



# Second-Party Opinion

## Verizon Green Financing Framework

### Evaluation Summary

Sustainalytics is of the opinion that the Verizon Green Financing Framework is credible and impactful and aligns with the four core components of the Green Bond Principles 2021 and the Green Loan Principles 2021. This assessment is based on the following:



**USE OF PROCEEDS** The eligible categories for the use of proceeds – Renewable Energy, Energy Efficiency, Green Buildings, Sustainable Water Management, Biodiversity and Conservation – are aligned with those recognized by both the Green Bond Principles 2021 and the Green Loan Principles 2021. Sustainalytics considers that Verizon’s investments in these eligible categories will lead to positive environmental impacts and advance the UN Sustainable Development Goals (“SDGs”), specifically SDGs 6, 7, 8, 9, 11, & 15.



**PROJECT EVALUATION / SELECTION** Verizon’s Sustainability and Treasury teams will be responsible for determining if potential investments are in conformance with the eligibility criteria under the Framework. Verizon has due diligence processes to manage and mitigate environmental and social risks, which are applicable for all allocations under the Framework. Sustainalytics considers risk management processes to be adequate and the project selection process to be in line with market practice.



**MANAGEMENT OF PROCEEDS** Verizon will track allocations using its internal recording system led by the company’s Treasury team. Pending full allocation, proceeds will be managed in line with its liquidity policy. Verizon has stated its intention to allocate the majority of the net proceeds within three years of issuance. This is in line with market practice.



**REPORTING** Verizon intends to produce a Green Financing Report annually until full allocation. This report will detail the amounts allocated to each category and provide relevant quantitative impact metrics for each category, where feasible. This is in line with market practice.

|                        |                              |
|------------------------|------------------------------|
| <b>Evaluation date</b> | August 31, 2021 <sup>1</sup> |
| <b>Issuer Location</b> | New York, USA                |

#### Report Sections

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<sup>1</sup> This document is an update of a Second-Party Opinion, originally published in February 2019 and revised in September 2020. In August 2021, Verizon engaged Sustainalytics to assess the alignment of its Green Financing Framework. No changes were made to the eligible use of proceeds categories. The scope of Sustainalytics’ update consists of assessing the updated Framework’s alignment with the 2021 Green Bond Principles and 2021 Green Loan Principles as well as confirming that the Framework is aligned to current market practice.

## Introduction

Verizon Communications Inc. (“Verizon”, the “Issuer” or the “Company”) is a U.S.-based holding company that, through its subsidiaries, provides communications, technology, information and entertainment products and services to consumers, businesses and government entities. With a global presence, Verizon offers data, video and voice services and solutions on its networks and platforms that are designed to meet customers’ demand for mobility, reliable network connectivity, security and control.

Verizon has developed the Verizon Green Financing Framework (the “Framework”) under which it intends to issue green bond(s) and/or other debt instruments (each a “Green Financing Instrument”) and use proceeds to finance and/or refinance, in whole or in part, existing and/or future projects that deliver positive environmental impacts within Verizon’s own operations and for the customers it connects.

The Framework defines eligibility criteria in five areas:

1. Renewable Energy
2. Energy Efficiency
3. Green Buildings
4. Sustainable Water Management
5. Biodiversity and Conservation

The Framework builds upon Verizon’s 2019 Green Bond Use of Proceeds Document and 2020 Green Financing Framework.<sup>2</sup> Sustainalytics published Second-Party Opinions on both frameworks.<sup>3,4</sup>

Verizon engaged Sustainalytics to review its Framework dated August 2021 and provide a further updated Second-Party Opinion on the Framework’s alignment with the Green Bond Principles 2021 (GBP)<sup>5</sup> and the Green Loan Principles 2021 (GLP).<sup>6</sup> This Framework will be published in a separate document and eligible green categories are unchanged from the previous document.<sup>7</sup>

### Scope of work and limitations of Sustainalytics’ Second-Party Opinion

Sustainalytics’ Second-Party Opinion reflects Sustainalytics’ independent<sup>8</sup> opinion on the alignment of the reviewed Framework with the current market standards and the extent to which the eligible project categories are credible and impactful.

As part of the Second-Party Opinion, Sustainalytics assessed the following:

- The Framework’s alignment with the Green Bond Principles 2021, as administered by ICMA, and the Green Loan Principles 2021, as administered by LMA, APLMA and LSTA<sup>9</sup>;
- The credibility and anticipated positive impacts of the use of proceeds; and
- The alignment of the issuer’s sustainability strategy and performance and sustainability risk management in relation to the use of proceeds.

For the use of proceeds assessment, Sustainalytics relied on its internal taxonomy, version 1.10.1, which is informed by market practice and Sustainalytics’ expertise as an Environmental, Social, and Governance

<sup>2</sup> Verizon Green Financing Framework 2020, at: <https://www.verizon.com/about/sites/default/files/Green-Financing-Framework-2020.pdf>

<sup>3</sup> Sustainalytics 2019 SPO available at: [https://mstar-sustops-cdn-mainwebsite-s3.s3.amazonaws.com/docs/default-source/spos/verizon-green-bond-second-party-opinion-2019.pdf?sfvrsn=ac0f3e9a\\_3](https://mstar-sustops-cdn-mainwebsite-s3.s3.amazonaws.com/docs/default-source/spos/verizon-green-bond-second-party-opinion-2019.pdf?sfvrsn=ac0f3e9a_3)

<sup>4</sup> Sustainalytics 2020 SPO available at: [https://mstar-sustops-cdn-mainwebsite-s3.s3.amazonaws.com/docs/default-source/spos/verizon-green-financing-framework-second-party-opinion.pdf?sfvrsn=51ba83e5\\_3](https://mstar-sustops-cdn-mainwebsite-s3.s3.amazonaws.com/docs/default-source/spos/verizon-green-financing-framework-second-party-opinion.pdf?sfvrsn=51ba83e5_3)

<sup>5</sup> The Green Bond Principles are administered by the International Capital Market Association and are available at <https://www.icmagroup.org/sustainable-finance/the-principles-guidelines-and-handbooks/green-bond-principles-gbp/>.

<sup>6</sup> The Green Loan Principles are administered by the Loan Market Association, Asia Pacific Loan Market Association and Loan Syndications & Trading Association and are available at: <https://www.lsta.org/content/green-loan-principles/>

<sup>7</sup> The Verizon Green Financing Framework is available on Verizon’s website at: <https://www.verizon.com/about/investors/fixed-income>

<sup>8</sup> When operating multiple lines of business that serve a variety of client types, objective research is a cornerstone of Sustainalytics and ensuring analyst independence is paramount to producing objective, actionable research. Sustainalytics has therefore put in place a robust conflict management framework that specifically addresses the need for analyst independence, consistency of process, structural separation of commercial and research (and engagement) teams, data protection and systems separation. Last but not the least, analyst compensation is not directly tied to specific commercial outcomes. One of Sustainalytics’ hallmarks is integrity, another is transparency.

<sup>9</sup> In addition to the Loan Market Association, the GLP are also administered by the Asia Pacific Loan Market Association and the Loan Syndications & Trading Association

(“ESG”) research provider. As part of this engagement, Sustainalytics held conversations with various members of Verizon’s management team 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 Framework. Verizon representatives have confirmed (1) they understand it is the sole responsibility of Verizon to ensure that the information provided is complete, accurate or up to date; (2) that they have provided Sustainalytics with all relevant information and (3) that any provided material information has been duly disclosed in a timely manner. Sustainalytics also reviewed relevant public documents and non-public information.

This document contains Sustainalytics’ opinion of the Framework and should be read in conjunction with that Framework.

Any update of the present Second-Party Opinion will be conducted according to the agreed engagement conditions between Sustainalytics and Verizon.

Sustainalytics’ Second-Party Opinion, while reflecting on the alignment of the Framework with market standards, is no guarantee of alignment nor warrants any alignment with future versions of relevant market standards. Furthermore, Sustainalytics’ Second-Party Opinion addresses the anticipated impacts of eligible projects expected to be financed with bond and loan proceeds but does not measure the actual impact. The measurement and reporting of the impact achieved through projects financed under the Framework is the responsibility of the Framework owner.

In addition, the Second-Party Opinion opines on the intended allocation of proceeds but does not guarantee the realised allocation of the bond and loan proceeds towards eligible activities.

No information provided by Sustainalytics under the present Second-Party Opinion shall be considered as being a statement, representation, warrant or argument either in favour or against, the truthfulness, reliability or completeness of any facts or statements and related surrounding circumstances that Verizon has made available to Sustainalytics for the purpose of this Second-Party Opinion.

## Sustainalytics’ Opinion

### Section 1: Sustainalytics’ Opinion on the Verizon Green Financing Framework

Sustainalytics is of the opinion that the Verizon Green Financing Framework is credible, impactful and aligns with the four core components of the GBP and GLP. Sustainalytics highlights the following elements of the Framework:

- Use of Proceeds:
  - The five use of proceeds categories – Renewable Energy, Energy Efficiency, Green Buildings, Sustainable Water Management, and Biodiversity and Conservation – are aligned with those recognized by the GBP and GLP.
  - The Framework specifies that eligible Renewable Energy technologies include solar and wind energy.
    - Expenditures may include those in the construction and operation of renewable energy facilities, of which Verizon has been directly involved in the installation of over 20 MW of onsite renewable energy systems and has committed to adding a further 24 MW by 2025.
    - In addition to direct investments in projects, Verizon intends to procure electricity via power purchase agreements (“PPAs”) and virtual PPAs (“VPPAs”).<sup>10</sup> Verizon has confirmed that PPAs and VPPAs will be directly tied to specific renewable energy generation projects, rather than the purchase of “generic” green energy from a utility. Furthermore, the PPAs contemplated will be “long-term” and entered into prior to commercial operations or, in the case of re-powering projects, re-commencement of commercial operations. By selecting long-term agreements, Sustainalytics views this as providing greater assurance of positive impacts and aligned with market practice

<sup>10</sup> A virtual PPA is a contractual arrangement between a generator and an energy buyer in which the renewable power is not “physically” delivered to the off-taker. Generally, the renewable energy generator delivers energy to the grid as “null” power with the off-taking company drawing an equivalent amount of grid power from their local utility. The buyer pays a settlement to the energy producer to make up the difference between the agreed-upon contractual price of the PPA and the wholesale price obtained by the energy producer selling the null power. The associated RECs also accrue to the buyer. As this structure supports the financing of renewable energy projects, Sustainalytics considers it to be equivalent to a typical or physical PPA.

- Within the Energy Efficiency category, Verizon may finance projects related to the design, manufacture and installation of products and technology aimed at reducing energy consumption and greenhouse gas (GHG) emissions. Such projects will be in line with Verizon's publicly stated goals for energy efficiency and will include activities such as the construction of smart city systems, smart building management systems, telecommuting systems and smart grids. By enabling high-speed network connectivity, Verizon's solutions have the potential to support energy savings by end users across industrial sectors. Under this category Verizon may also finance equipment which results in energy savings, including, legacy network technology replacements and upgrades, as well as HVAC and lighting equipment. Sustainalytics is of the opinion that investments in this category will provide net-positive environmental impacts. For further information, refer to Section 3.
  - Sustainalytics also notes that there are limitations to this use of proceeds, related to (i) the energy demands on the network, and (ii) the wide range of end user technologies that it supports.
- The Framework specifies that eligible Green Buildings are those that have received at least one third-party certification at the minimum levels of LEED Gold and/or ENERGY STAR 85. Sustainalytics considers these schemes to be credible and the levels selected to be in line with market practice (See Appendix 1 for an overview of Sustainalytics' assessment).
  - The green buildings eligibility criteria may also include buildings that are carbon net-zero, or upgrades to buildings that are expected to improve energy efficiency by at least 30%. Sustainalytics is of the opinion that these levels of performance are in line with market practice. However, this category permits the Issuer to consider equivalent third-party verified green building certifications other than the aforementioned. Sustainalytics notes that it is market expectation to specify all eligible certification schemes and encourages Issuer to report on any other schemes it intends to include.
  - Additionally, the Framework defines leasing of eligible green buildings, on a capitalized basis, as eligible use of proceeds. While Verizon owns green buildings, the Framework also allows for the inclusion of the certification of green buildings for facilities not owned by Verizon. By signing long-term leases, Verizon is enabling the construction of these assets. In this regard, Verizon has confirmed to Sustainalytics that leasing of buildings includes the operation and management of the buildings. Given this context, Sustainalytics considers that by including capitalized leases in its Framework, Verizon is supporting the overall development of the green building markets, which delivers indirect environmental benefits.
- Under the Sustainable Water Management category, Verizon may finance equipment that improves water efficiency, water conservation or water quality. Such projects can include plumbing fixtures, irrigation systems, systems designed to increase recycled water use, and upgrades to cooling towers. Although no quantitative thresholds for eligibility are specified, Verizon has stated that it intends to include only projects which provide benefits consistent with its publicly stated goals for water management, such as a 15% corporate water savings. Sustainalytics encourages Verizon to ensure that projects which deliver quantifiable environmental benefits be prioritized.
- Biodiversity and Conservation expenditures under the Framework are targeted at a range of projects which may involve upgrades to Verizon's facilities and assets. The Company's aim is to ensure the reforestation and ecological restoration of land to preserve biodiversity and native ecosystems.
- Project Evaluation and Selection:
  - Verizon's Sustainability and Treasury teams will be responsible for determining if potential investments are in conformance with the eligibility criteria of the Framework, and the Issuer intends to allocate an amount equal to the net proceeds from any Green Financing Instrument(s) to these eligible green investments.
  - Evaluation of relevant projects will also be subject to Verizon's existing policies and procedures when assessing perceived social and/or environmental risks associated with such projects. Sustainalytics considers these systems to be adequate and aligned with market practice. For additional details on Verizon's policies and procedures, refer to Section 2.
  - Based on the delegation of responsibility and risk management processes, Sustainalytics considers this evaluation and selection approach to be in line with market practice.

- Management of Proceeds:
  - Verizon intends to allocate an amount equal to the net proceeds of a green bond or other Green Financing Instrument to finance or refinance eligible green investments and will track these allocations using its internal recording system. Pending full allocation, an amount equal to the unallocated net proceeds will be managed by Verizon's Treasury team in accordance with Verizon's normal liquidity activities. Verizon has stated its intention to allocate the majority of the proceeds within three years of issuance.
  - Based on the presence of a system to track allocations and the disclosure of intended temporary management approach, Sustainalytics considers this to be in line with market practice.
- Reporting:
  - Verizon intends, on an annual basis, until an amount equal to the net proceeds is fully allocated, to produce and make available on its website a Green Financing Report, which will provide allocation and impact reporting. The allocation reporting will include the total amounts allocated to each category and the balance of any unallocated proceeds. For each Green Financing Instrument, Verizon intends to disclose the categories of the Framework which are intended to receive allocations.
  - The impact reporting will include quantitative environmental impacts, where feasible. This may include renewable energy capacity commitments (MW), greenhouse gas (GHG) emissions avoided (MTCO<sub>2</sub>e), as well as square footage of green certified buildings, by certification type and level. Additionally, Verizon notes that it intends to continue to develop a methodology to quantify the impacts of its 5G investments.
  - Based on the commitments described above, Sustainalytics considers Verizon's reporting commitments to be in line with market practice.

#### **Alignment with Green Bond Principles 2021 and Green Loan Principles 2021**

Sustainalytics has determined that the Verizon Green Financing Framework aligns to the four core components of the GBP and GLP. For detailed information please refer to Appendix 3: Green Bond/Green Bond Programme External Review Form.

## **Section 2: Sustainability Performance of Verizon Communications Inc.**

### **Contribution of the Framework to Verizon's sustainability strategy and targets**

The principles which underlie Verizon's sustainability approach are laid out in the Company's Credo, which states the Company's commitment to integrity, respect, performance excellence, and accountability.<sup>11</sup> Verizon's approach to sustainability is centered on addressing the key environmental and social issues associated with its core operations.

The Company has performed a materiality assessment to prioritize ESG topics that are relevant to both its business and society, and although Verizon's sustainability strategy seeks to address all material issues identified, some of the most material to the Framework are Access to connectivity; Climate change mitigation; Network, mobile, and data security; and Sustainable product innovation.<sup>12</sup>

As it relates to environmental impact, Verizon has identified a number of key areas on which it tracks its progress and sets targets for progress. This includes emissions and carbon intensity, network resiliency, renewable energy, buildings and data centers, fleet operations, e-waste, paper waste as well as water conservation and reforestation. Sustainalytics notes that these areas align with the use of proceeds categories of the Framework, and highlights the following key points of Verizon's strategy and results:<sup>13</sup>

- Verizon has set quantitative and time-bound targets for its environmental performance. The Company intends to reduce its carbon intensity of overall operations by 50% by 2025 from a 2016 baseline and become carbon neutral (Scope 1 & 2) by 2035. Additionally, the Company has set science-based targets<sup>14</sup> to reduce Scope 1 and 2 emissions by 53% by 2030 over a 2019 baseline and to reduce Scope 3 emissions from its value chain by 40% by 2035 over a 2019 baseline. After meeting their carbon

<sup>11</sup> Verizon, "Verizon Credo," at: <https://www.verizon.com/about/sites/default/files/Verizon-Credo.pdf>

<sup>12</sup> Verizon, "ESG Report 2020," at: [https://www.verizon.com/about/sites/default/files/esg-report/2020/Verizon\\_2020\\_ESG\\_Report.pdf](https://www.verizon.com/about/sites/default/files/esg-report/2020/Verizon_2020_ESG_Report.pdf)

<sup>13</sup> Verizon, "ESG Report 2020," at: [https://www.verizon.com/about/sites/default/files/esg-report/2020/Verizon\\_2020\\_ESG\\_Report.pdf](https://www.verizon.com/about/sites/default/files/esg-report/2020/Verizon_2020_ESG_Report.pdf)

<sup>14</sup> Science-Based Targets, "Lead the Way to a Low-Carbon Future", at: <https://sciencebasedtargets.org/how-it-works>

intensity reduction goal six years early, Verizon has also established a new target to achieve net-zero operational emissions by 2035.<sup>15</sup>

- As of August 31, 2021 Verizon has signed 14 long-term VPPAs totaling nearly 1.9 GW of anticipated renewable energy capacity.<sup>16</sup> Since 2013 Verizon has installed more than 28MW of green power at multiple company locations.<sup>17</sup> Furthermore, the Company has set a target of generating or procuring 50% of total annual energy consumption from renewables by 2025.
- 357 of Verizon's facilities have LEED certification, and 646 properties have received Energy Star certification. Verizon is committed to achieving Energy Star certification at all eligible properties, and in 2020 was recognized with an Energy Star Partner of the Year award for the 8<sup>th</sup> consecutive time.<sup>18</sup>
- In addition to improvements within its own operations, Verizon has already met its 2022 goal for its networks and connected solutions to reduce by over two times, the emissions created by its own operations. The Company reports that in 2020 it enabled the avoidance of 12 million metric tonnes of CO<sub>2</sub>e. Consequently, the Issuer has established a new goal that by 2030 its solutions will help avoid 20 million metric tonnes of CO<sub>2</sub>e annually.<sup>19</sup> The Company achieved a 20% reduction in water usage over the period 2016-2020, and in 2020, 70% of paper purchases contained recycled fiber and 35.6 million pounds of e-waste were recycled or reused.<sup>20</sup>

In addition to its ESG strategy, Verizon is extending its sustainability commitment to cover the Framework's selection of underwriters for each Green Financing instrument. Underwriters are required to meet at least one of the following criteria: (i) have established clear and impactful commitments in support of the U.N. Sustainable Development Goals<sup>21</sup>; and/or (ii) be a diverse-owned firm and/or have a core mission of promoting Diversity, Equity, and Inclusion.

Based on the policy statements and quantitative time-bound targets, Sustainalytics views Verizon's sustainability strategy positively, and is of the opinion that the eligible green projects defined by the Framework will contribute to the Company's overall sustainability approach and that Verizon is well-positioned to issue green bonds.

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

While Sustainalytics recognizes that the use of proceeds from the Framework will be directed towards financing projects that will likely deliver positive environmental benefits, Sustainalytics is aware that such projects create risk of negative environmental and social outcomes. In particular, infrastructure projects such as renewable energy and green buildings may face risks such as air, water, and soil pollution, biodiversity impacts, worker health and safety, and community support, while network solutions such as "smart city" technologies may face risks related to data and privacy as well as supply chain risks.

Verizon has policies and procedures in place which will help mitigate the aforementioned risks, including:

- Identification of key risks in relation to its business activities, including those related to sustainable operations as well as privacy and data use. The Company has implemented compliance processes and programs, which are overseen by the Audit Committee of Verizon's Board of Directors.<sup>22</sup> Within its Taskforce on Climate related Financial Disclosures (TCFD) reporting, Verizon has identified activities which it is taking to mitigate climate risks and pursue a transition to a low-carbon economy.<sup>23</sup>
- A Consumer Advisory Board, composed of independent business-sector and public interest advocates that advise the Company on matters that may impact stakeholders.<sup>24</sup> Verizon has also published a Broadband Commitment which states how Verizon will address important consumer-facing issues such as access and informed choice.<sup>25</sup>

<sup>15</sup> Verizon, "ESG Report 2020", at: [https://www.verizon.com/about/sites/default/files/esg-report/2020/Verizon\\_2020\\_ESG\\_Report.pdf](https://www.verizon.com/about/sites/default/files/esg-report/2020/Verizon_2020_ESG_Report.pdf)

<sup>16</sup> Verizon, "August 2021 Green Bond Impact Report", at <https://verizon.turtl.co/story/green-bond-impact-report/>

<sup>17</sup> Verizon, "ESG Report 2020," at: [https://www.verizon.com/about/sites/default/files/esg-report/2020/Verizon\\_2020\\_ESG\\_Report.pdf](https://www.verizon.com/about/sites/default/files/esg-report/2020/Verizon_2020_ESG_Report.pdf)

<sup>18</sup> *Ibid.*

<sup>19</sup> *Ibid.*

<sup>20</sup> *Ibid.*

<sup>21</sup> Verizon has communicated that it will evaluate this periodically and will consider commitments such as targets towards achieving Net Zero carbon emissions in operations and financing before 2050, and 100% renewable energy usage.

<sup>22</sup> Verizon, "How we Govern", <https://www.verizon.com/about/sites/default/files/esg-report/2019/governance/how-we-govern.html>

<sup>23</sup> Verizon, "Verizon TCFD Report", <https://www.verizon.com/about/sites/default/files/Verizon-TCFD-Report.pdf>

<sup>24</sup> Verizon, "Governance – How we Operate", <https://www.verizon.com/about/sites/default/files/esg-report/2019/governance/how-we-operate.html>

<sup>25</sup> Verizon, "Verizon Broadband Commitment", [https://www.verizon.com/about/sites/default/files/Verizon\\_Broadband\\_Commitment.pdf](https://www.verizon.com/about/sites/default/files/Verizon_Broadband_Commitment.pdf)

- A Code of Conduct, which is considered part of mandatory training for all employees and states that, in addition to complying with all relevant laws and regulations, Verizon employees must maintain an inclusive, fair and healthy work environment, protect the Company's assets and reputation, and maintain integrity and fairness in the marketplace. Channels for inquiries and whistleblowers have been put in place.<sup>26</sup> Furthermore, a specific zero-tolerance anti-corruption policy is in force.<sup>27</sup>
- Several policies which apply to Verizon's suppliers and supply chain, include a Supplier Code of Conduct,<sup>28</sup> a Conflict Mineral Policy,<sup>29</sup> and a Human Rights statement.<sup>30</sup>

Based on the policies and procedures in place, Sustainalytics considers Verizon well-positioned to mitigate the environmental and social risks associated with the projects funded by the net proceeds of any Green Financing Instrument.

### Section 3: Impact of Use of Proceeds

All five use of proceeds categories are aligned with those recognized by the GBP and GLP. Sustainalytics has focused below on two where the impact is specifically relevant for Verizon.

#### The impact of network technologies to deliver global energy efficiency improvements

According to the International Energy Association ("IEA"), in 2021 world electricity demand is anticipated to grow by 3%<sup>31</sup> while global improvements in energy efficiency have been declining since 2015.<sup>32</sup> According to the IEA Bridge Scenario, increasing energy efficiency, for industry, buildings, and transport is a critical action that must be taken to combat GHG emissions, and could contribute to approximately 48% of global emissions reductions by 2030.<sup>33</sup>

Verizon's existing network solutions currently enable customers in numerous sectors to operate with increased energy efficiency; the Company has worked with the Carbon Trust to quantify the benefits accrued by end users, measured in CO<sub>2</sub>e avoided. In 2020, 12 million metric tons of CO<sub>2</sub>e emissions were avoided across six industrial sectors, with the largest benefits accrued through telecommuting, smart meters and demand response units for power grids, and transportation telematics.<sup>34</sup> These avoided emissions are equivalent to 2.75 times Verizon's overall Scope 1 & 2 emissions, indicating that their solutions have resulted in more energy savings than is required to deliver the services.<sup>35</sup>

Verizon's Framework contemplates the inclusion of the "deployment of 5G wireless technologies that allow for real-time response to energy demand". The upgrade to a next-generation 5G network will enable a transition to more network-connected devices, by supporting an ultrafast hyperconnected network that facilitates the rapid flow and analysis of data between connected devices, including personal devices, machinery, buildings, infrastructure and a range of other connectable items, to enable and optimize the delivery of services, including new services. This advancement can lead to energy savings across industries. Examples include, but are not limited to, smart metering, smart lighting, smart parking and other aspects of smart cities such as real-time traffic data for transit systems and first responders, the sharing economy, including bike and electric vehicle sharing, industry automation, and smart logistics. Recent studies have indicated that the carbon emissions abatement that can already be attributed to mobile communication technologies stands at 180 million tons of CO<sub>2</sub>e each year in the United States and Europe, 70% of which is attributable to the machine-to-machine communications<sup>36</sup> that next-generation networks and devices will further enable and enhance. Refer to Appendix 2 for further discussion of the potential applications and GHG abatement mechanisms of various technologies enabled by 5G deployments.

<sup>26</sup> Verizon, "Ethics and Compliance", <https://www.verizon.com/about/sites/default/files/esg-report/2019/governance/ethics-and-compliance.html>

<sup>27</sup> Verizon, "Anti-corruption", <https://www.verizon.com/about/sites/default/files/esg-report/2019/governance/anti-corruption.html>

<sup>28</sup> Verizon, "Supplier Code of Conduct", <https://www.verizon.com/about/our-company/supplier-diversity/supplier-code-of-conduct>

<sup>29</sup> Verizon, "Conflict Mineral Policy", <https://www.verizon.com/about/our-company/company-policies/conflict-mineral>

<sup>30</sup> Verizon, "Human Rights Policy", <https://www.verizon.com/about/our-company/company-policies/human-rights-verizon>

<sup>31</sup> The International Energy Agency (IEA), "Report Extract Outlook 2021", (2020), at: <https://www.iea.org/reports/electricity-market-report-december-2020/outlook-2021>

<sup>32</sup> The International Energy Agency (IEA), "Energy Efficiency 2020", (2020), at: <https://www.iea.org/reports/energy-efficiency-2020>

<sup>33</sup> The International Energy Agency (IEA), "Meeting climate change goals through energy efficiency", available at: <https://www.iea.org/reports/insights-brief-meeting-climate-change-goals-through-energy-efficiency>

<sup>34</sup> Verizon, "ESG Report 2020," at: [https://www.verizon.com/about/sites/default/files/esg-report/2020/Verizon\\_2020\\_ESG\\_Report.pdf](https://www.verizon.com/about/sites/default/files/esg-report/2020/Verizon_2020_ESG_Report.pdf)

<sup>35</sup> Verizon, "ESG Report 2020," at: [https://www.verizon.com/about/sites/default/files/esg-report/2020/Verizon\\_2020\\_ESG\\_Report.pdf](https://www.verizon.com/about/sites/default/files/esg-report/2020/Verizon_2020_ESG_Report.pdf)

<sup>36</sup> GeSI, "GESI Mobile Carbon Impact", at: <https://www.gesi.org/research/gesi-mobile-carbon-impact>

Given the need for energy efficiency across a diversity of industrial sectors and the potential for next generation technologies such as 5G-connected applications to provide energy efficiency improvements and considering Verizon's status among the world leaders in 5G development,<sup>37</sup> Sustainalytics views Verizon's projects in these areas as impactful.

#### Environmental limitations in deployment of 5G technology

Sustainalytics recognizes that 5G technologies as described in Verizon's Framework carry two risks/limitations in terms of impact:

- i. Large telecom networks are energy-intensive to operate, and the deployment of 5G will impose even greater electricity demands. While the overall network emissions from the telecommunications industry may increase as a result of 5G deployment and increased network traffic, the ratio of direct energy savings from mobile technologies to network energy use is currently estimated at 5:1 in Europe and North America.<sup>38</sup> Verizon avoided 2.8 times the emissions generated by their operations in 2020, and is now on track to help avoid 20 million metric tonnes of CO<sub>2e</sub> annually by 2030.<sup>39</sup> Sustainalytics considers that these net-positive ratios are indicative of 5G's potential environmental benefits.
- ii. As 5G enables end users to deploy a wide range of solutions, the technologies have a broad impact, and can drive energy efficiency gains in a variety of industries. This does not exclude the possibility of application in fossil fuel-based industries. Sustainalytics understands that Verizon cannot control the use and application of its network technologies.

Despite these limitations, Sustainalytics is of the opinion that the deployment of 5G will provide, overall, net positive environmental impacts.

#### **Importance of renewable energy to power telecommunications services**

The telecommunications sector is by its very nature energy-intensive; it is estimated that worldwide the sector contributes to approximately 2%-3% of total global energy demand.<sup>40</sup> Within traditional telecom service providers, the largest single energy demand is electricity to run network base stations, with telephone exchanges, core networks, and data centers also making up significant loads.<sup>41</sup> According to the US Department of Energy, the data centers that form the hubs of modern networks consume 10–50 times more energy per unit of floor space, on average, than commercial office buildings, and collectively make up approximately 2% of the country's total electricity consumption. In 2019, global data centers consumed nearly 250 TWh of electrical energy, and this amount is projected to continue to increase to 270 TWh by 2022, even if the ongoing trend toward increasingly efficient equipment continues.<sup>42</sup> In this context, using renewable energy to power these networks will provide significant impact in reducing carbon emissions.

The operation of a wireless wide area network ("WAN") requires broadly distributed telecommunications infrastructure, including towers and base stations, all of which must have consistent access to electricity to ensure connectivity. In this context, it is challenging to match energy loads precisely to renewable energy generation, due to the variable nature of renewables coupled with potential geographic discrepancies between sources and demands. In this context, Sustainalytics recognizes that the use of VPPAs can play an impactful role by supporting the production of clean energy in an amount equivalent to the energy requirements of the network. In the long-term, it is noted that additional innovations, potentially including energy storage, will be required to fully decarbonize the energy required by the telecommunications sector.

#### **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. The Framework advances the following SDG goal(s) and target(s):

<sup>37</sup> The Institute of Electrical and Electronics Engineers (IEEE), "The Race to 5G Era, LTE and Wi-Fi", <https://ieeexplore.ieee.org/stamp/stamp.jsp?arnumber=8485317>

<sup>38</sup> GeSI, "GESI Mobile Carbon Impact", at: <https://www.gesi.org/research/gesi-mobile-carbon-impact>

<sup>39</sup> Verizon, "ESG Report 2020," at: [https://www.verizon.com/about/sites/default/files/esg-report/2020/Verizon\\_2020\\_ESG\\_Report.pdf](https://www.verizon.com/about/sites/default/files/esg-report/2020/Verizon_2020_ESG_Report.pdf)

<sup>40</sup> Environmental + Energy Leader, "Telecoms to Triple Electricity Consumption, Boosting Growth of Distributed Energy Generation", (2021), at: <https://www.environmentalleader.com/2021/02/telecoms-to-triple-electricity-consumption-boosting-growth-of-distributed-energy-generation/>

<sup>41</sup> Lange et al, "Analysis of the energy consumption in telecom operator networks", at: <https://link.springer.com/article/10.1007/s11107-015-0492-4>

<sup>42</sup> The International Energy Agency (IEA), "Data Centres and Data Transmission Networks", at: <https://www.iea.org/reports/data-centres-and-data-transmission-networks>

| Use of Proceeds Category      | SDG  | SDG target   |
|-------------------------------|--|--|
| Renewable Energy              | 7. Affordable and Clean Energy             | 7.2 By 2030, increase substantially the share of renewable energy in the global energy mix   |
| Energy Efficiency             | 9. Industry, Innovation and Infrastructure | 9.4 By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities          |
|                               | 8. Decent Work and Economic Growth         | 8.4 Improve progressively, through 2030, global resource efficiency in consumption and production and endeavour to decouple economic growth from environmental degradation, in accordance with the 10-year framework of programmes on sustainable consumption and production, with developed countries taking the lead |
| Green Buildings               | 11. Sustainable Cities and Communities     | 11.3 By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries  |
| Sustainable Water Management  | 6. Clean Water and Sanitation              | 6.4 By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity  |
| Biodiversity and Conservation | 15. Life on Land                           | 15.1 By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements  |

## Conclusion

Verizon has developed the Verizon Green Financing Framework, under which it may issue green bonds and other Green Financing Instruments. Eligible green investments include renewable energy, energy efficiency, green buildings, sustainable water management, and biodiversity and conservation, all of which will deliver environmental benefits. Sustainalytics highlights in particular Verizon's intention to finance renewable energy VPPAs and its deployment of 5G technologies which will deliver significant energy savings to end users, providing net-positive environmental benefits despite increased loads on Verizon's own network.

The use of proceeds categories specified in the Framework are aligned with those of the Green Bond Principles 2021 and Green Loan Principles 2021; Verizon has described a process by which proceeds will be tracked, allocated, and managed, and commitments have been made for reporting on the allocation of an amount equal to the net proceeds. Furthermore, Sustainalytics believes that the investments funded by any Green Financing Instruments will contribute to the advancement of the UN Sustainable Development Goals, in particular 6, 7, 8, 9, 11, and 15.

Based on the above, Sustainalytics is confident that Verizon is well-positioned to issue Green Financing Instruments should it decide to do so, and that the Verizon Green Financing Framework is robust, transparent, and in alignment with the Green Bond Principles 2021 and Green Loan Principles 2021.

## Appendices

### Appendix 1: Comparison of Green Building Certification Schemes

|                            | LEED  | ENERGY STAR   |
|----------------------------|---|---|
| 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.  | ENERGY STAR is a U.S Environmental Protection Agency voluntary program that provides independently certified energy efficiency ratings for products, homes, buildings, and industrial plants. Certification is given on an annual basis, so a building must maintain its high performance to be certified year to year. |
| Certification levels       | <ul style="list-style-type: none"> <li>• Certified</li> <li>• Silver</li> <li>• Gold</li> <li>• Platinum</li> </ul>   | <ul style="list-style-type: none"> <li>• 1-100 score, 75 is minimum for certification</li> </ul>  |
| Areas of assessment        | <ul style="list-style-type: none"> <li>• Energy and atmosphere</li> <li>• Sustainable Sites</li> <li>• Location and Transportation</li> <li>• Materials and resources</li> <li>• Water efficiency</li> <li>• Indoor environmental quality</li> <li>• Innovation in Design</li> <li>• Regional Priority</li> </ul>   | <ul style="list-style-type: none"> <li>• Energy use</li> </ul>  |
| Requirements               | <p>Minimum requirements independent of level of certification; point-based scoring system weighted by category to determine certification level.</p> <p>The rating system is adjusted to apply to specific sectors, such as: New Construction, Major Renovation, Core and Shell Development, Schools-/Retail-/Healthcare New Construction and Major Renovations, and Existing Buildings: Operation and Maintenance.</p> | 1-100 score based on energy use, as calculated through the Portfolio Manager tool. Raw score is adjusted based on location, operating conditions, and other factors. The numerical score indicates performance better than at least that percentage of similar buildings nationwide.                                    |
| Qualitative Considerations | Widely accepted within the industry, both in North America and internationally, and considered a guarantee of strong performance.   | Accounts only for energy use, not other measures of environmental performance. Is a key component of other green building certification systems.  |
| Performance display        |    |    |

## Appendix 2: Selected 5G-Supported Technologies

5G is the next generation of wide area network (WAN) technology, building upon and replacing contemporary 4G/LTE networks. Compared to current networks, 5G is expected to provide higher data throughput speed, reduced latency, advanced management and operations support systems, high-motion ability, and universal applications support.<sup>43</sup> It is anticipated that 5G, which is expected to be widely deployed within the next several years, will provide the speeds and bandwidth to support vast new networks of connected devices, the Internet of Things (IoT).<sup>44</sup> Some observers have argued that to realize all the potential benefits of large-scale IoT deployments, 5G networks are necessary.<sup>45</sup> In this context, 5G can be seen as supporting further gains from existing network deployments which are already providing environmental benefits, as well as enabling next-generation technologies which are currently unfeasible.

| Technology/<br>Sector           | Benefits of existing<br>network technologies  | Examples of additional<br>benefits provided by 5G   | GHG Abatement<br>Mechanism for 5G   |
|---------------------------------|---|---|---|
| Transportation/<br>Smart Cities | Telematics, optimized routing, GPS location services, dispatching, smart parking meters | Self-driving cars, car-to-vehicle-to-everything (C-V2X) communications, <sup>46</sup> first responder support, improved transit priority.   | Fewer and more efficient vehicle miles driven, improved public transit performance, improved public safety  |
| Power Grids                     | Smart meters  | Additional network grid and end user sensors to provide real-time information and two-way communication. <sup>47</sup>  | More efficient energy use, better integration of renewable electricity  |
| Health Care                     | Remote patient monitoring, electronic health records                                    | High-speed and low latency networks enable robotics-assisted remote surgery and transmission of real-time high-resolution imaging for consultations and examinations. <sup>48</sup> | Less travel by both patients and doctors resulting in fuel savings, improved surgery techniques result in energy savings from shorter procedures    |
| Manufacturing                   | Automation, computerization   | Low latency micro-sensors and factory-scale networks can improve monitoring, control, and data collection for complex industrial processes. <sup>49</sup>                           | More efficient industrial processes result in emissions savings, better quality control results in better environmental performance of end products |

<sup>43</sup> <https://www.networkworld.com/article/3203489/lan-wan/what-is-5g-wireless-networking-benefits-standards-availability-versus-lte.html>

<sup>44</sup> <https://spectrum.ieee.org/tech-talk/computing/networks/5g-taking-stock>

<sup>45</sup> <https://www.networkworld.com/article/3268668/internet-of-things/5g-to-become-the-catalyst-for-innovation-in-iot.html>

<sup>46</sup> C-V2X allows vehicles to communicate with one another as well as with other parts of the road environment such as traffic lights, toll booths, pedestrians, etc. <https://www.technologyreview.com/s/611883/how-5g-connectivity-and-new-technology-could-pave-the-way-for-self-driving-cars/>

<sup>47</sup> These technologies can help grid reliability by adapting instantaneously to spikes or outages, as well as enabling end user energy savings. One study projected 12% household savings from a 5G enabled smart grid. <https://www.engerati.com/transmission-and-distribution/article/communications-networks-technologies/5g-%E2%80%93-driver-next>

<sup>48</sup> <https://www.iotevolutionhealth.com/topics/iotevolutionhealth/articles/436795-how-5g-could-help-transform-health-care.htm>

<sup>49</sup> A case study of the application of 5G technology to manufactured bladed disks (BLISKs), a key component of jet engines, suggested global savings potential of 16 million metric tons of CO<sub>2</sub>e annually. <https://www.ericsson.com/en/trends-and-insights/consumerlab/consumer-insights/reports/5g-business-value-to-industry-blisk><sup>50</sup> Verizon Green Financing Framework 2020, available at: <https://www.verizon.com/about/investors/fixedincome>

## Appendix 3: Green Bond / Green Bond Programme - External Review Form

### Section 1. Basic Information

|  |  |
|--|--|
| <b>Issuer name:</b>  | Verizon Communications Inc.  |
| <b>Green Bond ISIN or Issuer Green Bond Framework Name, if applicable:</b> | Verizon Green Financing Framework  |
| <b>Review provider's name:</b>   | Sustainalytics   |
| <b>Completion date of this form:</b>                                       | August 23, 2021  |
| <b>Publication date of review publication:</b>                             | Update to Verizon Green Financing Framework SPO, published September 2020. <sup>50</sup> |

### 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 GBP:

- |  |  |
|--|--|
| <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 <sup>nd</sup> 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 Evaluation 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.

<sup>50</sup> Verizon Green Financing Framework 2020, available at: <https://www.verizon.com/about/investors/fixedincome>

## 1. USE OF PROCEEDS

Overall comment on section (if applicable):

The eligible categories for the use of proceeds Renewable Energy, Energy Efficiency, Green Buildings, Sustainable Water Management, Biodiversity and Conservation – are aligned with those recognized by both the Green Bond Principles 2021 and the Green Loan Principles 2021. Sustainalytics considers that Verizon’s investments in these eligible categories will lead to positive environmental impacts and advance the UN Sustainable Development Goals (“SDGs”), specifically SDGs 6, 7, 8, 9, 11, & 15.

### Use of proceeds categories as per GBP:

- |   |  |
|---|--|
| <input checked="" type="checkbox"/> Renewable energy  | <input checked="" type="checkbox"/> Energy efficiency  |
| <input type="checkbox"/> Pollution prevention and control   | <input type="checkbox"/> Environmentally sustainable management of living natural resources and land use |
| <input type="checkbox"/> Terrestrial and aquatic biodiversity conservation  | <input 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 GBP | <input checked="" type="checkbox"/> Other (please specify): Biodiversity and Conservation                |

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

## 2. PROCESS FOR PROJECT EVALUATION AND SELECTION

Overall comment on section (if applicable):

Verizon’s Sustainability and Treasury teams will be responsible for determining if potential investments are in conformance with the eligibility criteria under the Framework. Verizon has due diligence processes to manage and mitigate environmental and social risks, which are applicable for all allocations under the Framework. Sustainalytics considers risk management processes to be adequate and the project selection process to be 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 |

- Summary criteria for project evaluation and selection publicly available       Other (*please specify*):

#### Information on Responsibilities and Accountability

- Evaluation / Selection criteria subject to external advice or verification       In-house assessment
- Other (*please specify*):

### 3. MANAGEMENT OF PROCEEDS

Overall comment on section (*if applicable*):

Verizon will track allocations using its internal recording system led by the company's Treasury team. Pending full allocation, proceeds will be managed in line with its liquidity policy. Verizon has stated its intention to allocate majority of the net proceeds within three years of issuance. This is in line with market practice.

#### Tracking of proceeds:

- Green Bond proceeds segregated or tracked by the issuer in an appropriate manner
- Disclosure of intended types of temporary investment instruments for unallocated proceeds
- Other (*please specify*):

#### Additional disclosure:

- Allocations to future investments only       Allocations to both existing and future investments
- Allocation to individual disbursements       Allocation to a portfolio of disbursements
- Disclosure of portfolio balance of unallocated proceeds       Other (*please specify*):

### 4. REPORTING

Overall comment on section (*if applicable*):

Verizon intends to produce a Green Financing Report annually until full allocation. This report will detail the amounts allocated to each category and provide relevant quantitative impact metrics for each category, where feasible. This is in line with market practice.

**Use of proceeds 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> ):        |

**Information reported:**

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

**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> ):        |

**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> ): Renewable energy capacity (MW), GHG emissions reduced/avoided, square footage of green certified buildings, by certification type and level |

**Frequency**

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

**Means of Disclosure**

- |  |   |
|--|---|
| <input type="checkbox"/> Information published in financial report   | <input checked="" type="checkbox"/> Information published in sustainability report                |
| <input type="checkbox"/> Information published in ad hoc documents   | <input checked="" type="checkbox"/> Other ( <i>please specify</i> ): Standalone green bond report |
| <input checked="" 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.)

Green bond reports: <https://verizon.com/about/investors/green-bond-reports>

External review of ESG data: <https://www.verizon.com/about/investors/independent-accountants-review-letter>

**SPECIFY OTHER EXTERNAL REVIEWS AVAILABLE, IF APPROPRIATE**

**Type(s) of Review provided:**

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

**Review provider(s):**

**Date of publication:**

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

- ii. **Second-Party Opinion:** An institution with environmental expertise, that is independent from the issuer may issue a Second-Party Opinion. The institution should be independent from the issuer's adviser for its Green Bond framework, or appropriate procedures, such as information barriers, will have been implemented within the institution to ensure the independence of the Second-Party Opinion. It normally entails an assessment of the alignment with the Green Bond Principles. In particular, it can include an assessment of the issuer's overarching objectives, strategy, policy and/or processes relating to environmental sustainability, and an evaluation of the environmental features of the type of projects intended for the Use of Proceeds.
- iii. **Verification:** An issuer can obtain independent verification against a designated set of criteria, typically pertaining to business processes and/or environmental criteria. Verification may focus on alignment with internal or external standards or claims made by the issuer. Also, evaluation of the environmentally sustainable features of underlying assets may be termed verification and may reference external criteria. Assurance or attestation regarding an issuer's internal tracking method for use of proceeds, allocation of funds from Green Bond proceeds, statement of environmental impact or alignment of reporting with the GBP, may also be termed verification.
- iv. **Certification:** An issuer can have its Green Bond or associated Green Bond framework or Use of Proceeds certified against a recognised external green standard or label. A standard or label defines specific criteria, and alignment with such criteria is normally tested by qualified, accredited third parties, which may verify consistency with the certification criteria.
- v. **Green Bond Scoring/Rating:** An issuer can have its Green Bond, associated Green Bond framework or a key feature such as Use of Proceeds evaluated or assessed by qualified third parties, such as specialised research providers or rating agencies, according to an established scoring/rating methodology. The output may include a focus on environmental performance data, the process relative to the GBP, or another benchmark, such as a 2-degree climate change scenario. Such scoring/rating is distinct from credit ratings, which may nonetheless reflect material environmental risks.

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