

Second-Party Opinion

Seiko Epson Corporation

Green Bond Framework



Evaluation Summary

Sustainalytics is of the opinion that Seiko Epson Corporation (“Seiko Epson” or “the Company”) Green Bond Framework (the “Framework”) is credible and impactful and aligns with the four core components of the Green Bond Principles 2018 (GBP). This assessment is based on the following:



USE OF PROCEEDS The eligible category for the use of proceeds, 1) Eco-efficient and/or circular economy adapted products, production technologies and processes; 2) Pollution prevention and reduction; 3) Sustainable water and wastewater management; and 4) Renewable energy, are aligned with those recognized by the Green Bond Principles. Sustainalytics considers that the eligible projects will lead to positive environmental impacts and advance the UN Sustainable Development Goals 6, 7, 9 and 12.



PROJECT EVALUATION / SELECTION The candidate projects will be selected by the Management and Finance Department upon discussion with Customer's Satisfaction Quality and Environment Planning Division and CSR/CSV Promotion Division based on the eligibility criteria. The selected projects will be reviewed by the Corporate Strategy Council, and the final decisions will be made by the CFO. The Company's evaluation and selection process is aligned with market practice.



MANAGEMENT OF PROCEEDS The allocated and unallocated amounts of proceeds will be tracked and managed quarterly by the Management and Finance Department of the Company, using an internal management system. Unallocated proceeds will be held in cash or cash equivalents. Sustainalytics views the process for the management of proceeds to be aligned with market practice.



REPORTING Seiko Epson intends to publish allocation and impact reporting annually on its website until the bond maturity. Reporting will include the amount of proceeds allocated and unallocated, a brief description of allocated projects, percentage of proceeds allocated to financing and refinancing, and environmental impact indicators for the allocated projects. In addition, Seiko Epson intends to receive a compliance review from Sustainalytics, as an independent external provider. Sustainalytics views Seiko Epson's allocation and impact reporting along with its commitment to receiving a compliance review to be aligned with market best practice.

Evaluation date	5 December 2019
Issuer Location	Nagano, Japan

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Alignment with Japan's Green Bond Guidelines 2017

Sustainalytics is of the opinion that the Framework is in line with the Japan's Green Bond Guidelines 2017. The guidelines communicate what an issuer should do to issue a credible green bond, and also highlight what an issuer is recommended to do. Sustainalytics assessed the alignment between the Framework and the 'requirements of' items outlined in the Japan's Green Bond Guidelines 2017.

Introduction

Seiko Epson Corporation (“Seiko Epson” or “the Company”) is a manufacturer of electronic products that include printers, scanners, projectors, clocks and watches, industrial robots, microdevices, and other items. The Company started overseas production in 1968 in Singapore and now has a worldwide sales, service, production and development network. Sales outside Japan accounted for 77% of consolidated sales in fiscal 2018.

Seiko Epson has developed the Seiko Epson Corporation Green Bond Framework under which it intends to issue green bonds and use the proceeds to finance and/or refinance, eligible green projects that generate positive environmental impact in Japan and abroad. The Framework defines eligibility criteria in the following areas:

1. Eco-efficient and/or circular economy adapted products, production technologies and processes (Capital expenditures and R&D expenditures associated with manufacturing printers and multifunction printers with improved energy efficiency and papermaking systems that makes paper from used office paper.)
2. Pollution prevention and control
3. Sustainable water and wastewater management
4. Renewable Energy

Seiko Epson engaged Sustainalytics to review the Framework, dated November 2019 and provide a second-party opinion on the Framework’s environmental credentials and its alignment with the GBP¹ and Japan’s Green Bond Guidelines 2017. A summary overview of this Framework has been provided in Appendix 1.

As part of this engagement, Sustainalytics held conversations with various members of Seiko Epson’s Management and Finance Department 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. 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.

¹ International Capital Market Association (ICMA), “The Green Bond Principles 2018”, at: <https://www.icmagroup.org/green-social-and-sustainability-bonds/green-bond-principles-gbp/>

Sustainalytics' Opinion

Section 1: Sustainalytics' Opinion on the Seiko Epson Corporation Green Bond Framework

Summary

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

- Use of Proceeds:
 - The eligible categories for the use of proceeds, 1) Eco-efficient and/or circular economy adapted products, production technologies and; 2) Pollution prevention and reduction; 3) Sustainable water and wastewater management; and 4) Renewable energy, are recognized as project categories with positive environmental benefits in GBP. For additional information, please see Section 3 for Sustainalytics' assessment of positive environmental benefits of the use of proceeds.
 - Seiko Epson will allocate the proceeds to capital expenditures and R&D expenditures associated with the manufacture of printers and multifunction printers and components of these products that reduce the consumption of electricity. The Company has committed that these products and components will improve energy efficiency in the range of 75 - 90% compared with products from other companies with similar specifications (The electricity consumption of Epson's high-speed linehead inkjet multifunction printers for offices are approximately 1/8 compared with products from other companies with same specifications, and the figure for Epson's high-capacity ink-tank printers are approximately 1/10. For Epson's commercial and industrial digital textile printers, the production process is shortened to 3 days - 2 weeks which was 1.5 – 2 months compared with analog textile printing). Sustainalytics believes that the energy efficiency outlined in the Framework will have clear environmental benefits and contribute to achieving a low-carbon economy. Furthermore, Seiko Epson plans to allocate the proceeds to R&D activities and manufacturing equipment for a machine that makes new paper from used office paper. Reuse of paper will help the promotion of a recycling-oriented economic system by utilizing recycled resources and thereby reducing the volume of waste material.
 - In the pollution prevention and reduction category, Seiko Epson intends to allocate the proceeds in the operation of its recycling system. The system will collect and recycle used inkjet cartridges as well as printers, projectors and PCs and the materials obtained from these items will be reused for the manufacture of Seiko Epson products.
 - While the proceeds will also be allocated to expenditures for water quality conservation by the treatment and reuse of effluents from Seiko Epson production processes, these expenditures will contribute to the reduction of water pollution.
 - Under the renewable energy category, Seiko Epson intends to allocate the proceeds to purchasing electricity generated from renewable sources. Sustainalytics recognizes that investors generally prefer capital expenditures in renewable energy and there are limitations to the environmental benefits from the use of proceeds. However, considering the Company's business model and its target which aims to reduce greenhouse gas (GHG) emissions associated with its business activities by 19% from FY2017 to FY2025, Sustainalytics views positively that the purchase and advancement of renewable energy will have environmental benefits.
 - Seiko Epson intends to allocate the proceeds to financing and refinancing expenses, and the look-back period for refinancing is set to be within the three-years prior to the issuance date of the green bonds. Sustainalytics believes that Seiko Epson's three-year look-back period is aligned with market practice, as investors generally prefer refinancing for new projects with a look-back period of two to three years.
- Project Evaluation and Selection:
 - The candidate projects for Seiko Epson's use of proceeds will be selected by the Management and Finance Department upon discussion with the Customers' Satisfaction Quality and

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Environment Planning Division and CSR/CSV Promotion Division based on the eligibility criteria, and then examined by the Corporate Strategy Council. Final decisions will be made by the CFO. The evaluation and selection process are aligned with market practice.

- **Management of Proceeds:**
 - The allocated and unallocated amounts of proceeds will be tracked and managed quarterly by the Management and Finance Department of the Company, using an internal management system. Unallocated proceeds will be held in cash or cash equivalents. Sustainalytics views the process for the management of proceeds to be aligned with market practice.
- **Reporting:**
 - Seiko Epson intends to publish annually the allocation of proceeds and the environmental positive impacts on its website until bond maturity, and when necessary in case of material developments. Allocation reporting will include a brief description of allocated projects, the amount of proceeds allocated and unallocated, and the percentage of proceeds allocated to financing and refinancing. Impact reporting will include the environmental performance of finished products (in the case of components, the finished products that use the components), CO₂ emission reduction based on the number of items shipped, the amount of renewable energy purchased and associated CO₂ emission reduction, and the number of research papers.
 - Seiko Epson commits to receive an annual compliance review from Sustainalytics as an independent external provider, to confirm the alignment of use of proceeds and impact reporting with the Framework. Sustainalytics believes that its commitment to obtaining compliance reviews by independent external organizations, in addition to allocation and impact reporting, is in line with market best practice.

Alignment with Green Bond Principles 2018

Sustainalytics has determined that Seiko Epson's Green Bond Framework aligns to the four core components of the GBP. For detailed information please refer to Appendix 2: Green Bond/Green Bond Programme External Review Form.

Alignment with Japan's Green Bond Guidelines 2017

Japan's Green Bond Guidelines 2017 communicate what an issuer should do to issue a credible green bond, and also highlight what an issuer is recommended to do. Sustainalytics assessed the alignment between the Framework and the 'requirements of' items outlined in Japan's Green Bond Guidelines 2017.

ICMA Green Bond Principles and Japan's Green Bond Guidelines, 2017 ²	Alignment with GBP and with Japan's Green Bond Guidelines	Sustainalytics' comments on alignment with Japan's Green Bond Guidelines 2017. ³
1. Use of Proceeds	Yes	The eligible projects as the use of proceeds which Seiko Epson set in the Framework, in the areas of Eco-efficient and/or circular economy adapted products, production technologies and processes, pollution prevention and control, sustainable water and wastewater management, and renewable energy, are recognized as projects with clear environmental benefits in Japan's Green Bond Guidelines. In addition, Seiko Epson explains the measures to mitigate

² Ministry of the Environment, Japan, "Green Bond Guidelines, 2017", at : <https://www.env.go.jp/en/policy/economy/gb/summary2017.pdf>

³ For detailed comments on alignment with ICMA GBP, please see Appendix 2.

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		environmental risk associated with these eligible projects in the Framework and investors have access to this explanation prior to making decisions.
2. Process for Project Evaluation and Selection	Yes	Seiko Epson explains within the Framework, Environmental Vision 2050, the Company's long-term vision, to the achievement of which issuance of green bonds will contribute. In addition, the Framework explains the eligible criteria for use of proceeds as well as the project evaluation and selection process in which the CFO makes the final decisions.
3. Management of Proceeds	Yes	Amount of proceeds allocated and unallocated will be tracked and managed by the Management and Finance Department of the Company quarterly, using an internal management system. Unallocated proceeds will be held in cash or cash equivalents. The Framework explains the abovementioned management of proceeds.
4. Reporting	Yes	Seiko Epson intends to publish annually the allocation of proceeds and the environmental impact on its website until bond maturity, and when necessary in case of material developments. As its impact reporting, Seiko Epson intends to disclose indicators including the environmental performance of finished products (in the case of components, the finished products that use the components), CO ₂ emission reduction based on the number of items shipped, the amount of renewable energy purchased and associated CO ₂ emission reduction, and the number of research papers.

Section 2: Sustainability Strategy of the Issuer

Contribution of framework to issuer's sustainability strategy

Under its management philosophy⁴, Seiko Epson has the goal of becoming an indispensable Company and commits to contributing to the creation of a sustainable society by achieving the goals of its Environmental Vision 2050⁵, a long-term vision. The Company has identified six materiality themes in order to solve social issues through business activities and specified "Achieve Sustainability in a Circular Economy" as the one theme.⁶ At the same time, Seiko Epson also recognizes "Contributing to the environment through products and services", "Effective use of energy and resources", and "Climate change and global warming" as key CSR themes. For these themes, the Company has established targets as follows and is taking actions to achieve these goals.

⁴ Seiko Epson, "Management Philosophy", at: https://global.epson.com/company/epson_way/management/

⁵ Seiko Epson, "Environmental Vision 2050", at: <https://global.epson.com/SR/environment/vision/>

⁶ Seiko Epson, "Key CSR Themes", at: https://global.epson.com/SR/csr_initiative/action_items.html

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Eco-efficient and/or circular economy adapted products, production technologies and processes

In line with the key CSR theme, “Contributing to the environment through products and services”, Seiko Epson has set the target of a 44% reduction by FY2025 in scope 3 (category 1 (purchased goods and services) and category 11 (use of products sold)) in GHG emissions. This target has been approved by the Science Based Targets initiative (SBTi).⁷ To achieve this target, Seiko Epson has implemented the Design for Environment and has been developing products with high energy efficiency. Additionally, as part of the process of the Design for Environment, the Company emphasizes resource conservation, and aims to reduce environmental impact by reducing resource consumption and minimizing waste during product use.

Pollution prevention and reduction

Seiko Epson has a zero emissions program for reducing the amount of waste materials produced by business activities and recycling these materials. All waste materials generated by manufacturing activities and offices are reduced, reused, recycled within business sites, and then sent to processing companies for recycling. In addition, Seiko Epson is working actively to improve the recycling rate of factory wastewater, and to respond to tightened water quality regulations.

Sustainable water resources and wastewater management

Seiko Epson recognizes that water resources has a significant influence on their business activities as these activities highly rely on water resources. Under this recognition, the Company has a fundamental policy of protecting water resources by avoiding pollution and not consuming water more than necessary during its production processes and recycling used water. In addition, while conducting water risk assessments of production sites using the assessment tools of the World Resources Institute (WRI) and the World Wildlife Fund (WWF), the Company identifies high-risk sites and conducts water resources conservation at those sites.⁸

Renewable energy

Seiko Epson has set the goal of reducing GHG emissions from business activities (scopes 1 and 2) by 19% from FY2017 to FY2025. This target has been approved by the SBTi.⁹ To achieve this goal, Seiko Epson has been introducing the use of renewable energy at business sites. The use of renewable energy increased significantly from 0.8% in FY2017 to 11.6% in FY2018 because of long-term sourcing contracts for hydroelectric and other renewable energy and the on-site generation of electricity at business sites outside Japan.

Based on the above, Sustainalytics is of the opinion that Seiko Epson is well positioned to issue green bonds. Furthermore, Sustainalytics is of the opinion that the use of the proceeds outlined in the framework will contribute to the achievement of the environmental goals, policies and programs of Seiko Epson.

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

While Sustainalytics recognizes that the green projects that Seiko Epson will fund from the proceeds will produce environmental benefits, they have potential risk involving the environment and society. The potential risks include noise, vibrations, soil contamination, water pollution, and a negative impact on the safety and health of workers and the ecological system. Moreover, the recycling of waste materials and manufacture of products may pollute the environment and cause bodily harm by increasing the overall environmental impact across the entire life cycle of products or by improperly handling hazardous substances. Seiko Epson mitigates these risk factors by applying the following policies and processes.

- Seiko Epson operates an environmental management system that utilizes ISO14001 international standard for the management of environmental risk, identifies and evaluates potential environmental risk factors, such as a process that does not comply with a numerical environmental standard. The Epson Group has also unified standards across the group for the prevention of environmental pollution to ensure compliance with laws and regulations. For the management of chemicals, a data management system is used for the centralized handling of this information worldwide. The Company continuously implements measures for the reduction of the usage of chemicals and lowering emissions of PRTR (pollutant release and transfer register) substances¹⁰ and volatile organic compounds (VOC).¹¹ To ensure that suppliers do not violate regulations concerning chemicals contained in products, Seiko Epson

⁷ Seiko Epson, “SBTi Approves Epson’s GHG Reduction Targets”, at: https://global.epson.com/newsroom/2018/news_20181130.html

⁸ Seiko Epson, “Preservation of Water Resources”, at: <https://global.epson.com/SR/environment/resources/water.html>

⁹ Seiko Epson, “SBTi Approves Epson’s GHG Reduction Targets”, at: https://global.epson.com/newsroom/2018/news_20181130.html

¹⁰ Ministry of Economy, Trade and Industry, “PRTR System (Japanese only)”, at:

https://www.meti.go.jp/policy/chemical_management/law/prtr/index.html

¹¹ Seiko Epson, “Production”, at: <https://global.epson.com/SR/environment/pollution/production.html>

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asks all suppliers to follow the guidelines in the Epson Group Green Purchasing Standards¹² for Production Materials.

- Seiko Epson established its own system, called the "New Epson Safety & Health Program (NESP)",¹³ which is based on the occupational safety and health management systems (OSHMS) guidelines, and performs a risk assessment involving riskiness and hazardousness. A PDCA cycle is used to monitor performance and continuously improve the safety and health environment.
- Seiko Epson places "Strengthening of supply chain management" as one of the Company's materiality themes, and perform periodic assessments and improvement support of all types of risk, safety management and other items to reduce the risks.¹⁴ In addition, the Company established the "Epson Group Procurement Guidelines",¹⁵ which comply with the Responsible Business Alliance (RBA) Code of Conduct and include requirements concerning labor, the environment, ethics, and safety and health and ask the suppliers to comply with it. Regarding procurement of minerals, Seiko Epson uses tools provided by the Responsible Minerals Initiative (RMI) to examine supply chains as a member of the RMI.¹⁶ Seiko Epson has established goals to be achieved by 2020, "All critical suppliers earn no less than a medium-risk rank" and "Ensure that minerals are sourced only from smelters certified by the RMI's Conflict-Free Smelter (CFS) Program".

Based on the above, Sustainalytics is of the opinion that Seiko Epson is well positioned to manage and mitigate environmental and social risks associated with the green projects.

Section 3: Impact of Use of Proceeds

The four use of proceeds categories described in the Framework are recognized as impactful by the GBP and Japan's Green Bond Guidelines 2017. Sustainalytics explains the environmental impact of the following two use of proceeds categories relevant to Seiko Epson.

Importance of improving energy efficiency of printers and multifunction printers

According to a study by the International Energy Agency (IEA), improvement in energy efficiency is expected to make the largest contribution, approximately 48% on a policy basis, to global GHG emissions reductions towards 2030.¹⁷ In its intended nationally determined contribution (INDC), Japan has committed to cut its GHG emissions to 26% below the FY2013 level by FY2030. To reach this goal, Japan has set the target of cutting its final energy consumption by about 50.3 million kiloliters (crude oil equivalent) during this period which is equivalent to a 35% improvement in energy consumption efficiency.¹⁸ Japan has adopted the Top Runner Program¹⁹ in order to improve the energy efficiency of power-consuming equipment and has set a time-bound target standard value for applicable products. Printers and multifunction printers were added to the coverage of the program in 2013 and the energy consumption efficiency of the industry has been improved.²⁰ However, since electricity consumption by office equipment and lights has been increasing,²¹ and printing devices such as printers and multifunction printers account for about 10% of total electricity consumption in offices,²² further reductions in the energy consumption of these devices are needed.

Seiko Epson plans to allocate the proceeds to manufacturing and R&D expenditures for printers and multifunction printers that improve energy efficiency compared with products from other companies with equivalent specifications. Inkjet printing method adopted by Seiko Epson, do not use heat to fuse toner to

¹² Seiko Epson, "Green Purchasing", at: https://global.epson.com/SR/supply_chain_csr/green_purchasing/

¹³ Seiko Epson, "Basic NESP Policy", at: https://global.epson.com/company/epson_way/principle/nesp_policy.html

¹⁴ Seiko Epson, "Supply Chain Initiatives", at: https://global.epson.com/SR/supply_chain_csr/initiatives/

¹⁵ Seiko Epson, "Procurement Guidelines", at: https://global.epson.com/SR/supply_chain_csr/guideline/

¹⁶ Seiko Epson, "Responsible Sourcing of Minerals", at: https://global.epson.com/SR/supply_chain_csr/conflict_minerals/

¹⁷ IEA, "Meeting climate change goals through energy efficiency", at:

<https://www.iea.org/publications/freepublications/publication/MeetingClimateChangeGoalsEnergyEfficiencyInsightsBrief.pdf>

¹⁸ UNFCCC, "Submission of Japan's Intended Nationally Determined Contribution (INDC)", at:

https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Japan%20First/20150717_Japan's%20INDC.pdf

¹⁹ Agency for Natural Resource and Energy, "Top Runner Program: Developing the World's Best Energy Efficient Appliance and More", at:

https://www.enecho.meti.go.jp/category/saving_and_new/saving/data/toprunner2015e.pdf

²⁰ Printer & MFD Group, "The trend of energy saving standard (Japanese only)", at: <https://mfd.jbmia.or.jp/energy/efforts/trend.html>

²¹ Agency for Natural Resources and Energy, "international energy star program (Japanese only)", at:

https://www.energystar.go.jp/pamph/pdf/energy_star_pamphlet_2016.pdf

²² Seiko Epson, "Business Printers (Japanese only)", at: <https://www.epson.jp/products/bizprinter/smartcharge/ecology/>

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paper. Therefore, it is a printing method that reduces electricity consumption during the printing process in compared to laser printing method. Seiko Epson estimates that its business inkjet printers contributed to reducing the environmental impact by 8,909 t-CO₂e in FY2018.²³ Sustainalytics believes that this use of proceeds will contribute to climate change measures by reducing GHG emissions as a result of reducing energy consumption through the use of the Company's printers and multifunction printers at residents, offices, and within the commercial and industrial sector.

Environmental benefits of efficient resource use due to recycling and reuse

The volume of waste electrical and electronic equipment (E-waste) including printers and personal computers, has been increasing worldwide, and is predicted to increase from 44.7 million tons in 2016 to 52.2 million tons in 2021. Only 20% of this waste was collected and recycled in 2016 and the remainder was incinerated and landfilled.²⁴ For consumables such as ink cartridges, the recycling rate is about 30%.²⁵ Because E-waste and consumables contain metals, rare earth metals, plastic and other materials, the improper disposal of these products will cause environmental and health damage due to air, water and soil contamination, and require effective use of resources through recycling. For waste paper, the global total reuse rate is approximately 60%, and Japan is approximately 65%.²⁶ The use of waste paper not only reduces waste but also leads to the sustainable use of forest resources and the reduction of water and energy consumption, and therefore, it is aimed at further improving the utilization rate.

Seiko Epson conducts a collection and recycling program for its end-of-life products such as printers, projectors, and PCs as well as cartridges around the world, and has collected, in the aggregate, 220,000 tons of used products and 52,000 tons of cartridges in FY2018. Seiko Epson conducts R&D of and manufactures its dry process office papermaking system that makes new paper from used paper at an office or other location and has contributed to the acceleration of the use of used paper at offices which introduce the product.

Based on the above, Sustainalytics is of the opinion that the collection and recycling program of Seiko Epson products and consumables as well as the manufacturing and R&D of dry process papermaking systems have clear environmental benefits while contributing to the efficient use of resources, reduction of the waste material volumes, and prevention of harm to the environment and health.

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
Eco-efficient and/or circular economy adapted products, production technologies and processes	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
Pollution prevention and control	12. Responsible consumption and production	12.5 By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse
Sustainable water and wastewater management	6. Clean water and sanitation	6.3 By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of

²³ Estimate of GHG emissions avoided by third parties: The emissions avoided by replacing laser printers with Epson inkjet printers are calculated based on electricity use (flow base approach). This is different from the actual reduction amount.

²⁴ Baldé, C.P., Forti V., Gray, V., Kuehr, R., Stegmann, P.: "The Global E-waste Monitor – 2017", United Nations University (UNU), International Telecommunication Union (ITU) & International Solid Waste Association (ISWA), Bonn/Geneva/Vienna., at: <https://www.itu.int/en/ITU-D/Climate-Change/Documents/GEM%202017/Global-E-waste%20Monitor%202017%20.pdf>

²⁵ Energycentral "Ink Waste: The Environmental Impact of Printer Cartridges", at: <https://www.energycentral.com/c/ec/ink-waste-environmental-impact-printer-cartridges>

²⁶ Japan Paper Association, "View on the recycle of papers (Japanese only)", at: <https://www.jpa.gr.jp/env/recycle/used-paper/index.html>

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		untreated wastewater and substantially increasing recycling and safe reuse globally
Renewable Energy	7. Affordable and Clean Energy	7.2 By 2030, increase substantially the share of renewable energy in the global energy mix

Conclusion

Seiko Epson intends to issue green bonds under the Framework and use the proceeds to finance and/or refinance the eligible green projects in four eligible categories: 1) Eco-efficient and/or circular economy adapted products, production technologies and processes, 2) Pollution prevention and control; 3) Sustainable water and wastewater management; and 4) Renewable energy. Seiko Epson commits to contributing to the creation of a sustainable society by achieving the goals of its Environmental Vision 2050, a long-term vision, and the targets of Epson 25, a medium-term goal. Sustainalytics believes that the use of proceeds explained in the Framework will contribute to achieving Seiko Epson's sustainability targets as well as to advance the UN Sustainable Development Goals 6, 7, 9 and 12.

Seiko Epson's use of the proceeds is recognized by the GBP and Japan's Green Bond Guidelines 2017 as project categories with clear environmental impact. The project evaluation and selection process and process for the management of the proceeds, as defined in the Framework, are aligned with market practice. Furthermore, the project evaluation and selection and the management of proceeds outlined in the Framework is in line with market practice, and the annual allocation and impact reporting along with its commitment to obtaining a compliance review is in line with market best practice.

Based on the above, Sustainalytics is of the opinion that the Seiko Epson Green Bond Framework is credible, impactful and aligned with the four core components of the GBP 2018 and Japan's Green Bond Guidelines 2017.

Appendices

Appendix 1: Framework Overview

For the purpose of issuing green bonds, Seiko Epson has developed the following framework which addresses the four key core components of the GBP: use of proceeds, project evaluation and selection process, management of proceeds, and reporting, in November 2019. The framework belongs to Seiko Epson.

1. Use of proceeds

The net proceeds of the green bond will be allocated to finance and/or refinance expenses that meet the following eligibility criteria. Seiko Epson has specified a 36-month look back period for the refinancing of existing projects.

Eligibility Category 1 – Eco-efficient and/or circular economy adapted products, production technologies and processes

Use of proceeds :

The following expenses for manufacturing and/or R&D activities for multifunction printers and printers that achieves significant improvement of energy efficiency. (The electricity consumption of high-speed linehead inkjet multifunction printers for offices are approximately 1/8 compared with products of other companies, commercial and industrial printers achieved to shorten the production process to 3 days - 2 weeks which was 1.5 – 2 months for analog printers, and the electricity consumption for ink-tank printers with large capacity are approximately 1/10 compared with products of other companies)

- Cost of new building construction at the Hirooka Office (Building 9), which is used for manufacturing key components for inkjet printers and associated R&D activities (refinancing)
- Cost of new building construction at the Hirooka Office (Innovation Center Building B), which is used for manufacturing large commercial and industrial printing systems and digital textile printing systems and associated R&D activities (new expenditure/refinancing)
- Cost of expansion of factory of a subsidiary in the Philippines that manufactures inkjet printers (refinancing)
- Cost of production equipment and R&D activities for high-speed linehead inkjet multifunction printers for offices (new expenditure/refinancing)
- Cost of production equipment and R&D activities for commercial and industrial printers (new expenditure/refinancing)
- Cost of production equipment and R&D activities for inkjet printers and inkjet printheads, a core component of these printers (new expenditure/refinancing)

Manufacturing and R&D activities for PaperLab and Dry Fiber Technology, a production technology for producing new paper from used ones without using water. (new expenditure/refinancing)

Eligibility Category 2 – Pollution prevention and control

Use of proceeds :

Cost of operating collection and recycling systems worldwide for used printers and cartridges (new expenditure/refinancing)

Eligibility Category 3 – Sustainable water and wastewater management

Use of proceeds :

The following expenses for reducing polluted water, maintaining water quality by using effluents, and managing water sources within the production processes of printers and ink.

- Cost of installation and maintenance of water treatment systems (new expenditure/refinancing)

Eligibility Category 4 – Renewable energy

Use of proceeds :

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The following expenses for increasing the use of renewable energy at business sites in order to achieve the goal of a 19% reduction in greenhouse gas (GHG) emissions by 2025.

- Cost of purchasing electricity generated from renewable energy sources (new expenditure/refinancing)

2. Process for project evaluation and selection

2.1 Application of Eligibility Criteria in Project Selection

Projects will be selected by the Management and Finance Department, upon discussion with the CS Quality and Environment Planning Division and CSR/CSV Promotion Division based on the eligibility criteria. The projects are then examined by the Corporate Strategy Council and final decision will be made by the CFO.

3.2 Environmental Objectives

Based on its management philosophy, Seiko Epson aspires to be an indispensable company. To achieve this goal, Seiko Epson has identified key CSR themes the Company should focus to address and has selected 19 themes including "contributing to the environment through products and services", "effective use of energy and resources", and "climate change and global warming", in order to clarify issues that must be addressed and to work to solving it through its business activities.

Seiko Epson has established the company's long-term vision called Environmental Vision 2050, as well as Epson 25 which defines how the company should be 2025, in order to continue growth while helping solve social issues. Epson 25 contains medium-term targets that were determined by backcasting from the 2050 goals in the company's Environmental Vision 2050. This vision is centered on the commitment to "contribute to a sustainable society by leveraging efficient, compact and precision technologies to reduce the environmental impact of products and services across their life cycles." One aspect of this commitment is improving the environmental performance of products and lowering the environmental impact of manufacturing, transportation, sales and other activities. This commitment also includes the use of Seiko Epson products and services to give customers new ideas for business processes in order to achieve economic progress while reducing the environmental impact. The goal is to contribute to protecting the global environment side by side with customers. Epson 25 is centered on the vision statement of "creating a new connected age of people, things and information with efficient, compact and precision technologies." These efficient, compact and precision technologies are the origin of the technological expertise that Seiko Epson has created since its inception. These technologies are also the DNA of Seiko Epson. The objective is to create value by making all types of products more energy efficient, more compact while retaining the same performance and even more precise.

3.3 Process to Mitigate Environmental and Social Risks

If business activities pollute the environment, there would be enormous losses and negative effects on surrounding residents as well as to regions and countries. Seiko Epson has a single set of pollution prevention standards for the entire group and rigorously implements its environmental risk management policy and compliance with laws and regulations. All units of the Seiko Epson Group engaged in these activities use ISO14001 systems to identify and evaluate risk factors which lead to the failure of numerical standards and complaints and accidents involving the environment. Based on the results, Seiko Epson takes countermeasures and tries continually to reduce the risk.

3. Management of Proceeds

The Management and Finance Department will quarterly track and manage the amount of net proceeds allocated and unallocated as well as orders and investment projects, using an internal management system.

The proceeds will be managed as cash or cash equivalents until decisions are made for the allocation of these proceeds. This method will be stated in the framework, amended bond issue registration document and other documents. Seiko Epson will disclose this information.

4. Reporting

From the time of issuance until the maturity of the bond, Seiko Epson will annually disclose information on the allocation of the proceeds and environmental impacts, and when necessary in the event of material developments. Additionally, Seiko Epson will receive a green bond evaluation review by Sustainalytics

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primarily about the reporting which includes the allocation of proceeds and the disclosure of associated environmental impacts.

4.1 Allocation Reporting

Seiko Epson will report on the allocation of proceeds, and will disclose brief description of allocated projects, the amount of proceeds allocated and unallocated, and the percentage of proceeds allocated to financing and refinancing.

4.2 Impact Reporting

Seiko Epson will provide the following impact reporting regarding positive environmental impacts.

- Environmental performances of products manufactured at the company's business sites and CO₂ emission reduction based on the number of products shipped (t-CO₂)(estimates)
- Purchase volumes of solar and other renewable energy (kWh) and associated CO₂ emission reduction (t-CO₂)
- Research papers and others

5. Compliance Review

Before the first anniversary of the green bond issuance, Seiko Epson will receive a compliance review from Sustainalytics as an external review provider to review the projects financed by Seiko Epson's green bond in order to assess the compliance with the Green Bond Framework. This review will be conducted annually until the full allocation of the net proceeds from Seiko Epson's green bond.

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

Section 1. Basic Information

Issuer name:	Seiko Epson Corporation
Green Bond ISIN or Issuer Green Bond Framework Name, if applicable: <i>[specify as appropriate]</i>	Seiko Epson Corporation Green Bond Framework
Review provider's name:	Sustainalytics
Completion date of this form:	5 December 2019
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 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.

1. USE OF PROCEEDS

Overall comment on section (if applicable):

The eligible category for the use of proceeds, 1) Eco-efficient and/or circular economy adapted products, production technologies and processes; 2) Pollution prevention and reduction; 3) Sustainable water and wastewater management; and 4) Renewable energy, are aligned with those recognized by the Green Bond Principles. Sustainalytics considers that the eligible projects will lead to positive environmental impacts and advance the UN Sustainable Development Goals 6, 7, 9 and 12.

Use of proceeds categories as per GBP:

- | | |
|--|--|
| <input checked="" type="checkbox"/> Renewable energy | <input type="checkbox"/> Energy efficiency |
| <input checked="" 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 checked="" type="checkbox"/> Eco-efficient and/or circular economy adapted products, production technologies and processes | <input 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 (please specify): |

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 candidate projects will be selected by the Management and Finance Department upon discussion with Customer's Satisfaction Quality and Environment Planning Division and CSR/CSV Promotion Division based on the eligibility criteria. The selected projects will be reviewed by the Corporate Strategy Council, and the final decisions will be made by the CFO. The Company's evaluation and selection process is aligned 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 |
|---|---|

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- | | |
|--|--|
| <input checked="" type="checkbox"/> Defined and transparent criteria for projects eligible for Green Bond proceeds | <input 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 allocated and unallocated amounts of proceeds will be tracked and managed quarterly by the Management and Finance Department of the Company, using an internal management system. Unallocated proceeds will be held in cash or cash equivalents. Sustainalytics views the process for the management of proceeds to be aligned 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 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*):

Seiko Epson intends to publish allocation and impact reporting annually on its website until the bond maturity. Reporting will include the amount of proceeds allocated and unallocated, a brief description of allocated

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projects, percentage of proceeds allocated to financing and refinancing, and environmental impact indicators for the allocated projects. In addition, Seiko Epson intends to receive a compliance review from Sustainalytics, as an independent external provider. Sustainalytics views Seiko Epson's allocation and impact reporting along with its commitment to receiving a compliance review to be aligned with market best 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 (please specify): |

Information reported:

- | | |
|--|--|
| <input checked="" type="checkbox"/> Allocated amounts | <input type="checkbox"/> Green Bond financed share of total investment |
| <input checked="" type="checkbox"/> Other (please specify): brief description of allocated projects, and percentage of proceeds allocated to financing and refinancing | |

Frequency:

- | | |
|---|--------------------------------------|
| <input checked="" type="checkbox"/> Annual | <input type="checkbox"/> Semi-annual |
| <input checked="" type="checkbox"/> Other (please specify): in the event of material developments | |

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 (please specify): |

Frequency:

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

Information reported (expected or ex-post):

- | | |
|--|--|
| <input type="checkbox"/> GHG Emissions / Savings | <input type="checkbox"/> Energy Savings |
| <input type="checkbox"/> Decrease in water use | <input type="checkbox"/> Other ESG indicators (please specify): environmental performance of finished products (in the case of components, the finished products that use the components), CO2 emission reduction based on the number of items shipped, the amount of renewable energy purchased and associated CO2 emission reduction, and the number of reports concerning the results of research activities. |

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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): Corporate 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 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 INDEPENDENT REVIEW PROVIDERS AS DEFINED BY THE GBP

- i. 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.
- ii. 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.
- iii. 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.

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- iv. 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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This document is translated from the Japanese language. In case of discrepancies between the Japanese language and translated versions, the Japanese language version shall prevail.

Sustainalytics

Sustainalytics is a leading independent ESG and corporate governance research, ratings and analytics firm that supports 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. In 2015, Global Capital awarded Sustainalytics "Best SRI or Green Bond Research or Ratings Firm" and in 2018 and 2019, named Sustainalytics the "Most Impressive Second Party Opinion Provider". The firm was recognized as the "Largest External Reviewer" by the Climate Bonds Initiative as well as Environmental Finance in 2018, and in 2019 was named the "Largest Approved Verifier for Certified Climate Bonds" by the Climate Bonds Initiative. In addition, Sustainalytics received a Special Mention Sustainable Finance Award in 2018 from The Research Institute for Environmental Finance Japan and the Minister of the Environment Award in the Japan Green Contributor category of the Japan Green Bond Awards in 2019.

For more information, visit www.sustainalytics.com

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