

Second-Party Opinion

City of Vancouver Green Bond

Evaluation Summary

Sustainalytics is of the opinion that the City of Vancouver Green Bond Framework is credible and impactful and aligns with the four core components of the Green Bond Principles 2018. This assessment is based on the following:



USE OF PROCEEDS The use of proceeds includes a comprehensive list of eligible categories that are important for low-carbon and climate resilient growth and all seven categories are aligned with those recognized by the Green Bond Principles. Sustainalytics considers that the project categories will have clear positive environmental impacts and address the City’s environmental needs.



PROJECT EVALUATION / SELECTION The responsibility for project selection and evaluation belongs to the City’s Finance, Risk and Supply Chain Management Department, in consultation with other relevant departments such as Engineering Services; Planning, Urban Design, and Sustainability; and Real Estate and Facilities Management. Support by a strong governance structure is in line with market practice.



MANAGEMENT OF PROCEEDS The City of Vancouver will deposit and record funds separately which tracks the allocation of funds towards eligible projects. Pending allocation, the proceeds will be held in cash or liquid fixed-income instruments. The City’s processes to manage and track proceeds using internal reporting systems are in line with market practice.



REPORTING The City of Vancouver has committed to publish once a year, through the City of Vancouver’s website, updates on the allocation of proceeds, including updates on the eligible projects funded and relevant key performance indicators where feasible, as aligned with market practice.

Evaluation date	June 29, 2018
Issuer Location	Vancouver, Canada

Report Sections

Introduction	2
Sustainalytics’ Opinion	3
Appendices	9

For inquires, contact the Sustainable Finance Solutions project team:

Ankita Shukla (New York)
 Project Manager
 ankita.shukla@sustainalytics.com
 (+1) 617 603 3329

Zach Margolis (Toronto)
 Project Support
 zach.margolis@sustainalytics.com
 (+1) 647 695 4341

Charlotte Peyraud (New York)
 Client Relations Manager
 charlotte.peyraud@sustainalytics.com
 (+1) 646 518 0184

Introduction

The City of Vancouver is Canada's eighth-largest city, and the most populous in the Province of British Columbia, with over 656,000 inhabitants in 2017. The greater metropolitan area is home to over 2,590,000 people, making it the third-largest in the country. The City of Vancouver is the densest city in Canada and has the lowest greenhouse gas emissions per capita of any major city in North America. The City of Vancouver has committed itself to ambitious environmental goals, including becoming the greenest city in the world by 2020 and to generate 100% of its energy from renewable sources before 2050.

The City of Vancouver has developed the City of Vancouver Green Bond Framework (the "framework") under which it will be issuing green bonds and using the proceeds to finance or refinance, in whole or in part, existing and future projects that provide environmental benefits to the City and support the achievement of environmental and climate goals. The framework defines eligibility criteria in the following areas:

1. Renewable Energy
2. Energy Efficiency
3. Green Buildings
4. Clean Transportation
5. Pollution Prevention and Control
6. Sustainable Water and Wastewater Management
7. Environmentally Sustainable Management of Living Natural Resources

The City of Vancouver engaged Sustainalytics to review the City of Vancouver Green Bond Framework and provide a second-party opinion on the alignment of the green bond with the Green Bond Principles 2018 (the "GBP"), as administered by the International Capital Market Association (the "ICMA")¹, and the framework's environmental credentials. This framework has been published in a separate document².

As part of this engagement, Sustainalytics held conversations with various members of the City of Vancouver's budgeting, capital planning, sustainability and treasury teams to understand the sustainability impact of their business processes and planned use of proceeds, as well as management of proceeds and reporting aspects of the City's green bond. Sustainalytics also reviewed relevant public documents and non-public information.

This document contains Sustainalytics' opinion of the City of Vancouver Green Bond Framework and should be read in conjunction with that framework.

¹ ICMA's Green Bond Principles 2018 <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/June-2018/Green-Bond-Principles---June-2018-140618-WEB.pdf>

² <http://vancouver.ca/default.aspx>

Sustainalytics' Opinion

Section 1: Sustainalytics' Opinion on the City of Vancouver Green Bond Framework

Summary

Sustainalytics is of the opinion that the City of Vancouver Green Bond Framework is credible and impactful and aligns with the four core components of the Green Bond Principles 2018. Sustainalytics' opinion is based on the following:

- The eligible use of proceeds categories (i.e. Renewable Energy, Energy Efficiency, Green Buildings, Clean Transportation, Pollution Prevention and Control, Sustainable Water and Wastewater Management, and Environmentally Sustainable Management of Living Natural Resources) are all recognized by the Green Bond Principles as project categories with clear environmental benefits, and Sustainalytics views these projects as having a positive environmental impact (for additional information on impact see Section 3). Further, the City has communicated to Sustainalytics that it will avoid investments in fossil fuel and fossil fuel related grid infrastructure.
 - The Green Buildings eligibility criterion for new buildings or retrofitted existing buildings is based on third-party certification standards such as LEED (Gold or higher) and Passive House Standards. Sustainalytics has conducted an evaluation of the schemes used (see Appendix 1), and considers this to be in line with market practice, and provides adequate transparency and assurance on the level of energy efficiency gains rendered by the financed projects.
- The City of Vancouver's Finance, Risk and Supply Chain Management Department (FRS) is responsible for project evaluation and selection, in consultation with other relevant City departments such as Engineering Services; Planning, Urban Design and Sustainability; and Real Estate and Facilities Management. Sustainalytics considers that the required collaboration between the municipality's decision-making bodies is likely to strengthen the implementation of the City's green bond framework.
- The net proceeds raised by a green bond issuance will be deposited and recorded separately which ensures monitoring and tracking of the use of proceeds. Unallocated proceeds may be held in cash or invested in liquid fixed income instruments, in accordance with the Vancouver Charter. The City's processes to manage and track proceeds using internal reporting systems are in line with market practice.
- The City of Vancouver has committed to report once a year, through the City of Vancouver's website, updates on the allocation of proceeds to eligible projects as well as the balance of funds remaining. Furthermore, the City will provide a summary and status report of the eligible projects funded, as well as relevant City's key performance indicators for the various use of proceeds categories, including but not limited to: GHG emissions avoided, list of third-party certifications received, amount of waste diverted from landfills, changes in water consumption and conservation efforts. Other impact reporting indicators will be included to the extent possible. Moreover, the principle of free access to public records provides additional transparency into the operations of the City.

Alignment with Green Bond Principles 2018

Sustainalytics has determined that the City of Vancouver Green Bond Framework aligns to the four core components of the Green Bond Principles 2018. For detailed information please refer to Appendix 2: Green Bond/Green Bond Programme External Review Form.

Section 2: Sustainability Strategy of the Issuer

Contribution of the framework to the City's sustainability plans and strategies

Sustainalytics is of the opinion that the City of Vancouver has ambitious environmental plans, strategies, and governance structures based on the following:

- The City's Greenest City 2020 Action Plan to become the greenest city in the world by 2020, supported by ten goal areas and 17 measurable targets³; additionally, seven of the ten goals are in line and complement the City's green bond framework.
- Associated strategies developed to help meet the commitments of the Greenest City 2020 Action Plan, including:
 - Renewable City Strategy, which sets the targets of meeting 100% of energy needs from renewable sources by 2050 and reducing greenhouse gas emissions by 80% from 2007 levels over the same period⁴.
 - Zero Waste Vancouver, which seeks to reduce the amount of waste going to landfills by discouraging single-use items and supporting recycling and reuse⁵.
 - Neighbourhood Energy Strategy, which encourages the adoption of neighbourhood-scale energy systems to supply central heating and hot water⁶.
 - Healthy City Strategy, which sets 13 long-term goals as well as specific targets for 2025, including: Cultivating Connections, Active Living and Getting Outside, Getting Around, and Environments to Thrive In⁷.
 - Vancouver Economic Action Strategy, which lays out as a guiding principle that “environmental issues are inseparable from economic issues” and seeks to “target opportunities in the green and creative economies to improve employment expansion and business performance,” with the specific goal of doubling the number of green jobs by 2020⁸.
- The City's Transportation 2040 Plan which has a focus on sustainable mobility and urban planning tailored around the city's current and proposed public transportation facilities. Additionally, it includes relevant short- and long-term targets such as: (i) making the majority (over 50%) of trips on foot, bike, and transit by 2020 and at least two-thirds of all trips by 2040, and (ii) reducing the average distance driven per resident by 20% (by 2020 from 2007 levels)⁹.
- The City's Climate Change Adaptation Strategy, which seeks to prepare the City, its residents, and infrastructure for an increased frequency of extreme weather events and anticipated sea level rise¹⁰.

Sustainalytics is of the opinion that (i) formalizing commitments through ambitious plans and strategies, (ii) setting time-bound targets, and (iii) tracking and reporting progress as per commitments is indicative of the priority that City of Vancouver assigns to achieving environmental results. Overall, Sustainalytics is confident that the City of Vancouver is well-positioned to issue green bonds and that the issuance of green bonds aligns and positively contributes to the City's environmental strategies and targets.

³ <http://vancouver.ca/files/cov/greenest-city-2020-action-plan-2015-2020.pdf>

⁴ <http://vancouver.ca/green-vancouver/renewable-city.aspx>

⁵ <http://vancouver.ca/green-vancouver/zero-waste-vancouver.aspx>

⁶ <http://vancouver.ca/green-vancouver/neighbourhood-energy-strategy.aspx>

⁷ <http://vancouver.ca/people-programs/healthy-city-strategy.aspx>

⁸ <http://vancouver.ca/files/cov/vancouver-economic-action-strategy.pdf>

⁹ <http://vancouver.ca/streets-transportation/transportation-2040.aspx>

¹⁰ <http://vancouver.ca/green-vancouver/climate-change-adaptation-strategy.aspx>

Well positioned to address common environmental and social risks associated with the projects

Sustainalytics recognizes that potential infrastructure upgrades and expansions, including those relating to transportation, waste and wastewater management, and new buildings projects, may be associated with environmental and social risks such as noise and air pollution, water use and discharge, and local community approval.

The City of Vancouver is subject to provincial¹¹ and federal¹² environmental regulations relating to environmental protection, including the need to complete environmental assessments for larger projects. The City of Vancouver itself has by-laws relating to the recycling and disposal of construction waste, and the management of solid waste and wastewater. Furthermore, the City considers community engagement a “fundamental civic goal”, and commits to applying the values of the International Association for Public Participations¹³. Overall, Sustainalytics is confident that the City of Vancouver is well-positioned to identify, manage, and mitigate environmental and social risks associated with the projects financed.

Section 3: Impact of Use of Proceeds

Proceeds of the City of Vancouver’s green bonds will be directed towards the following seven eligible categories: Renewable Energy, Energy Efficiency, Green Buildings, Clean Transportation, Pollution Prevention and Control, Sustainable Water and Wastewater Management, and Environmentally Sustainable Management of Living Natural Resources.

Overall, Sustainalytics is of the opinion that the proceeds from the bonds will have clear positive environmental impacts. Sustainalytics has provided further details on the local environmental impact resulting from certain Eligible Project Categories below.

Advancing the transition to a low-carbon economy and contributing to the achievement of climate-related targets

The City of Vancouver’s Renewable City Strategy outlines the objective of reducing greenhouse gas emissions by 80% from 2007 levels by 2050, while the Greenest City Action Plan sets a 2020 target of 33% below 2007 levels. The City of Vancouver has set three priority actions for the 2015-2020 period to support the achievement of its climate goals: converting existing steam heat systems to renewable energy, developing four new neighbourhood energy systems, and beginning to implement a renewable energy strategy. The City has also laid out an approach to meeting its long-term goals, centred around: reducing energy use, increasing renewable energy use, and increasing renewable energy supply. Sustainalytics views favourably that the City’s transition to a low-carbon economy involves both reducing the total energy used as well as a shift towards renewable sources.

The City of Vancouver’s climate-related goals also align with the ambitions and commitments of the Province of British Columbia and Government of Canada. The Province’s climate commitment is to reduce carbon emissions to 80% below 2007 levels by 2050, as enumerated in the Greenhouse Gas Reduction Targets Act.¹⁴ An interim target of a 6% reduction by 2012 was achieved, although since this time emission levels have plateaued. Nationally, the federal government is a signatory to the Paris Agreement, and has submitted a Nationally Determined Contribution which commits Canada to reducing greenhouse gas emissions by 30% below 2005 levels by 2030, as well as taking action to reduce atmospheric black carbon.¹⁵ Sustainalytics is of the opinion that the City’s investment in renewable energy, energy efficiency, clean transport, and green buildings will contribute to the achievement of local, provincial, and national emissions targets, and support a transition to a low-carbon economy.

¹¹ Relevant legislation includes the Environmental Management Act, the Greenhouse Gas Reductions Targets Act, the Environmental Assessment Act, the Significant Projects Streamlining Act, the Fish Protection Act, the Heritage Conservation Act, and the Drinking Water Protection Act.

¹² Relevant legislation includes the Canadian Environmental Protection Act, The Canadian Environmental Assessment Act, the Fisheries Act, the Navigable Waters Protection Act, the Species at Risk Act, and the Migratory Birds Convention Act.

¹³ <http://vancouver.ca/your-government/how-we-do-community-engagement.aspx>

¹⁴ http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/00_07042_01

¹⁵ <http://www4.unfccc.int/ndcregistry/PublishedDocuments/Canada%20First/Canada%20First%20NDC-Revised%20submission%202017-05-11.pdf>

The importance of green buildings and the built environment

Buildings are the single largest source of emissions in Vancouver, contributing 56% percent of the municipal total in 2014.¹⁶ The majority of these emissions relate to building heating needs, which is most commonly fueled by natural gas, as well as water heating. 38% of building energy used in the typical residential home relate to natural gas-fired space heating. The City of Vancouver's strategy to reduce emissions from buildings involves targeting both the building envelope (e.g. roof, walls, windows, doors) to reduce energy needs, as well as the mechanical systems (e.g. furnace, hot water tank, space heaters) to use energy more efficiently or shift to less-emitting sources. The City's Zero Emissions Building Plan¹⁷ aims to take an incremental "stepping down" approach by setting incrementally more stringent energy use standards in concert with the expansion of district energy systems.

As part of its Plan, the City references the Passive House standard. Passive House is a building standard which seeks to minimize total energy use by utilizing advanced design techniques and materials.¹⁸ The passive house standards emphasize "superinsulation", air-tight construction, heat-recovery ventilation, efficient building shape, and appropriate solar exposure. Passive Houses can achieve energy savings of up to 80-90% compared to typical Canadian building,¹⁹ and the standard can be applied to all types of buildings. Passive house certification is performance-based, with maximum threshold in heating energy load, total energy use per unit of floor area, and building air-tightness. The Passive House certification is intended primarily for use in new construction, as retrofits to existing buildings may not be able to achieve the stringent requirements.²⁰ In response to this issue, the Passive House Institute has developed the EnerPHit certification, which when applied as part of building retrofits can achieve energy savings of 75-90%.²¹ The Zero Emissions Building Plan does not mandate the adoption of Passive House for either new construction or retrofits, however, it is referenced as "a key tool to effectively transform the building industry to greatly improved" performance, and the City has stated its intention to explore building envelope retrofits to EnerPHit standards. Furthermore, the City has confirmed that it is investigating the feasibility of constructing City-owned facilities, in particular a new Fire Hall, to the standard. Sustainalytics believes that the investments in green buildings, including Passive House construction, will support the achievement of the Renewable City Strategy and the Zero Emissions Building Plan.

In addition to setting a target for zero-emissions new buildings, the City's Energy Retrofit Strategy for Existing Buildings²² and the Greenest City Action Plan lay out the steps the City intends to take to retrofit existing buildings to perform comparable to new construction. Actions under these strategies include mandating energy efficiency improvements and providing incentives and support mechanisms for modest retrofits. As part of this initiative, the City is also encouraging conversion of gas heating systems to electric heat pumps. Furthermore, the City is participating in BC Hydro's Continuous Optimization Program²³, which offers support to large hydro and natural gas customers to make efficiency improvements to building systems, in particular HVAC, at its own facilities. Sustainalytics is of the opinion that the use of proceeds related to energy efficiency and existing buildings will have a positive environmental impact and support the achievement of the Renewable City Strategy and the Energy Retrofit Strategy.

Importance of clean transportation to achieving climate-related goals

Fossil fuel-powered vehicles accounted for approximately 37% of the City of Vancouver's total emissions in 2014. Furthermore, passenger vehicle use represented 49% of all transportation within the City.²⁴ The City has set out a strategic plan, Transportation 2040, which aims to shift towards renewably powered vehicles in order to meet air quality and greenhouse gas emissions goals. This strategy re-affirms the Greenest City target of decreasing average vehicle distance per resident by 20% from 2007 levels by 2020. It also sets new mode-share targets: at least half of trips by bike, transit, or on foot by 2020, and at least two thirds of trips by 2040. The City of Vancouver has already taken steps to fulfill its commitments, including the expansion of active

¹⁶ <http://vancouver.ca/green-vancouver/renewable-buildings.aspx>

¹⁷ <http://council.vancouver.ca/20160712/documents/rr2.pdf>

¹⁸ http://www.passivehouse.com/02_informations/01_what_is_a_passive_house/01_what_is_a_passive_house.htm

¹⁹ <http://www.passivehouse.ca/design-fundamentals>

²⁰ http://www.passiv.de/en/03_certification/02_certification_buildings/04_enerphit/04_enerphit.htm

²¹ <https://passipedia.org/certification/enerphit>

²² <http://vancouver.ca/files/cov/Energy-Retrofit-Strategy-for-Buildings-Presentation-for-Council-June-2014.pdf>

²³ <https://www.bchydro.com/powersmart/business/programs/continuous-optimization.html>

²⁴ 42% of trips made by the vehicle driver, and an additional 7% by vehicle passengers. <http://vancouver.ca/green-vancouver/renewable-transportation.aspx>

transportation corridors. Study is ongoing for the expansion of rail-based transit along the Arbutus Corridor as well as working with the regional transit provider, Translink, on the extension of the Millenium Line SkyTrain along Broadway. Sustainalytics views positively the City's commitments to expanding clean transportation, including active transportation and public transit, as such projects are in line with the City's overall environmental goals and will further contribute to local, provincial, and national greenhouse gas reduction targets.

Alignment with/contribution to SDGs

The Sustainable Development Goals (SDGs) were set in September 2015 and form an agenda for achieving sustainable development by the year 2030. This green bond advances the following SDG goals and targets:

Use of Proceeds Category	SDG	SDG target
Renewable Energy Energy Efficiency	7. Affordable and Clean Energy	7.2 By 2030, increase substantially the share of renewable energy in the global energy mix. 7.3 By 2030, double the global rate of improvement in energy efficiency.
Clean Transportation Climate Change Adaptation Green Buildings	11. Sustainable Cities and Communities 13. Climate Action	11.2 By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport. 11.3 By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries. 13.1 Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries.
Pollution Prevention and Control Sustainable Water and Wastewater Management	6. Clean Water and Sanitation 12. Responsible Consumption and Production	6.3 By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally. 12.2 By 2030, achieve the sustainable management and efficient use of natural resources. 12.4 By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil.
Environmentally Sustainable Management of Living Resources	15. Life on Land	15.2 By 2020, promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally.

Conclusion

The City of Vancouver has developed a Green Bond Framework under which it intends to issue green bonds. Proceeds of the bonds will be used to finance or refinance expenditures in the areas that promote a transition to low-carbon and climate-resilient growth including: (i) Renewable Energy, (ii) Energy Efficiency (iii) Green Buildings, (iv) Clean Transportation, (v) Pollution Prevention and Control, (vi) Sustainable Water and Wastewater Management, and (vii) Environmentally Sustainable Management of Living Natural Resources.

Sustainalytics views the following elements of the City of Vancouver's Green Bond Framework positively:

- i. alignment of the eligibility criteria with projects recognized by the Green Bond Principles 2018 as having clear environmental benefits;
- ii. City of Vancouver's comprehensive sustainability strategies, which include ambitious time-bound targets and action items;
- iii. City of Vancouver's strong commitment to transparent reporting, including a commitment to provide once a year a summary of the eligible projects, including updates and status reports, as well as key performance indicators relevant to the projects funded.

Based on the above, Sustainalytics is confident that the City of Vancouver is well positioned to issue green bonds and that its Green Bond Framework is transparent, robust, and in alignment with the four core components of the Green Bond Principles 2018. Additionally, the City of Vancouver's green bond issuances may also set a positive precedent for the promotion of sustainable infrastructure investment by both the public and private sector in the province of British Columbia.

Appendices

Appendix 1: Overview and Comparison of Real Estate Certification Schemes

	LEED	Passive House	Living Building Challenge
Background	Leadership in Energy and Environmental Design (LEED) is a US Certification System for residential and commercial buildings used worldwide. LEED was developed by the non-profit U.S. Green Building Council (USGBC) and covers the design, construction, maintenance and operation of buildings.	Passive House (also known by its German name, Passivhaus) is a certification scheme for very low energy buildings, first developed in Germany and administered by the non-profit Passive House Institute and implemented in Canada by the Canadian Passive House Institute (CanPHI).	The Living Building Challenge is an international green building certification program and sustainable design framework run by the International Living Future Institute, a US non-profit organization seeking to tackle climate change by pushing for a built urban environment free of fossil fuels.
Certification levels	Certified Silver Gold Platinum	Certified EnerPHit (retrofits only)	Living Building Certification Petal Certification Net Zero Energy Building Certification
Areas of assessment: environmental performance of the building	<ul style="list-style-type: none"> • Energy and atmosphere • Sustainable Sites • Location and Transportation • Materials and resources • Water efficiency • Indoor environmental quality • Innovation in Design • Regional Priority 	<ul style="list-style-type: none"> • Space Heat/Cooling Demand • Building Airtightness • Total Primary Energy Demand 	<ul style="list-style-type: none"> • Place • Water • Energy • Health and Happiness • Materials • Equity • Beauty
Requirements	Prerequisites (independent of level of certification) and credits with associated points. These points are then added together to obtain the LEED level of certification There are several different rating systems within LEED. Each rating system is designed to apply to a specific sector (e.g. New Construction, Major Renovation, Core and Shell Development, Schools-/Retail-/Healthcare New Construction and Major Renovations, Existing Buildings: Operation)	Threshold requirements in three areas: space heat demand, building pressurization test result, and total primary energy demand, calculated per unit of usable floor area (metres square). For building retrofits, EnerPHit certification can be achieved by demonstrating the maximum space heating demand (at a less stringent level than full certification), or by utilizing components certified by the PHI.	The Living Building Challenge is organized into seven performance areas called Petals. Each Petal is further sub-divided into Imperatives, which address specific issues through detailed requirements. All Imperatives assigned to a Typology are mandatory. Living Building Challenge certification requires actual, rather than anticipated, performance demonstrated over twelve consecutive months.
Performance display			

Appendix 2: Green Bond / Green Bond Programme - External Review Form

Section 1. Basic Information

Issuer name:	City of Vancouver
Green Bond ISIN or Issuer Green Bond Framework Name, if applicable: <i>[specify as appropriate]</i>	City of Vancouver Green Bond Framework
Review provider's name:	Sustainalytics
Completion date of this form:	June 28, 2018
Publication date of review publication: <i>[where appropriate, specify if it is an update and add reference to earlier relevant review]</i>	

Section 2. Review overview

SCOPE OF REVIEW

The following may be used or adapted, where appropriate, to summarise the scope of the review.

The review assessed the following elements and confirmed their alignment with the GBPs:

- | | |
|--|--|
| <input checked="" type="checkbox"/> Use of Proceeds | <input checked="" type="checkbox"/> Process for Project Evaluation and Selection |
| <input checked="" type="checkbox"/> Management of Proceeds | <input checked="" type="checkbox"/> Reporting |

ROLE(S) OF REVIEW PROVIDER

- | | |
|---|--|
| <input checked="" type="checkbox"/> Consultancy (incl. 2 nd opinion) | <input type="checkbox"/> Certification |
| <input type="checkbox"/> Verification | <input type="checkbox"/> Rating |
| <input type="checkbox"/> Other <i>(please specify)</i> : | |

Note: In case of multiple reviews / different providers, please provide separate forms for each review.

EXECUTIVE SUMMARY OF REVIEW and/or LINK TO FULL REVIEW *(if applicable)*

Please refer to Executive Summary above.

Section 3. Detailed review

Reviewers are encouraged to provide the information below to the extent possible and use the comment section to explain the scope of their review.

1. USE OF PROCEEDS

Overall comment on section (*if applicable*):

The use of proceeds includes a comprehensive list of eligible categories that are important for low-carbon and climate change resilient growth and all seven categories are aligned with those recognized by the Green Bond Principles. These categories are: renewable energy, energy efficiency, green buildings, clean transportation, pollution prevention and control, sustainable water and wastewater management, and environmentally sustainable management of living natural resources. Sustainalytics considers that the project categories will have clear positive environmental impacts and address the City's environmental needs.

Use of proceeds categories as per GBP:

- | | |
|--|---|
| <input checked="" type="checkbox"/> Renewable energy | <input checked="" type="checkbox"/> Energy efficiency |
| <input checked="" type="checkbox"/> Pollution prevention and control | <input checked="" type="checkbox"/> Environmentally sustainable management of living natural resources and land use |
| <input type="checkbox"/> Terrestrial and aquatic biodiversity conservation | <input checked="" type="checkbox"/> Clean transportation |
| <input checked="" type="checkbox"/> Sustainable water and wastewater management | <input type="checkbox"/> Climate change adaptation |
| <input type="checkbox"/> Eco-efficient and/or circular economy adapted products, production technologies and processes | <input checked="" type="checkbox"/> Green buildings |
| <input type="checkbox"/> Unknown at issuance but currently expected to conform with GBP categories, or other eligible areas not yet stated in GBPs | <input type="checkbox"/> Other (<i>please specify</i>): |

If applicable please specify the environmental taxonomy, if other than GBPs:

2. PROCESS FOR PROJECT EVALUATION AND SELECTION

Overall comment on section (*if applicable*):

The responsibility for project selection and evaluation belongs to the City's Finance, Risk and Supply Chain Management Department, in consultation with other relevant departments such as Engineering Services, Planning, Urban Design, Sustainability and Real Estate Management. Support by a strong governance structure is in line with market practice.

Evaluation and selection

- | | |
|---|---|
| <input checked="" type="checkbox"/> Credentials on the issuer's environmental sustainability objectives | <input checked="" type="checkbox"/> Documented process to determine that projects fit within defined categories |
|---|---|

- | | |
|--|---|
| <input checked="" type="checkbox"/> Defined and transparent criteria for projects eligible for Green Bond proceeds | <input checked="" type="checkbox"/> Documented process to identify and manage potential ESG risks associated with the project |
| <input type="checkbox"/> Summary criteria for project evaluation and selection publicly available | <input type="checkbox"/> Other (<i>please specify</i>): |

Information on Responsibilities and Accountability

- | | |
|--|--|
| <input checked="" type="checkbox"/> Evaluation / Selection criteria subject to external advice or verification | <input type="checkbox"/> In-house assessment |
| <input type="checkbox"/> Other (<i>please specify</i>): | |

3. MANAGEMENT OF PROCEEDS

Overall comment on section (*if applicable*):

The City of Vancouver will deposit and record funds separately which tracks the allocation of funds towards eligible projects. Pending allocation, the proceeds will be held in cash or liquid fixed-income instruments. The City's processes to manage and track proceeds using internal reporting systems are in line with market practice.

Tracking of proceeds:

- | |
|---|
| <input checked="" type="checkbox"/> Green Bond proceeds segregated or tracked by the issuer in an appropriate manner |
| <input checked="" type="checkbox"/> Disclosure of intended types of temporary investment instruments for unallocated proceeds |
| <input type="checkbox"/> Other (<i>please specify</i>): |

Additional disclosure:

- | | |
|---|---|
| <input type="checkbox"/> Allocations to future investments only | <input checked="" type="checkbox"/> Allocations to both existing and future investments |
| <input type="checkbox"/> Allocation to individual disbursements | <input type="checkbox"/> Allocation to a portfolio of disbursements |
| <input checked="" type="checkbox"/> Disclosure of portfolio balance of unallocated proceeds | <input type="checkbox"/> Other (<i>please specify</i>): |

4. REPORTING

Overall comment on section (*if applicable*):

The City of Vancouver has committed to report once a year on the allocation of proceeds, including updates on the eligible projects funded and relevant City's key performance indicators where feasible, aligned with market practice.

Use of proceeds reporting:

- | | |
|--|---|
| <input checked="" type="checkbox"/> Project-by-project | <input type="checkbox"/> On a project portfolio basis |
| <input type="checkbox"/> Linkage to individual bond(s) | <input type="checkbox"/> Other (<i>please specify</i>): |

Information reported:

- | | |
|--|---|
| <input checked="" type="checkbox"/> Allocated amounts | <input checked="" type="checkbox"/> Green Bond financed share of total investment |
| <input checked="" type="checkbox"/> Other (<i>please specify</i>): | |

Frequency:

- | | |
|--|--------------------------------------|
| <input type="checkbox"/> Annual | <input type="checkbox"/> Semi-annual |
| <input checked="" type="checkbox"/> Other (<i>please specify</i>): | |

Impact reporting:

- | | |
|--|--|
| <input type="checkbox"/> Project-by-project | <input checked="" type="checkbox"/> On a project portfolio basis |
| <input type="checkbox"/> Linkage to individual bond(s) | <input type="checkbox"/> Other (<i>please specify</i>): |

Frequency:

- | | |
|---|--------------------------------------|
| <input checked="" type="checkbox"/> Annual | <input type="checkbox"/> Semi-annual |
| <input type="checkbox"/> Other (<i>please specify</i>): | |

Information reported (expected or ex-post):

- | | |
|---|---|
| <input checked="" type="checkbox"/> GHG Emissions / Savings | <input checked="" type="checkbox"/> Energy Savings |
| <input checked="" type="checkbox"/> Decrease in water use | <input checked="" type="checkbox"/> Other ESG indicators (<i>please specify</i>):
Biomethane captured (t CH ₄)
List of third-party environmental certifications received.
Cycling, Walking, and Transit trips (% of modal share)
Bike lanes installed (kms)
Total number of instances of non-compliance to air quality standards
Amount of waste diverted from landfill (tonnes)
Total number of instances of non-compliance to water quality standards
Area of natural assets conserved/protected/restored |

Means of Disclosure

- | | |
|---|---|
| <input type="checkbox"/> Information published in financial report | <input type="checkbox"/> Information published in sustainability report |
| <input type="checkbox"/> Information published in ad hoc documents | <input checked="" type="checkbox"/> Other (please specify): Published on City Website |
| <input type="checkbox"/> Reporting reviewed (if yes, please specify which parts of the reporting are subject to external review): | |

Where appropriate, please specify name and date of publication in the useful links section.

USEFUL LINKS (e.g. to review provider methodology or credentials, to issuer’s documentation, etc.)

SPECIFY OTHER EXTERNAL REVIEWS AVAILABLE, IF APPROPRIATE

Type(s) of Review provided:

- | | |
|---|--|
| <input checked="" type="checkbox"/> Consultancy (incl. 2 nd opinion) | <input type="checkbox"/> Certification |
| <input type="checkbox"/> Verification / Audit | <input type="checkbox"/> Rating |
| <input type="checkbox"/> Other (please specify): | |

Review provider(s):

Date of publication:

ABOUT ROLE(S) OF REVIEW PROVIDERS AS DEFINED BY THE GBP

- i. **Consultant Review:** An issuer can seek advice from consultants and/or institutions with recognized expertise in environmental sustainability or other aspects of the issuance of a Green Bond, such as the establishment/review of an issuer’s Green Bond framework. “Second Party Opinions” may fall into this category.
- ii. **Verification:** An issuer can have its Green Bond, associated Green Bond framework, or underlying assets independently verified by qualified parties, such as auditors. In contrast to certification, verification may focus on alignment with internal standards or claims made by the issuer. Evaluation of the environmentally sustainable features of underlying assets may be termed verification and may reference external criteria.
- iii. **Certification:** An issuer can have its Green Bond or associated Green Bond framework or Use of Proceeds certified against an external green assessment standard. An assessment standard defines criteria, and alignment with such criteria is tested by qualified third parties / certifiers.
- iv. **Rating:** An issuer can have its Green Bond or associated Green Bond framework rated by qualified third parties, such as specialised research providers or rating agencies. Green Bond ratings are separate from an issuer’s ESG rating as they typically apply to individual securities or Green Bond frameworks / programmes.

Disclaimer

© Sustainalytics 2018. All rights reserved. No part of this second-party opinion (the “Opinion”) may be reproduced, transmitted or published in any form or by any means without the prior written permission of Sustainalytics.

The Opinion was drawn up with the aim to explain why the analyzed bond is considered sustainable and responsible. Consequently, this Opinion is for information purposes only and Sustainalytics will not accept any form of liability for the substance of the opinion and/or any liability for damage arising from the use of this Opinion and/or the information provided in it.

As the Opinion is based on information made available by the client, Sustainalytics does not warrant that the information presented in this Opinion is complete, accurate or up to date.

Nothing contained in this Opinion shall be construed as to make a representation or warranty, express or implied, regarding the advisability to invest in or include companies in investable universes and/or portfolios. Furthermore, this Opinion shall in no event be interpreted and construed as an assessment of the economic performance and credit worthiness of the bond, nor to have focused on the effective allocation of the funds' use of proceeds.

The client is fully responsible for certifying and ensuring its commitments' compliance, implementation and monitoring.

Sustainalytics

Sustainalytics is a leading independent ESG and corporate governance research, ratings and analytics firm that support investors around the world with the development and implementation of responsible investment strategies. With 13 offices globally, the firm partners with institutional investors who integrate ESG information and assessments into their investment processes. Spanning 30 countries, the world's leading issuers, from multinational corporations to financial institutions to governments, turn to Sustainalytics for second-party opinions on green and sustainable bond frameworks. Sustainalytics has been certified by the Climate Bonds Standard Board as a verifier organization, and supports various stakeholders in the development and verification of their frameworks. Global Capital named Sustainalytics the “Most Impressive Second Party Opinion Provider in 2017”. In 2018, the firm was recognized as the “Largest External Reviewer” by the Climate Bonds Initiative as well as Environmental Finance. In addition, Sustainalytics received a Special Mention Sustainable Finance Award in 2018 from The Research Institute for Environmental Finance Japan for its contribution to the growth of the Japanese Green Bond Market.

For more information, visit www.sustainalytics.com

Or contact us info@sustainalytics.com

