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Second Party Opinion

# Ontario Teachers' Pension Plan's Green Financing Framework

Jan. 11, 2024

**Location:** Canada

**Sector:** Financial Services

## Alignment With Principles

Aligned = ✓ Conceptually aligned = ○ Not aligned = ✗

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

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

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**Dark green**

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

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

## Strengths

**Ontario Teachers' Pension Plan (OTPP) has set quantitative decarbonization targets.** It conducted a portfolio-level greenhouse gas (GHG) emissions inventory and disclosed the results and key methodological building blocks publicly.

**Use of proceeds under the framework is robust.** OTPP's leading category of renewable energy has life cycle emissions thresholds.

**OTPP explicitly considers lock-in risk and rebound effects in its diligence processes.** Carbon capture utilization and storage projects financed under the framework are prohibited from any application supporting lock-in emissions from fossil fuel assets.

## Weaknesses

No weaknesses to report.

## Areas to watch

**Several project categories are broadly defined.** Some projects in scope may not be explicitly outlined in the framework. While OTPP has strong selection procedures, some projects may carry risks that must be carefully managed in practice.

## Eligible Green Projects Assessment Summary

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

### Renewable energy Dark to Medium green

Generation, transmission, and distribution of renewables (e.g., wind, solar, geothermal, marine, bioenergy, hydropower, green hydrogen and renewable natural gas), the lifecycle impacts of which are 100g CO<sub>2</sub>/kwh or less

Biomass projects restricted to sustainable feedstocks that, at a minimum, are certified by the Forest Stewardship Council (FSC), Sustainable Biomass Program, Green Gold Label or equivalent third-party standard, as well as waste sources that do not compete with food products or contribute to deforestation, such as palm oil

Hydropower projects that meet at least one of the following criteria i) run-of-river without artificial reservoir; or ii) power density greater than 5 W/m<sup>2</sup> or iii) lifecycle-GHG emissions intensity is below 100g CO<sub>2</sub>e/kwh

Equipment to enable the generation, development, and integration of renewables, noted above (e.g., sensors, communications and controls, and microgrids)

### Clean Transportation Dark green

Fundamental infrastructure for deployment of zero direct emissions vehicles (e.g., mass public transportation, electrification of rail infrastructure, electric vehicles charging stations)

Zero-carbon transport assets (e.g., electric or other clean energy vehicles)

### Energy Efficiency Medium green

Technologies, products or systems that improve energy efficiency and consider sector-decarbonization trajectories aligned with credible science-based decarbonization pathways and/or the EU Taxonomy and that consider lock-in and rebound effects (e.g., district heating and cooling technologies based on deep lake cooling or other zero emissions sources). Projects in heavily emissions-intensive industries such as cement and steel, are excluded

Investments that improve efficiency in the delivery of bulk energy services and consider sector decarbonization trajectories aligned with credible science-based decarbonization pathways and/or the EU Taxonomy and that consider lock-in and rebound effects (e.g., smart grids, power grid stabilization)


Investments to monitor and/or optimize energy consumption and consider sector decarbonization trajectories aligned with credible science-based decarbonization pathways and/or the EU Taxonomy and that consider lock-in and rebound effects (e.g., energy storage, sub-metering, load control systems, sensors)

### Green Buildings Light green


New or existing commercial or residential buildings that achieve ENERGY STAR certification and are verified by third-party green building standards (e.g., LEED: Platinum, Gold, BOMA BEST: Platinum, Gold BREEAM Excellent or Outstanding, or equivalent certification schemes)

**Pollution Prevention and Control**  **Dark green**


Activities that demonstrate considerable sequestration of GHG emissions (e.g., carbon sequestration technologies or products, direct air capture, and removal of carbon)

**Climate Change Adaptation**  **Dark green**

Projects to support climate change adaptation, including information support systems (e.g., climate observation, early warning systems)


**Sustainable Water and Wastewater Management**  **Medium to Light green**

Projects that reduce water consumption or improve the efficiency of resources and result in a substantial reduction in water leakage, as well as, emissions efficiency improvements that consider sector decarbonization trajectories that are aligned with credible science-based decarbonization pathways and/or the EU Taxonomy and that consider lock-in and rebound effects (e.g., collection, treatment, recycling or reuse of water, rainwater or wastewater, water distribution). Where anaerobic digestion systems are used, plants should be designed to capture, scrub, dry, and use waste as a source of power. Note: The energy source and CO2 emissions of wastewater management facilities are considered.

**Natural Resources and Land Use**  **Dark green**


Activities that contribute to sustainable management of natural resources and land use (e.g., certified sustainable timberland (focused on providing timber) and agriculture (focused on permanent crop), biological crop protection, drip irrigation). Certifications that OTPPB would consider include: Forest Stewardship Council, Sustainable Forestry Initiative, Responsible Wood, Programme for the Endorsement of Forest Certification, Leading Harvest, and California Certified Organic Farmers

Eligible projects may also include activities that contribute to sustainable agricultural land management, demonstrating significant carbon sequestration, reduction in emissions and/or compatibility with low carbon agriculture targets

**Pollution Prevention and Control**  **Medium to Light green**

Projects that reduce and manage emissions and waste generated (e.g., recycling (metals, plastic, and paper) plants, waste diversion, soil remediation)

Separate collection, transport, and >50% recovery of non-hazardous waste of landfill diversion

**Circular Economy**  **Dark to Medium green**

Solutions that extend product-life, significantly improve resource use, reduce waste and pollution, are designed to be fully recyclable or composted and innovative technologies that enable circular business models (e.g., substitution of virgin raw materials in the production of resource efficient packaging and products that are entirely or nearly entirely (>90%) produced with recycled content that prevents the use of raw materials)

**Terrestrial and Aquatic Biodiversity**  **Medium green**

Projects that focus on the conservation of terrestrial and aquatic resources, including the protection of coastal, marine, and watershed environments by safeguarding and/or developing protected terrestrial and marine areas and systems (e.g., regenerative agriculture which seeks to increase biodiversity, forestry projects which seek to promote biologically diverse systems)

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

Ontario Teachers' is a global investor with net assets of \$249.8 billion (as at June 30, 2023) invested in more than 50 countries in a broad array of assets including public and private equities, fixed income, credit, commodities, natural resources, infrastructure, real estate and venture growth to deliver retirement security for 336,000 working members and pensioners. Founded in 1990, Ontario Teachers' is a fully funded defined benefit pension plan and has offices in Hong Kong, London, Mumbai, San Francisco, Singapore and Toronto.

## Material Sustainability Factors

### Climate transition risks

Pension funds are exposed to climate transition risk through financing economic activities, which affects the environment. As one of the largest investors in the economy, stakeholders may pressure pension funds to promote decarbonization of the economy through investment policy while preserving their fiduciary duty to their clients. Thus, the sector engages investees and other stakeholders to promote less carbon-intensive activities and greener business models. Policies and regulations to reduce emissions across high-emitting sectors, like oil and gas, metals and mining, real estate, or transportation, could raise funds' exposure to counterparty, market, and liquidity risks as pressures mount to phase out carbon-intensive assets and technologies across the economy, which may impact the performance of funds. Still, pension funds' diversified nature and opportunities to invest in the green economy limit their exposure to climate transition risks.

### Climate physical risks

Physical climate risks increasingly affect economic activity as climate change raises the frequency and severity of extreme weather events. Pension funds finance a wide array of business sectors that are exposed to physical climate risks, exposing funds to them through investing. However, as diversified investors, pension funds are positioned to manage their geographic exposures and, thus, partially mitigate exposure to weather events, which are typically localized. On the other hand, funds may contribute to mitigating the effects of physical climate risks by financing adaptation projects and climate-resilient infrastructure, as well as by investing in solutions that support business adaptation and continuity in exposed geographies.

### Biodiversity and resource use

Pension funds contribute to significant resource use and biodiversity effect through investment activity. For example, the construction sector, a major recipient of capital markets financing, is a large consumer of raw materials such as steel and

cement. Similarly, investments in agriculture can impair biodiversity. On the other hand, through stewardship, funds are positioned to promote sustainable business models and improve resource use through circular economy practices.

### Access and affordability

Investment funds generally play a large role in providing economic resilience for individuals saving for life events, such as retirement, education, home ownership, or other expenses. Funds--particularly pension funds--provide broad access to savings and investment products that establish financial security for aging populations. Their design, management, and performance influence customers' income and wealth in each phase of life and, hence, their relevance in securing sustainable income in retirement.

## Issuer And Context Analysis

**The eligible project categories relate directly to OTPP's responsible investing principles.** Many project categories--renewable energy, pollution prevention and control, and clean transport for example--aim to address climate transition risk, which we consider a material sustainability factor for OTPP. The climate adaptation project category also seeks to contribute toward building out technologies to better manage physical climate risks, another key sustainability factor. In addition, biodiversity and land use is a relevant consideration in the context of the framework and has support from several project categories. This includes the terrestrial and aquatic biodiversity project category, which aims to promote climate and biodiversity benefits through regenerative agriculture and other technologies.

**OTPP's decarbonization targets are a positive reflection of its efforts to manage the climate transition.** The fund is committed to a net zero by 2050 target, and its credibility is enhanced by its quantitative interim targets:

- Reduce portfolio emissions intensity by 45% by 2025 compared to a 2019 baseline.
- Reduce portfolio emissions intensity by 67% by 2030 compared to a 2019 baseline.

**The entity is tracking and reporting its progress toward these goals on an annual basis.** Its latest Responsible Investing and Climate Strategy Report includes detailed portfolio emissions reporting, such as a sector-based carbon footprint contribution broken down by share of holdings and share of emissions. The report also includes metrics relating to its carbon intensity by asset class, as well as its approach to maintaining its decarbonization trajectory through defining and allocating capital toward what it calls High Carbon Transition Assets.

**To address physical risks, OTPP uses asset-level assessments to understand and mitigate climate risks associated with specific investments.** While OTPP's public disclosures include a broad spectrum of relevant environmental risks, they focus most on transition risk. There are no metrics or targets related to physical risk in its public reporting, which is not atypical for the sector.

**OTPP has well-defined responsible investing guidelines, which drive its green investment activity.** Its investment due diligence process includes physical climate risk assessments, life cycle emissions analysis and transition stress testing. OTPP engages with its portfolio companies and frequently votes in favor of ESG-related shareholder proposals on its public companies. While we view the company as positively differentiated from the sector in terms of climate risk analysis and disclosure, there is still relatively little quantitative disclosure on other portfolio environmental effects such as biodiversity. Such reporting is nascent globally, but we believe it will be increasingly adopted over time.

# 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

OTPP commits to allocate an amount equal to the net proceeds of every green financing issued under its green finance framework to fund projects aimed at renewable energy, clean transportation, energy efficiency, green buildings, pollution prevention and control, climate change adaptation, sustainable water and wastewater management, natural resources and land use, circular economy, and terrestrial and aquatic biodiversity. The fund commits to finance its assets within the eligibility criteria for green financing and exclude investments that increase the use of fossil fuels and that wouldn't support the transition to a low-carbon economy. For investments in companies under this framework, it applies a pure-play criteria, meaning that all or substantially all of the investee company's revenues must be derived from eligible green activities.

### ✓ Process for project evaluation and selection

The framework contains a description of the OTPP's process for project evaluation and selection. The fund identifies relevant environmental objectives of all green eligible projects. OTPP's Green Bond Council, chaired by the Head of Treasury, is comprised of representatives who are selected from its treasury, sustainable investing team, and various investing departments, as well as a representative of the Ontario Teachers' Finance Trust (OTFT). The fund identifies and manages potential environmental and social risks as detailed in its responsible investment policy.

### ✓ Management of proceeds

OTPP's Green Bond Council is responsible for tracking and managing an amount equal to the net proceeds from the issuance of each green financing. OTPP provides clear commitment of the proceeds, adjusted to match allocations to eligible projects. Eligible Green Assets include existing investments made up to 36 months prior to the issuance date of any Green Bond as well as new investments made after issuance. The pending allocation of the Green Bond issuance will be used in line with normal liquidity activities, taking into consideration the exclusion criteria. The council will check OTPP's proceeds at least annually to account for any need to reallocate proceeds that no longer fulfill the eligibility criteria.

### ✓ Reporting

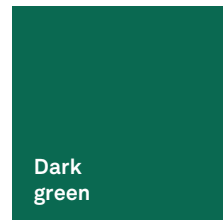
OTPP commits to allocation and impact reporting through its annual Green Bond Report until full allocation. The allocation report will include a list of outstanding Green Bond issuances by OTFT, disclosure on the same within Green Bond Register, including assets by the International Capital Market Association's (ICMA) Green Bond Principles category, assets by geography (where feasible), and case studies on assets that are being financed.

# 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.

Based on current OTPP Green Bond Registry allocations, we expect OTPP to allocate the majority of the proceeds under the framework to the renewable energy, natural resources and land use, energy efficiency, and a small share in sustainable water and wastewater management. The remaining proceeds will likely be allocated to projects such as clean transportation, green buildings, pollution prevention and control, circular economy, climate change adaptation, and terrestrial and aquatic biodiversity.

The Eligible Green Assets will include existing investments made up to three years prior to the issuance of the green bond, as well as the new investments made after the issuance.



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

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

## Overall Shades of Green assessment

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

## Green project categories

### Renewable energy

#### Assessment

 Dark to Medium green

#### Description

##### Products or services that replace direct fossil-fuel use:

Generation, transmission and distribution of renewables (e.g., wind, solar, geothermal, marine, bioenergy, hydro, green hydrogen and renewable natural gas, the lifecycle impacts of which are 100g CO<sub>2</sub>/kWh or less).

Biomass projects restricted to sustainable feedstocks that, at a minimum, are certified by the Forest Stewardship Council (FSC), Sustainable Biomass Program, Green Gold Label, or equivalent third party standard, as well as waste sources that do not compete with food products or contribute to deforestation, such as palm oil.


Hydropower projects that meet at least one of the following criteria i) run-of-river without artificial reservoir; or ii) power density greater than 5 W/m<sup>2</sup>; or iii) lifecycle-GHG emissions intensity is below 100 gCO<sub>2</sub>e/kWh.

## Analytical considerations

- Projects in the renewables category are a key part of the transition and the further selection criteria help ensure these are best-in-class projects in the technology type, though bioenergy may come with heightened environmental risks compared with other technology types. OTPP includes an emissions threshold for the whole life cycle of the majority of its renewables projects, which we view positively.
- Bioenergy is widely seen as a renewable energy source due to its reliance on tree growth, which absorbs CO<sub>2</sub> in the growing phase. Certified biomass helps ensure feedstocks are sustainably produced. However, unless the feedstocks are ringfenced to waste byproduct, there could still be appreciable direct and indirect land use effects.
- OTPP's assets in biomass energy production will use best in-class technology to maximize energy production and reduce NO<sub>x</sub> and SO<sub>x</sub> emissions, which partially mitigates concerns about pollution from the combustion phase.

- Note that the threshold of 100 gCO<sub>2</sub>/kWh is relevant for the whole life cycle of the relevant project categories, including transmission and distribution.


**Renewable Energy**

Assessment	Description
 Dark green	<p><b>Technologies or infrastructure to facilitate low-carbon solutions:</b></p> <p>Equipment to enable the generation, development, and integration of renewables, noted above (e.g., sensors, communications and controls, microgrids).</p>

**Analytical considerations**

- Equipment in this category will be only for renewable energy projects, and we view this integration as essential for the energy transition.
- Note that materials used in infrastructure equipment may have some degree of embodied emissions and environmental effects from sourcing.


**Clean Transportation**

Assessment	Description
 Dark green	<p><b>Technologies or infrastructure to facilitate low-carbon solutions:</b></p> <p>Fundamental infrastructure for deployment of zero direct emissions vehicles (e.g., mass public transportation, electrification of rail infrastructure, electric vehicles charging stations).</p> <p>Zero-carbon transport assets (e.g., electric or other clean energy vehicles).</p>

**Analytical considerations**

- Only zero-direct-emissions vehicles are eligible, which we view as positively supporting the energy transition . This includes public transportation, passenger rail (interurban), and passenger and commercial vehicles. Hybrid and natural-gas-related vehicles are not eligible under this framework.
- The production of batteries and sourcing of raw materials can have substantial climate and environmental effects, though OTPP includes a sourcing analysis to mitigate, to the extent possible, environmental detriments.
- The construction of infrastructure projects (e.g., new railways and railway stations, technical buildings related to new railways that follow no further requirements beyond regulations) may include embodied emissions through building materials.

**Energy efficiency**

Assessment	Description
 Medium green	<p><b>Products or services that significantly reduce emissions:</b></p> <p>Technologies, products or systems that improve energy efficiency and consider sector decarbonization trajectories aligned with credible science-based decarbonization pathways and/or the EU Taxonomy and that consider lock-in and rebound effects (e.g., district heating and cooling technologies based on deep lake cooling or other zero emission sources).</p> <p>Projects in heavily emissions-intensive industries such as cement and steel, are excluded.</p>



Investments that improve efficiency in the delivery of bulk energy services and consider sector decarbonization trajectories aligned with credible science-based decarbonization pathways and/or the EU Taxonomy and that consider lock-in and rebound effects (e.g., smart grids, power grid stabilization).

Investments to monitor and/or optimize energy consumption and consider sector decarbonization trajectories aligned with credible science-based decarbonization pathways and/or the EU Taxonomy and that consider lock-in and rebound effects (e.g., energy storage, sub-metering, load control systems, sensors).

**Analytical considerations**

- OTPP has specified that investments in fossil fuel infrastructure are excluded from financing under this framework, except where they will be replaced by clean alternatives.
- We note the lack of specific efficiency thresholds. However, OTPP has specified that energy efficiency thresholds will be evaluated on a case-by-case basis and will align with the EU Taxonomy or credible science-based decarbonization pathways and will consider lock-in and rebound effects.
- There is no guarantee that grid stabilization will support cleaner grids.
- Smart grids and grid stabilization play a key role in improving the flexibility of the power system, particularly as renewable energy, which is often intermittent and unpredictable, takes a greater share of the energy supply mix.
- OTPP has specified that investments in upgrading district heating systems are excluded, given their direct exposure to fossil fuels.
- OTPP excludes investments with direct exposure in fossil fuels. Thus, energy storage will be for renewables only, and sub-metering is directed at end-user consumption. Ontario Teachers' cannot control whether these measures (e.g., smart metering) are based on fossil fuel infrastructure.
- OTPP has excluded direct investments in fossil fuel assets. However, there could be indirect investments in efficiency improvements to fossil fuel-based equipment, especially for measures such as smart metering, which are directed at end-user consumption. Where such financing is involved, we expect efficiency improvements to lead to a significant reduction in fossil fuel consumption and to avoid the risk of lock-in of emissions.

**Green Buildings**

**Assessment**

 Light green

**Description**

**Products or services that significantly reduce emissions:**

New or existing commercial or residential buildings that achieve ENERGY STAR10 certification and are verified by third-party green building standards.

(e.g., LEED: Platinum, Gold, BOMA BEST: Platinum, Gold BREEAM Excellent or Outstanding, or equivalent certification schemes).

**Analytical considerations**

- Given the global nature of OTPP's investments, there will be vast variations in regional building regulations. It will therefore be necessary to consider the ambition and energy performance of the green building project in the context of current national building regulations.
- Buildings that are certified to the LEED Gold and LEED Platinum level are often considered advanced good practice and best practice, respectively. However, this does not guarantee that all relevant climate factors, like embodied emissions and climate resilience, are considered.
- Location-based climate risk assessments screening for flooding, heat stress, and more will be undertaken to determine risk on the asset level. OTPP has specified it identifies mitigation plans to improve resilience amid identified risks.

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- OTPP has included additional energy efficiency thresholds through the ENERGY STAR certification, which leads to, on average, 35% lower energy demand than similar building stock. To achieve ENERGY STAR, the facility must perform in the top 25 percent of similar facilities nationwide for energy efficiency. We note, however, given global scope of OTPP's investments, there will be variations in baseline values. Absolute impact will therefore vary by location.
- Note that green buildings may be heated by district heating, which often have fossil fuel elements in the energy mix or direct natural gas-based heating. Similarly, buildings may be powered by fossil fuel-generated electricity.
- OTPP has not specifically excluded fossil-fuel companies as tenants.

### Pollution Prevention and Control

#### Assessment

 Dark green

#### Description

##### Products or services that remove/store carbon:

Activities that demonstrate considerable sequestration of GHG emissions (e.g., carbon sequestration technologies or products, direct air capture and removal of carbon).

#### Analytical considerations

- Carbon removals are considered necessary in many climate scenarios, and we consider them an important part of the global transition when direct and indirect lock-in risks are sufficiently managed.
- Reforestation and afforestation are not included in this category.
- OTPP has indicated that any assets that directly or indirectly support fossil fuel assets will be excluded.
- The construction or production of such facilities may impose some Scope 3 emissions and should be considered in the process. Materials should be sourced responsibly. The completion of a life cycle assessment (LCA) analysis can capture these aspects.

### Climate Change Adaptation

#### Assessment

 Dark green

#### Description

##### Products or services that help to adapt to climate change impacts:

Projects to support climate change adaptation, including information support systems (e.g., climate observation, early warning systems).

#### Analytical considerations

- IT systems may have carbon intensities due to high storage and data requirements. OTPP has specified that it will include energy efficiency thresholds against business-as-usual (BAU) projections to mitigate the high carbon intensity of data centers.
- Early warning systems can be part of a helpful climate adaptation strategy.
- These technologies are often run on electricity.

### Sustainable Water and Wastewater Management

#### Assessment

 Light to Medium green

#### Description

##### Products or services that preserve or conserve scarce resources:

Projects that reduce water consumption or improve the efficiency of resources and result in a substantial reduction in water leakage, as well as, emissions efficiency improvements will

consider sector decarbonization trajectories as aligned with credible science-based decarbonization pathways and/or the EU Taxonomy and that consider lock-in and rebound effects (e.g., collection, treatment, recycling or reuse of water, rainwater or wastewater, water distribution). Where anaerobic digestion systems are used, plants should be designed to capture, scrub, dry and use waste as a source of power.

Note: The energy source and CO2 emissions of wastewater management facilities is considered.

**Analytical considerations**

- Improving water efficiency and decentralizing water sources will be a key step toward improving water resilience while reducing water risk and water scarcity in drought-prone areas.
- Depending on available technology, wastewater management facilities may be powered by fossil fuels. OTPP has specified that financed facilities will align with the EU Taxonomy or credible science-based decarbonization pathways, as well as consider lock-in and rebound effects. Further, as an active investor, OTPP will engage with companies to adopt best practices for reducing carbon footprint.
- Methane and CO2 is emitted where wastewater and residual sludge are handled under anaerobic conditions.
- OTPP has specified that it will focus financing toward equipment that does not generate significant methane, such as water pipelines, collection points, lift stations, aerated ponds.
- Large construction projects can have significant associated emissions. OTPP will use LCAs to determine where there is a risk of high emissions, though projects with high embodied emissions may still be eligible.

**Natural Resources and Land use**

**Assessment**

 Dark green

**Description**

**Products or services that preserve or conserve scarce resources:**

Activities that contribute to sustainable management of natural resources and land use (e.g., certified sustainable timberland (focused on providing timber) and agriculture (focused on permanent crop), biological crop protection, drip irrigation).

The following lists the certifications that we would consider:

- Forest Stewardship Council
- Sustainable Forestry Initiative
- Responsible Wood
- Programme for the Endorsement of Forest Certification
- Leading Harvest
- California Certified Organic Farmers

Eligible projects may also include activities that contribute to sustainable agricultural land management, demonstrating significant carbon sequestration, reduction in emissions and/or compatibility with low carbon agriculture targets.

**Analytical considerations**


- We expect this category to receive a moderate portion of financing under this framework.
- Wood will be certified with one of multiple certifications, including FSC and PEFC, which is an umbrella organization including SFI and Responsible Wood. These standards set requirements for reducing environmental impacts of timber, including controlling for deforestation and conserving old growth forests.

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- Agriculture will be certified with either Leading Harvest, which addresses 13 sustainability principles, such as sustainable agriculture, energy use and climate change, and waste and material management; or by CCOF Certified Organic, which means crops are organically grown without sewage sludge, GMOs, ionizing radiation, and most synthetic pesticides and fertilizers. Biological crop protection projects will not necessarily include any climate benefits in the form of emissions reductions. Organic farming often requires more land area than nonorganic farming practices. However, there are environmental benefits in reducing pesticide use.
- Assets not aligned with a low-carbon economy are excluded, such as assets relating to livestock, deforestation, and conversion of virgin forest.
- The drip irrigation technique has been found to reduce water usage by up to 70% and to increase crop yield by 90% compared to conventional irrigation alternatives. OTPP has specified irrigation projects will account for water scarcity.

### Pollution Prevention and Control

#### Assessment

 Medium to Light green

#### Description

##### Products or services that preserve or conserve scarce resources:

Projects that reduce and manage emissions and waste generated (e.g., recycling (metals, plastic and paper) plants, waste diversion, soil remediation).


Separate collection, transport, and >50% recovery of non-hazardous waste of landfill diversion.

#### Analytical considerations

- OTPP has indicated that this may include some fossil fuel-based infrastructure or equipment, depending on best available equipment.
- OTPP has specified that assets will be screened to ensure that measures for local pollution control (e.g., particle filter retrofits) will not lead to an increase in GHG emissions.
- Preventing pollution at the source should be a core consideration to prevent incineration of waste and to reduce waste volumes. The success and ambition of waste recycling and waste reduction depends on the quality of waste collection and sorting capacity.
- OTPP has informed that any new construction of facilities will be on brownfield sites.
- Separate waste collection is a precondition for reuse and recycling, and the whole process often leads to a net reduction in emissions. Additional emissions resulting from waste collection are minimal compared to overall net GHG emission reduction of reuse and recycling activities. Projects in this category should demonstrate a clear accounting of emissions and proven reductions.
- Investments in this category will be primarily directed at waste management companies that recover waste and divert waste from landfills. This includes reuse, repurpose, and recycle processes.

### Circular Economy

#### Assessment

 Medium to Dark green

#### Description

##### Products or services that preserve or conserve scarce resources:

Solutions that extend product-life, significantly improve resource use, reduce waste and pollution, are designed to be fully recyclable or composted and innovative technologies that enable circular business models (e.g., substitution of virgin raw materials in the production of resource efficient packaging and products that are entirely or nearly entirely (>90%) produced with recycled content that prevents the use of raw materials)

**Analytical considerations**

- Financing in this category is focused on consumer packaging, with a focus on highly innovative solutions to minimize plastic use.
- Eligible projects would maximize use of recycled plastics, reduce the amount of materials in packaging, and improve design and structural efficiencies that reduce transportation costs.

**Terrestrial and Aquatic Biodiversity**

**Assessment**

 **Medium green**













**Description**

Projects that focus on the conservation of terrestrial and aquatic resources, including the protection of coastal, marine and watershed environments by safeguarding and/or developing protected terrestrial and marine areas and systems (e.g., regenerative agriculture which seeks to increase biodiversity, forestry projects which seek to promote biologically diverse systems).

**Analytical considerations**

- Expected projects may include a mix of technology and regenerative farming practices to achieve positive outcomes such as the ability of soil to store carbon and better soil health.
- Considerations in the screening process may include but are not limited to effects on: water quantity or quality and water ecosystems, pollutants and nutrient run-off and leaching, and habitats and species. OTPP also considers reduced use of pesticides and consideration of alternative approaches or techniques, which may include non-chemical alternatives to pesticides, as well as minimal use of fertilizers.
- In protected areas, OTPP confirms that the activity is in accordance with the conservation objectives for those areas.

S&P Global Ratings' Shades of Green

Assessments					
 Dark green	 Medium green	 Light green	 Yellow	 Orange	 Red
<b>Description</b>					
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.
<b>Example projects</b>					
 Solar power plants	 Energy efficient buildings	 Hybrid road vehicles	 Health care services	 Conventional steel production	 New oil exploration

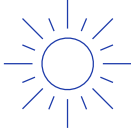
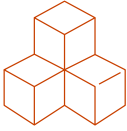
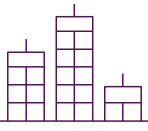
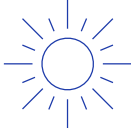


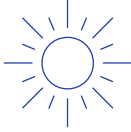
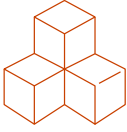

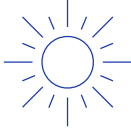
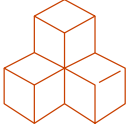

Note: For us to consider use of proceeds aligned with ICMA Principles for a green project, we require project categories directly funded by the financing to be assigned one of the three green Shades.

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

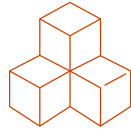
Where the Financing documentation references the Sustainable Development Goals (SDGs), we consider which SDGs it contributes to. We compare the activities funded by the Financing to the International Capital Markets Association (ICMA) SDG mapping and outline the intended linkages within our SPO analysis.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

This framework intends to contribute to the following SDGs:

Use of proceeds	SDGs		
Renewable Energy	 <b>7. Affordable and clean energy*</b>	 <b>9. Industry, innovation and infrastructure*</b>	 <b>11. Sustainable cities and communities*</b>
Clean Transportation	 <b>7. Affordable and clean energy</b>	 <b>9. Industry, innovation and infrastructure</b>	 <b>11. Sustainable cities and communities*</b>
Energy Efficiency	 <b>7. Affordable and clean energy*</b>	 <b>9. Industry, innovation and infrastructure*</b>	 <b>11. Sustainable cities and communities*</b>
Green Buildings	 <b>7. Affordable and clean energy</b>	 <b>9. Industry, innovation and infrastructure</b>	 <b>11. Sustainable cities and communities*</b>

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Pollution Prevention and Control



**9. Industry, innovation and infrastructure**



**13. Climate action**

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Climate Adaptation



**13. Climate action**

---

Sustainable Water and Wastewater Management



**6. Clean water and sanitation\***



**11. Sustainable cities and communities\***



**12. Responsible consumption and production\***



**14. Life below water**



**15. Life on land**

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Natural Resources and Land Use



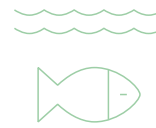
**6. Clean water and sanitation**



**11. Sustainable cities and communities\***



**12. Responsible consumption and production\***



**14. Life below water**



**15. Life on land**

---

Circular Economy



**6. Clean water and sanitation**



**11. Sustainable cities and communities\***



**12. Responsible consumption and production\***



**14. Life below water**



**15. Life on land**



Terrestrial and Aquatic Biodiversity



**14. Life below water\***



**15. Life on land\***

\*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

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## Second Party Opinion: Ontario Teachers' Pension Plan's Green Financing Framework

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