	Access to essential services	4.A: Build and upgrade education facilities that provide safe and effective learning environments for all
GOAL 6: Clean Water and Sanitation	Access to basic infrastructure	6.1: Achieve universal and equitable access to safe and affordable drinking water for all
	Sustainable water and wastewater management	6.4: Increase water-use efficiency across all sectors and ensure sustainable supply of freshwater to reduce water scarcity
GOAL 7: Affordable and Clean Energy	Access to basic infrastructure	7.1: Ensure universal access to affordable, reliable and modern energy services
	Nuclear energy; Renewable energy	7.2: Increase substantially the share of renewable energy in the global energy mix
	Energy efficiency; Green buildings and infrastructure	7.3: Double the global rate of improvement in energy efficiency
GOAL 10: Reduced Inequality	Affordable/community housing; Socioeconomic advancement and empowerment	10.2: Empower and promote the social, economic and political inclusion of all
GOAL 11: Sustainable Cities and Communities	Affordable/community housing	11.1: Ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums
	Clean transportation	11.2: Provide access to safe, affordable, accessible and sustainable transport systems for all
	Pollution prevention and control	11.6: Reduce the adverse per capita environmental impact of cities, with special attention to air quality and waste management
	Access to basic infrastructure; Climate adaptation and resilience; Green buildings and infrastructure; Sustainable water and wastewater management	11.B: Increase number of cities with plans towards inclusion, resource efficiency, and climate change and disaster resiliency
GOAL 12: Responsible Consumption and Production	Sustainable water and wastewater management	12.2: Achieve the sustainable management and efficient use of natural resources
	Pollution prevention and control	12.4: Achieve environmental management of chemicals and all wastes, and reduce their release to air, water and soil
		12.5: Substantially reduce waste generation through prevention, reduction, recycling and reuse
GOAL 13: Climate Action	Climate adaptation and resilience; Clean transportation; Energy efficiency; Nuclear energy; Renewable energy; Pollution prevention and control; Sustainable management of natural resources	13.1: Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries
GOAL 14: Life Below Water	Sustainable management of natural resources	14.2: Sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts
GOAL 15: Life on Land	Sustainable management of natural resources	15.2: Promote the implementation of sustainable management of all types of forests

The United Nations' Sustainable Development Goals (SDGs) mapping in this SPO considers the eligible project categories and associated sustainability objectives/benefits documented in the issuer's financing framework, as well as resources and guidelines from public institutions, such as the ICMA SDG Mapping Guidance and the UN SDG targets and indicators.

Appendix 2 — Summary of eligible categories in TD's framework

Eligible categories	Project Description	Sustainability objectives	Impact reporting indicators
Renewable energy	<p>Acquisition, construction, development, operation, production, transport, distribution, renovation and/or maintenance of one or more of the following renewable energy generation sources:</p> <ul style="list-style-type: none"> • Wind energy • Geothermal energy with direct life-cycle emissions <100gCO₂e/kWh • Solar energy • Tidal and ocean energy generation • Waste biomass and renewable biofuels, sourced from sustainable agriculture and forestry residues, with direct life-cycle emissions <100gCO₂e/kWh • Hydropower • Hydrogen produced through renewable energy sources with direct life-cycle emissions <36.4gCO₂e/MJN • Infrastructure to support the integration of renewable energy into the grid, including connections of renewables into the grid and investments to increase transmission capacity of the grid that comply with at least one of the following: <ul style="list-style-type: none"> • More than 67% of newly enabled generation capacity in the system is below the generation threshold value of 100gCO₂e/kWh, over a rolling five-year period • The average system grid emissions factor does not exceed 100gCO₂e/kWh on a life-cycle basis, over a rolling five-year period 	Climate change mitigation	<ul style="list-style-type: none"> • Annual renewable energy generation (megawatt hours or MWh) and/or capacity of renewable energy plants constructed or rehabilitated (MW) • Annual GHG emissions reduced/avoided in tonnes of CO₂ equivalent (tonnes CO₂e)
Nuclear energy	<p>Acquisition, construction, development, operation, renovation, and/or maintenance of certain facilities, systems, or equipment related to nuclear energy:</p> <ul style="list-style-type: none"> • New and existing nuclear generation of electricity, heat, and/or hydrogen production • Research and development of technologies that produce energy from nuclear processes, with minimal waste from the fuel cycle • Investments in increasing the operating life span and/or output efficiency of existing nuclear power plants, including improvements in the level of operational safety 	Climate change mitigation	<ul style="list-style-type: none"> • Annual nuclear energy generation (kilowatt hours or kWh) and/or capacity of nuclear power plant(s) constructed or rehabilitated (MW) • Annual GHG emissions reduced/avoided in tonnes of CO₂ equivalent (tonnes CO₂e)
Energy efficiency	<p>Acquisition, construction, development, operation, renovation and/or maintenance of:</p> <ul style="list-style-type: none"> • Energy distribution, storage and management, including: <ul style="list-style-type: none"> • Efficient district heating and cooling systems • Energy management and storage facilities or infrastructure • Energy performance monitoring equipment • Energy efficiency projects that result in or are expected to result in a minimum 30% increase in energy efficiency and/or a 30% reduction in associated greenhouse gas (GHG) emissions 	Climate change mitigation	<ul style="list-style-type: none"> • Annual energy savings (MWh) • Annual GHG emissions reduced/avoided in tonnes of CO₂ equivalent (tonnes CO₂e)
Pollution prevention and control	<p>Acquisition, construction, research, development, infrastructure, operation, renovation and/or maintenance of facilities, systems or equipment used for:</p> <ul style="list-style-type: none"> • Treatment/remediation, collection, reduction of emissions, reduction of non-hazardous waste or treatment of contaminated soil • Diverting non-hazardous waste away from landfill • Carbon capture and storage (CCS) including direct air capture projects, with permanent underground geological storage of CO₂ and with a capture efficiency design of 90% or higher • Landfill gas capture projects for non-operational landfills with a capture efficiency design of 75% or higher 	Pollution prevention and control	<ul style="list-style-type: none"> • Amount of air pollutants prevented or reduced (tonnes) • Amount of waste diverted from landfill (tonnes) • Number of CCUS projects financed (#) and/or the associated annual GHG emissions reduced/captured in tonnes of CO₂ equivalent (tonnes CO₂e)

Eligible categories	Project Description	Sustainability objectives	Impact reporting indicators
Sustainable management of natural resources	<p>Acquisition, development and/or operation of sustainably managed resources certified by credible third-party certification systems, including:</p> <ul style="list-style-type: none"> • Sustainable agriculture <ul style="list-style-type: none"> • Canada Organic • USDA Organic • Round Table on Responsible Soy Association Standard • Sustainable forestry <ul style="list-style-type: none"> • Sustainably managed forest holdings and forest products including the Forest Stewardship Council, Programme for the Endorsement of Forest Certification, or Sustainable Forestry Initiative • Sustainable aquaculture and fisheries <ul style="list-style-type: none"> • Marine Stewardship Council • Aquaculture Stewardship Council • Best Aquaculture Practices (2 stars or more) <p>Agricultural activities, facilities, equipment and technologies that improve resource use efficiency, reduce GHG emissions, and/or improve climate resilience, including:</p> <ul style="list-style-type: none"> • Advanced irrigation techniques • Precision farming, regenerative agriculture, and/or protected agriculture including greenhouses and shade houses • Use of climate smart farm inputs, including Rainforest Alliance certified biological crop protection • Production of alternative proteins <p>Conservation of biodiversity and terrestrial and aquatic ecosystems through preservation, restoration and sustainable management activities as applied by public sector and not-for-profit environmental organizations or equivalent private initiatives</p>	Biodiversity; Natural resource conservation	<ul style="list-style-type: none"> • Area of sustainable agriculture projects (hectares), with reference to specific certification schemes where relevant • Area of sustainable forestry projects (hectares), with reference to specific certification schemes where relevant • Number of projects financed (#)
Clean transportation	<p>Acquisition, construction, development, operation, renovation and/or maintenance of:</p> <ul style="list-style-type: none"> • Electrified and hydrogen fuel cell vehicles • Electrified rail, trams, and trolleybuses • Passenger rail (<50gCO₂e/km; 0gCO₂e/km after 2025) • Hybrid or electric buses (<50gCO₂e/km; 0gCO₂e/km after 2025) • Zero-emission freight vehicles including rail and water transport vessels • Supporting infrastructure dedicated to low-carbon transport including hydrogen refueling and electric vehicle charging stations • Transportation infrastructure including network expansions and capacity improvements of metro/train systems and station upgrades • Cycling and walking infrastructure • Raw materials and/or enabling components used in the production of electrified and zero-emission vehicles, including batteries, battery and fuel cells, electric motors, powertrains and other components used in zero-emission propulsion systems 	Climate change mitigation	<ul style="list-style-type: none"> • Annual absolute (gross) GHG emissions in tonnes of CO₂ equivalent avoided (tonnes CO₂e) • Public transit passenger capacity (#)
Sustainable water and wastewater management	<p>Acquisition, construction, development, operation, renovation and/or maintenance of facilities, systems or equipment used for sustainable water and wastewater management, including:</p> <ul style="list-style-type: none"> • Collection, treatment, recycling and/or reuse of water and wastewater • Flood defense, mitigation, prevention or stormwater management • Improvement to water infrastructure that increases water efficiency, including leakage control and water metering technologies 	Sustainable water and wastewater management; Pollution prevention and control	<ul style="list-style-type: none"> • Annual reduction in water use (litres) • Wastewater treated (litres) • Total population served by system (#)

Eligible categories	Project Description	Sustainability objectives	Impact reporting indicators
Green buildings and infrastructure	<p>Acquisition, construction, development, operation, renovation and/or maintenance of residential and/or commercial buildings that meet one of the following criteria:</p> <ul style="list-style-type: none"> • Received, or expect to receive based on their design, construction and/or operation plans, certification of regional (beyond mandatory levels), national or internationally recognized standards, including: <ul style="list-style-type: none"> - LEED Gold or Platinum - BOMA BEST Gold or Platinum - BREEAM Excellent or Outstanding - ENERGY STAR minimum of 85 • Refurbishment projects that result in or are expected to result in a minimum 30% improvement in energy efficiency and/or a 30% reduction in GHG emissions, based on a third-party assessment • Energy efficient buildings that are in the top 15% in their respective geographic regions based on a third-party methodology or assessment • Data centres that meet or are expected to meet the following Power Usage Effectiveness (PUE) requirements: <ul style="list-style-type: none"> • For data centres constructed prior to January 1, 2021, design or operational PUE of 1.5 or below • For data centres constructed on or after January 1, 2021, design or operational PUE of 1.4 or below 	Climate change mitigation	<ul style="list-style-type: none"> • Annual energy savings (MWh) • Annual GHG emissions reduced/avoided in tonnes of CO2 equivalent (tonnes CO2e) • Floor space of green real estate (m2)
Climate adaptation and resilience	<p>Acquisition, construction, development, operation, renovation and/or maintenance of facilities, systems or equipment used for projects related to:</p> <ul style="list-style-type: none"> • Information and communications technology for climate monitoring and data collection/management, including observation and early warning systems • Nature-based solutions that promote climate resiliency • Prevention, defense, management and mitigation barriers for severe weather events, including flood, drought and fire • Residential and commercial real estate climate resiliency 	Climate change adaptation	<ul style="list-style-type: none"> • Number of adaptation and resilience measures installed (#) • Types of adaptation and resilience measures • Area covered by flood, drought, and/or fire mitigation and management activities (km2) • Reduction in repair costs due to climate-related weather events (\$)
Access to basic infrastructure	<p>Construction, development, operation, renovation and/or maintenance of facilities, services, systems or equipment used for:</p> <ul style="list-style-type: none"> • Infrastructure to provide low- and moderate-income or rural communities access to services, including clean drinking water, sewers, sanitation, transport, clean energy and telecommunications (including mobile and internet access) 	Access to basic infrastructure	<ul style="list-style-type: none"> • Additional people served by infrastructure type (#)

Eligible categories	Project Description	Sustainability objectives	Impact reporting indicators
Access to essential services	<p>Healthcare Construction, development, operation, renovation and/or maintenance of facilities, services, systems or equipment for public, subsidized and/or non-profit healthcare, including:</p> <ul style="list-style-type: none"> • Hospitals, clinics, health-care centres, hospices and medical equipment • Care centres, including childcare centres, community centres, eldercare centres, refugee centres, safe houses and organizations that provide care and refuge to target populations such as the homeless, survivors of domestic abuse and persons with disabilities • Mental health facilities and services • Public health systems, including emergency response and disease control services • Health and medical education, including emergency medical response training • Healthcare and medical research • Digital healthcare <p>Education Construction, development, operation, renovation and/or maintenance of facilities, services, systems or equipment for public and/or government-subsidized education, including:</p> <ul style="list-style-type: none"> • Universities, colleges, schools and early learning services • Activities that target inclusion of excluded and/or marginalized target populations in the education system, including women, Indigenous, Native Americans or People of Colour • Digital learning 	Access to essential services	<ul style="list-style-type: none"> • Number of hospitals and other healthcare facilities built or refurbished (#) • New or improved service provided by number of beds (#) • Number of people serviced (#) • Number of educational institutions funded by type (#) • Number of students served (#)
Affordable/community housing	<p>Construction, development, purchase, operation, renovation and/or maintenance of facilities, services, systems or equipment for the following:</p> <ul style="list-style-type: none"> • Housing for individuals or households whose income is below 80% of the area median income (AMI) and/or where housing costs are ≤30% of pre-tax income • Rent-to-own programs for households or individuals whose income is below 80% of the AMI or 120% of the AMI in high-cost areas • Accredited and registered affordable housing, halfway homes and shelters qualifying under local and/or regional classification, including: <ul style="list-style-type: none"> • Canada Mortgage and Housing Corporation • U.S. Community Reinvestment Act 	Affordable housing	<ul style="list-style-type: none"> • Number of affordable/community housing units built or refurbished (#) • Number of people with access to affordable housing (#)
Socioeconomic advancement and empowerment	<p>Micro-, small- and medium-sized enterprises (MSME) in regions that economically underperform or suffer from multiple deprivations as measured in the local context.</p> <p>Activities that support the socioeconomic development of excluded and/or marginalized populations and communities such as:</p> <ul style="list-style-type: none"> • Businesses where at least 51% of the owners of the enterprise are a member of historically excluded and/or marginalized target populations including women, Indigenous, Native Americans or People of Colour • Indigenous Peoples' band, council, government and/or organizations • Activities designed to qualify for credit under the U.S. Community Reinvestment Act, including Community Development Financial Institutions 	Socioeconomic advancement and empowerment	<ul style="list-style-type: none"> • Number of Micro, Small & Medium Enterprises (MSMEs) financed • Number of Community Development Financial Institutions (CDFIs) financed

Endnotes

- 1 Point-in-time assessment is applicable only on date of assignment or update.
- 2 International Energy Agency, [Net Zero by 2050](#), accessed August 2024.
- 3 Climate Bond Initiative, [Hydrogen Criteria](#), accessed August 2024.
- 4 International Energy Agency, [Net Zero by 2050](#), accessed August 2024.
- 5 US Energy Information Administration, [Nuclear Power Plants](#), accessed August 2024.
- 6 Canada Energy Regulator, [Market Snapshot: The Potential Role of Nuclear in Canada's Energy Share](#), accessed August 2024.
- 7 The Nuclear Waste Management Organization, [Canada's deep geological repository](#), accessed August 2024.
- 8 US Environment Protection Agency, [GHG Inventory 2023 Chapter 7 Waste](#), accessed August 2024.
- 9 IEA, [Canada 2022 Energy Policy Review](#), accessed August 2024.
- 10 Network for Greening the Financial System, [Statement on Nature-Related Financial Risks](#), accessed August 2024.
- 11 International Energy Agency, [Energy Statistics Data Browser](#), accessed August 2024.
- 12 International Energy Agency, [Buildings](#), accessed August 2024.
- 13 Uptime Institute, [2022 Global Data Center Survey](#), accessed August 2024.
- 14 Climate Neutral Data Center Pact, accessed September 2024
- 15 Government of Canada, [Housing costs and affordability](#), accessed August 2024.

Moody's assigns SPOs in alignment with the main tenets of the ICMA Guidelines for Green, Social, Sustainability and Sustainability-Linked Bonds External Reviews and the LSTA/LMA/APLMA Guidance for Green, Social and Sustainability-Linked Loans External Reviews, as applicable; Moody's practices may however diverge in some respects from the practices recommended in those documents. Moody's approach to assigning SPOs is described in its Assessment Framework, and is subject to the ethical and professional principles set forth in the Moody's Investors Service Code of Professional Conduct.

Additional terms with respect to Second Party Opinions (as defined in Moody's Investors Service Rating Symbols and Definitions): Please note that a Second Party Opinion ("SPO") is not a "credit rating". The issuance of SPOs is not a regulated activity in many jurisdictions, including Singapore. JAPAN: In Japan, development and provision of SPOs fall under the category of "Ancillary Businesses", not "Credit Rating Business", and are not subject to the regulations applicable to "Credit Rating Business" under the Financial Instruments and Exchange Act of Japan and its relevant regulation. PRC: Any SPO: (1) does not constitute a PRC Green Bond Assessment as defined under any relevant PRC laws or regulations; (2) cannot be included in any registration statement, offering circular, prospectus or any other documents submitted to the PRC regulatory authorities or otherwise used to satisfy any PRC regulatory disclosure requirement; and (3) cannot be used within the PRC for any regulatory purpose or for any other purpose which is not permitted under relevant PRC laws or regulations. For the purposes of this disclaimer, "PRC" refers to the mainland of the People's Republic of China, excluding Hong Kong, Macau and Taiwan.

© 2024 Moody's Corporation, Moody's Investors Service, Inc., Moody's Analytics, Inc. and/or their licensors and affiliates (collectively, "MOODY'S"). All rights reserved.

CREDIT RATINGS ISSUED BY MOODY'S CREDIT RATINGS AFFILIATES ARE THEIR CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT OR DEBT-LIKE SECURITIES, AND MATERIALS, PRODUCTS, SERVICES AND INFORMATION PUBLISHED OR OTHERWISE MADE AVAILABLE BY MOODY'S (COLLECTIVELY, "MATERIALS") MAY INCLUDE SUCH CURRENT OPINIONS. MOODY'S DEFINES CREDIT RISK AS THE RISK THAT AN ENTITY MAY NOT MEET ITS CONTRACTUAL FINANCIAL OBLIGATIONS AS THEY COME DUE AND ANY ESTIMATED FINANCIAL LOSS IN THE EVENT OF DEFAULT OR IMPAIRMENT. SEE APPLICABLE MOODY'S RATING SYMBOLS AND DEFINITIONS PUBLICATION FOR INFORMATION ON THE TYPES OF CONTRACTUAL FINANCIAL OBLIGATIONS ADDRESSED BY MOODY'S CREDIT RATINGS. CREDIT RATINGS DO NOT ADDRESS ANY OTHER RISK, INCLUDING BUT NOT LIMITED TO: LIQUIDITY RISK, MARKET VALUE RISK, OR PRICE VOLATILITY. CREDIT RATINGS, NON-CREDIT ASSESSMENTS ("ASSESSMENTS"), AND OTHER OPINIONS INCLUDED IN MOODY'S MATERIALS ARE NOT STATEMENTS OF CURRENT OR HISTORICAL FACT. MOODY'S MATERIALS MAY ALSO INCLUDE QUANTITATIVE MODEL-BASED ESTIMATES OF CREDIT RISK AND RELATED OPINIONS OR COMMENTARY PUBLISHED BY MOODY'S ANALYTICS, INC. AND/OR ITS AFFILIATES. MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND MATERIALS DO NOT CONSTITUTE OR PROVIDE INVESTMENT OR FINANCIAL ADVICE, AND MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND MATERIALS ARE NOT AND DO NOT PROVIDE RECOMMENDATIONS TO PURCHASE, SELL, OR HOLD PARTICULAR SECURITIES. MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND MATERIALS DO NOT COMMENT ON THE SUITABILITY OF AN INVESTMENT FOR ANY PARTICULAR INVESTOR. MOODY'S ISSUES ITS CREDIT RATINGS, ASSESSMENTS AND OTHER OPINIONS AND PUBLISHES OR OTHERWISE MAKES AVAILABLE ITS MATERIALS WITH THE EXPECTATION AND UNDERSTANDING THAT EACH INVESTOR WILL, WITH DUE CARE, MAKE ITS OWN STUDY AND EVALUATION OF EACH SECURITY THAT IS UNDER CONSIDERATION FOR PURCHASE, HOLDING, OR SALE.

MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS, AND MATERIALS ARE NOT INTENDED FOR USE BY RETAIL INVESTORS AND IT WOULD BE RECKLESS AND INAPPROPRIATE FOR RETAIL INVESTORS TO USE MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS OR MATERIALS WHEN MAKING AN INVESTMENT DECISION. IF IN DOUBT YOU SHOULD CONTACT YOUR FINANCIAL OR OTHER PROFESSIONAL ADVISER.

ALL INFORMATION CONTAINED HEREIN IS PROTECTED BY LAW, INCLUDING BUT NOT LIMITED TO, COPYRIGHT LAW, AND NONE OF SUCH INFORMATION MAY BE COPIED OR OTHERWISE REPRODUCED, REPACKAGED, FURTHER TRANSMITTED, TRANSFERRED, DISSEMINATED, REDISTRIBUTED OR RESOLD, OR STORED FOR SUBSEQUENT USE FOR ANY SUCH PURPOSE, IN WHOLE OR IN PART, IN ANY FORM OR MANNER OR BY ANY MEANS WHATSOEVER, BY ANY PERSON WITHOUT MOODY'S PRIOR WRITTEN CONSENT. FOR CLARITY, NO INFORMATION CONTAINED HEREIN MAY BE USED TO DEVELOP, IMPROVE, TRAIN OR RETRAIN ANY SOFTWARE PROGRAM OR DATABASE, INCLUDING, BUT NOT LIMITED TO, FOR ANY ARTIFICIAL INTELLIGENCE, MACHINE LEARNING OR NATURAL LANGUAGE PROCESSING SOFTWARE, ALGORITHM, METHODOLOGY AND/OR MODEL.

MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND MATERIALS ARE NOT INTENDED FOR USE BY ANY PERSON AS A BENCHMARK AS THAT TERM IS DEFINED FOR REGULATORY PURPOSES AND MUST NOT BE USED IN ANY WAY THAT COULD RESULT IN THEM BEING CONSIDERED A BENCHMARK.

All information contained herein is obtained by MOODY'S from sources believed by it to be accurate and reliable. Because of the possibility of human or mechanical error as well as other factors, however, all information contained herein is provided "AS IS" without warranty of any kind. MOODY'S adopts all necessary measures so that the information it uses in assigning a credit rating is of sufficient quality and from sources MOODY'S considers to be reliable including, when appropriate, independent third-party sources. However, MOODY'S is not an auditor and cannot in every instance independently verify or validate information received in the credit rating process or in preparing its Materials.

To the extent permitted by law, MOODY'S and its directors, officers, employees, agents, representatives, licensors and suppliers disclaim liability to any person or entity for any indirect, special, consequential, or incidental losses or damages whatsoever arising from or in connection with the information contained herein or the use of or inability to use any such information, even if MOODY'S or any of its directors, officers, employees, agents, representatives, licensors or suppliers is advised in advance of the possibility of such losses or damages, including but not limited to: (a) any loss of present or prospective profits or (b) any loss or damage arising where the relevant financial instrument is not the subject of a particular credit rating assigned by MOODY'S.

To the extent permitted by law, MOODY'S and its directors, officers, employees, agents, representatives, licensors and suppliers disclaim liability for any direct or compensatory losses or damages caused to any person or entity, including but not limited to by any negligence (but excluding fraud, willful misconduct or any other type of liability that, for the avoidance of doubt, by law cannot be excluded) on the part of, or any contingency within or beyond the control of, MOODY'S or any of its directors, officers, employees, agents, representatives, licensors or suppliers, arising from or in connection with the information contained herein or the use of or inability to use any such information.

NO WARRANTY, EXPRESS OR IMPLIED, AS TO THE ACCURACY, TIMELINESS, COMPLETENESS, MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OF ANY CREDIT RATING, ASSESSMENT, OTHER OPINION OR INFORMATION IS GIVEN OR MADE BY MOODY'S IN ANY FORM OR MANNER WHATSOEVER.

Moody's Investors Service, Inc., a wholly-owned credit rating agency subsidiary of Moody's Corporation ("MCO"), hereby discloses that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by Moody's Investors Service, Inc. have, prior to assignment of any credit rating, agreed to pay to Moody's Investors Service, Inc. for credit ratings opinions and services rendered by it. MCO and Moody's Investors Service also maintain policies and procedures to address the independence of Moody's Investors Service credit ratings and credit rating processes. Information regarding certain affiliations that may exist between directors of MCO and rated entities, and between entities who hold credit ratings from Moody's Investors Service, Inc. and have also publicly reported to the SEC an ownership interest in MCO of more than 5%, is posted annually at www.moody.com under the heading "Investor Relations — Corporate Governance — Charter Documents - Director and Shareholder Affiliation Policy."

Moody's SF Japan K.K., Moody's Local AR Agente de Calificación de Riesgo S.A., Moody's Local BR Agência de Classificação de Risco LTDA, Moody's Local MX S.A. de C.V., I.C.V., Moody's Local PE Clasificadora de Riesgo S.A., and Moody's Local PA Clasificadora de Riesgo S.A. (collectively, the "Moody's Non-NRSRO CRAs") are all indirectly wholly-owned credit rating agency subsidiaries of MCO. None of the Moody's Non-NRSRO CRAs is a Nationally Recognized Statistical Rating Organization.

Additional terms for Australia only: Any publication into Australia of this document is pursuant to the Australian Financial Services License of MOODY'S affiliate, Moody's Investors Service Pty Limited ABN 61 003 399 657AFSL 336969 and/or Moody's Analytics Australia Pty Ltd ABN 94 105 136 972 AFSL 383569 (as applicable). This document is intended to be provided only to "wholesale clients" within the meaning of section 761G of the Corporations Act 2001. By continuing to access this document from within Australia, you represent to MOODY'S that you are, or are accessing the document as a representative of, a "wholesale client" and that neither you nor the entity you represent will directly or indirectly disseminate this document or its contents to "retail clients" within the meaning of section 761G of the Corporations Act 2001. MOODY'S credit rating is an opinion as to the creditworthiness of a debt obligation of the issuer, not on the equity securities of the issuer or any form of security that is available to retail investors.

Additional terms for India only: Moody's credit ratings, Assessments, other opinions and Materials are not intended to be and shall not be relied upon or used by any users located in India in relation to securities listed or proposed to be listed on Indian stock exchanges.

Additional terms with respect to Second Party Opinions (as defined in Moody's Investors Service Rating Symbols and Definitions): Please note that a Second Party Opinion ("SPO") is not a "credit rating". The issuance of SPOs is not a regulated activity in many jurisdictions, including Singapore. JAPAN: In Japan, development and provision of SPOs fall under the category of "Ancillary Businesses", not "Credit Rating Business", and are not subject to the regulations applicable to "Credit Rating Business" under the Financial Instruments and Exchange Act of Japan and its relevant regulation. PRC: Any SPO: (1) does not constitute a PRC Green Bond Assessment as defined under any relevant PRC laws or regulations; (2) cannot be included in any registration statement, offering circular, prospectus or any other documents submitted to the PRC regulatory authorities or otherwise used to satisfy any PRC regulatory disclosure requirement; and (3) cannot be used within the PRC for any regulatory purpose or for any other purpose which is not permitted under relevant PRC laws or regulations. For the purposes of this disclaimer, "PRC" refers to the mainland of the People's Republic of China, excluding Hong Kong, Macau and Taiwan.

REPORT NUMBER 1419663