Second-Party Opinion

Mitsubishi Heavy Industries, Ltd. Green Bond Framework

Evaluation Summary

Sustainalytics is of the opinion that the Mitsubishi Heavy Industries, Ltd. (hereinafter "MHI" 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, Renewable Energy/Clean Energy, is aligned with those recognized by the GBP. Sustainalytics considers that the eligible category will lead to positive environmental impacts and advance the UN Sustainable Development Goals, specifically SDG 7 - Affordable and Clean Energy.

PROJECT EVALUATION / SELECTION MHI's business divisions will evaluate and select projects, and the Finance department then confirms that the projects are aligned with the eligibility criteria. Sustainalytics considers the Company's project evaluation and selection process in line with market practice.

MANAGEMENT OF PROCEEDS The Finance department will track the amount of allocated and unallocated green bond proceeds regularly, at least once a year, using the Company's internal management system. Unallocated proceeds will be held in a form of cash or cash equivalents. The Company intends to allocate green bond proceeds immediately after the bonds' issuance. The Company's management of proceeds is in line with market practice.

REPORTING MHI intends to report on the allocation of proceeds and environmental impacts, on its website on an annual basis. Allocation reporting will include the amount of allocated proceeds, amount or share of, allocation schedule for, and method to manage, unallocated proceeds, as well as the overview of projects for which the proceeds were allocated to the extent practicable. Impact reporting will include, the annual amount of power generated (MWh) and the annual amount of CO_2 emissions reduced (tons) by the renewable energy/clean energy facilities funded by the green bond proceeds, as well as the progress in R&D to the extent practicable. The Company is also committed to obtaining annual reviews from an independent reviewer after the issuance of green bonds. Sustainalytics views that MHI's commitment on reporting and annual reviews as aligned with market practice.

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Issuer Location	Tokyo, Japan

Report Sections

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Alignment with Japan's Green Bond Guidelines 2020

Sustainalytics is of the opinion that the Framework is in line with Green Bond Guidelines 2020 developed by the Ministry of the Environment, Japan. The guidelines communicate what an issuer is expected to do to issue a credible green bond. Sustainalytics assessed the alignment between the Framework and the 'should' items outlined in Japan's Green Bond Guidelines 2020.

Introduction

Mitsubishi Heavy Industries, Ltd. is a comprehensive heavy machinery manufacturer headquartered in Tokyo, engaged in engineering, manufacture, sales and services in a wide range of areas, including power generation systems, ships, transportation systems, aircraft, space systems, and defense-related products. Operating in a number of markets worldwide ranging from Japan to Asia, North and Central Americas, South America, Europe, Middle East, and Africa, the Company generates more than half of its revenue overseas.

MHI[1] has developed the Mitsubishi Heavy Industries, Ltd. Green Bond Framework (the "Framework") under which it intends to issue green bonds and use the proceeds to finance and/or refinance projects that provide environmental benefits. The Framework defines eligibility criteria in the following area.

1. Renewable Energy/Clean Energy
   a. Wind power
   b. Hydrogen power
   c. Geothermal power

MHI engaged Sustainalytics to review the Framework, dated September 2020, and provide a Second-Party Opinion on the Framework's environmental credentials and its alignment with the GBP[2] and Japan's Green Bond Guidelines 2020.[3] A summary overview of the Framework has been provided in Appendix 1.

Scope of work and limitations of Sustainalytics Second-Party Opinion

Sustainalytics' Second-Party Opinion reflects Sustainalytics independent[4] opinion on the alignment of the reviewed Framework with the current market standards and the extent to which the eligible categories are credible and impactful.

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

- The Framework's alignment with the GBP and Japan's Green Bond Guidelines 2020;
- The credibility and anticipated positive impacts of the use of proceeds;
- 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 1.6.1, which is informed by market practice and Sustainalytics' expertise as an ESG research provider.

As part of this engagement, Sustainalytics held conversations with various members of MHI's 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. MHI representatives have confirmed (1) they understand it is the sole responsibility of MHI 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 MHI.

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

[1] "MHI" in this document includes the Company's consolidated group companies.
[2] The Green Bond Principles are administered by the International Capital Market Association and are available at https://www.icmagroup.org/green-social-and-sustainability-bonds/green-bond-principles-gbp/.
[3] Ministry of the Environment, Japan, "Green Bond Guidelines, 2020", at: http://www.env.go.jp/policy/guidelines_set_version_with%20cover.pdf
[4] 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.

projects expected to be financed with bond 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 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 MHI has made available to Sustainalytics for the purpose of this Second-Party Opinion.

Sustainalytics' Opinion

Section 1: Sustainalytics' Opinion on the Mitsubishi Heavy Industries, Ltd. Green Bond Framework

Sustainalytics is of the opinion that the Mitsubishi Heavy Industries, Ltd. Green Bond 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:
  - Renewable Energy/Clean Energy, in which MHI intends to use the green bond proceeds, is a category and project with clear environmental benefits as recognized by the GBP. MHI's investments through the green bond will contribute to the development of renewable energy/clean energy in the Japanese and global markets and will promote the energy sector's decarbonization, which is one of the Company's medium- to long-term initiatives. Please refer to Section 3 for Sustainalytics' in-depth assessment of environmental benefits expected from the use of proceeds.
  - For the Renewable Energy/Clean Energy category, MHI intends to allocate the proceeds to R&D for and manufacture of onshore and offshore wind power generation, hydrogen power generation, and geothermal power generation facilities as well as business development, investment and operation of such power plants. Sustainalytics positively views the following elements of the Company's use of proceeds:
    - With regards to the hydrogen power generation, Sustainalytics acknowledges that hydrogen is currently produced mainly from natural gas and other fossil fuels and carbon dioxide is emitted during its production. MHI has committed to Sustainalytics that it will restrict allocation of the proceeds to the production of hydrogen produced from 100% renewable energy and operations of power plants fueled by 100% hydrogen.
    - Additionally, with regards to the allocation of the proceeds to the R&D and manufacturing of hydrogen power generation facilities, the Company limits such allocation to the facilities where 100% hydrogen will be used for power generation.
    - For the geothermal power generation, Sustainalytics acknowledges that, while approximately two thirds of geothermal power plants globally emit 100 g CO_2/kWh or less, there are plants that emit more, up to 1,300 g CO_2/kWh as maximum. However, MHI limits eligible projects for the use of proceeds to the facilities with the direct emission amount of 100 g CO_2/kWh or less.
    - When investing in a renewable energy/clean energy (wind, geothermal, and hydrogen power) business, the Company allocates the proceeds to the pure players who engage exclusively in, or generates at least 90% of their sales from such energy business.
  - MHI also intends to allocate the proceeds to existing projects. For such projects, the Company defines a lookback period of seven years prior to the green bond issuance date within the Framework. When allocating proceeds to Operating Expenses (OPEX), in addition to Capital Expenditure (CAPEX), Sustainalytics acknowledges that market expectation is to limit the allocation of proceeds to expenditures incurred within the last three years.

- Project Evaluation and Selection:
  - MHI's business divisions will evaluate and select projects, and the Finance department will confirm that the projects meet the eligibility criteria. Final decisions will be made by the Chief Financial Officer. Sustainalytics considers the Company's process to evaluate and select projects to be in line with market practice.
- Management of Proceeds:
  - MHI's Finance department is assigned to manage the green bond proceeds and track the amount of allocated and unallocated green bond proceeds regularly, at least once a year, using the Company's internal management system, until the maturity of the green bond. Pending allocation, unallocated funds will be held in cash or cash equivalents. The Company intends to allocate the green bond proceeds immediately after the issuance of the green bond. Sustainalytics considers the Company's management of proceeds to be in line with market practice.
- Reporting:
  - MHI is committed to reporting the allocation of proceeds and environmental impacts on its public website on an annual basis.
  - Allocation reporting will be conducted until the proceeds are fully allocated, on an aggregated basis, including the amount of allocated proceeds, amount or share of, allocation schedule for, and method to manage, unallocated proceeds, as well as, to the extent practicable, the overview of projects with up-to-date progress for which the proceeds were allocated. Impact reporting will be conducted until the maturity of the green bonds, on an aggregated basis, including, to the extent practicable, the annual amount of power generated (MWh) and the annual amount CO_2 reduced (tons) by the renewable energy/clean energy facilities funded by the green bond proceeds, as well as their progress in R&D. Moreover, the Company is committed to providing timely disclosure in the event of significant changes.
  - In addition to the allocation and impact reporting, the Company is committed to obtaining an annual review from an independent reviewer after the issuance. Sustainalytics views that MHI's commitment on reporting and annual reviews as aligned with market practice.

Alignment with Green Bond Principles 2018

Sustainalytics has determined that the Mitsubishi Heavy Industries, Ltd. 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 2020

Sustainalytics is of the opinion that the Framework is in line with Green Bond Guidelines 2020 developed by the Ministry of the Environment, Japan. The guidelines communicate what an issuer is expected to do to issue a credible green bond. Sustainalytics assessed the alignment between the Framework and the 'should' items outlined in Japan's Green Bond Guidelines 2020.

GBP and Japan's Green Bond Guidelines 2020	Alignment with GBP and with Japan's Green Bond Guidelines 2020	Sustainalytics' comments on alignment with Japan's Green Bond Guidelines 2020[5]
1. Use of Proceeds	Yes	MHI defines the projects related to renewable energy/clean energy that have positive environmental impacts as eligible for the use of proceeds. In the Framework, the Company explains to investors that it will use the proceeds for R&D and manufacturing of wind, hydrogen, and geothermal power generation facilities as well as business development, investment and operation of such power plants, and its measures to reduce environmental risks associated with the eligible projects.

[5] For detailed comments on alignment with ICMA GBP, please see Appendix 2.

		Moreover, MHI states in the Framework, that in case of refinancing an asset that requires long term maintenance through the issuance of multiple green bonds, it will disclose the asset's age, and remaining useful life and the amount to be refinanced at the time of the respective green bond issuance.
2. Process for Project Evaluation and Selection	Yes	In the Framework, MHI demonstrates its CSR and environmental policies and goals, which are expected to be achieved through the issuance of green bonds. Furthermore, the Framework defines eligibility criteria in the use of proceeds; and describes that its business divisions evaluate and select projects and that the final decision will be made by Chief Financial Officer after the Finance department confirms that the projects are aligned with eligibility criteria.
3. Management of Proceeds	Yes	The Finance department allocates and manages green bond proceeds and tracks the amount of allocated and unallocated proceeds regularly, at least once a year, until the maturity of the green bonds, using the Company's internal management system. The Company describes in the Framework that it intends to allocate all proceeds immediately after the issuance of the green bond and manage unallocated proceeds in cash or cash equivalents until full allocation.
4. Reporting	Yes	MHI demonstrates in the Framework that it will disclose the allocation status of proceeds and environmental impact of the allocated projects on the Company's website annually. In the allocation reporting, the Company will report on the amount of allocated proceeds, and amount or share of, allocation schedule for, and method to manage, unallocated proceeds, as well as, to the extent practicable, the overview of allocated projects with up-to-date progress, until the proceeds are fully allocated or in a timely manner even after all the proceeds are allocated if there are significant changes. In the impact reporting, the Company will report on, to the extent practicable, the annual amount of power generated (MWh), the annual amount of CO_2 reduced (tons), and progress in R&D by the renewable energy/clean energy facilities funded by the green bond

proceeds, until the maturity of the green bonds.

Section 2: Sustainability Strategy of MHI

Contribution of framework to MHI's sustainability strategy

In line with its corporate principles, MHI sets out a company-wide CSR policy[6] aimed at contributing toward solutions for global scale issues by delivering products and technologies as a diversified manufacturer. MHI is committed to ensuring sustainability through its business activities in accordance with the following policies and goals.

- The Company, in its Medium- and Long-Term Initiatives,[7] has set out to provide solutions that contribute to decarbonization and is committed to supporting the decarbonization of energy through carbon abatement technologies integrated into thermal power generation and the provision of renewable energy solutions in the long-term business strategy for its Energy Systems business.[8] To reduce carbon emissions in thermal power generation, the Company has focused on the use of hydrogen as a fuel for power generation, and in 2018, MHI demonstrated hydrogen co-firing technology at a co-firing rate of 30 vol% in a natural gas-fired gas turbine. MHI is currently engaged in the development of 100% hydrogen mono-fuel combustion technology towards 2025.[9][10] The Company declared its commitment[11] to the development of the technology to contribute to the achievement of a decarbonized society, through the participation in "Challenge Zero,"[12] an initiative led by Japan Business Federation. In the US, MHI participates in the Advanced Clean Energy Storage project, which is designed to generate and store renewable hydrogen, and intends to supply the hydrogen generated there to the hydrogen-fired gas turbine power generation project, for which the Company has been awarded a contract.[13] The Company also offers and operates renewable energy-sourced (wind, geothermal, hydro, and solar) power generation facilities. It places a particular focus on offshore wind power generation and has developed a strategy to strengthen relevant production systems and technical/geographical support to expand business scale.[14]

Based on its Basic Policy on Environmental Matters,[15] MHI is committed to the reduction of environmental loads in all business activities. Under its Long-Term Environmental Target and the Fourth MHI Group Environmental Targets,[16] MHI aims to reduce the unit CO_2 emissions by 16% by FY2030; and the unit CO_2 emissions, unit water consumption, and unit waste generation by 6%, respectively, by FY2020, from the FY2014 level.

Considering the above, Sustainalytics is of the opinion that the Framework is aligned with its sustainability policies, goals, and initiatives, and will contribute to energy decarbonization, a long-term initiative of the Company.

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

While Sustainalytics views that the wind, hydrogen, and geothermal power generation projects, which will be funded by the proceeds from the green bonds issued under the Framework, have the potential to provide clear environmental benefits and contribute to the Company's environmental strategy and global climate change goals, Sustainalytics recognizes that construction and operation of large-scale power generation facilities may be associated with unintended environmental and social risks. Major environmental and social risks include

[6] Mitsubishi Heavy Industries Group, "CSR Framework", at: https://www.mhi.com/csr/management/flame.html
[7] Mitsubishi Heavy Industries Group, "FY2019 Financial Results & Emergency Measures, Strategy Update", at: https://www.mhi.com/finance/library/result/pdf/200511/setsumei.pdf
[8] Mitsubishi Heavy Industries Group, "Power Systems Business Plan", at: https://www.mhi.com/finance/library/business/pdf/ps2019.pdf
[9] Mitsubishi Power, Ltd., "MHPS to Participate in Hydrogen Conversion Project at Natural Gas GTCC Power Plant in the Netherlands-- Will Support Feasibility Study to Reduce Annual CO_2 Output by 1.3 Million Tons per Year", at: https://power.mhi.com/news/20180308.html
[10] Mitsubishi Power, Ltd., "Hydrogen Power Generation Handbook", at: https://power.mhi.com/catalogue/pdf/mhps_hydrogen_en.pdf
[11] Challenge Zero, "Participating Members Mitsubishi Heavy Industries, Ltd.", at: https://www.challenge-zero.jp/en/member/52
[12] Challenge Zero, "Declaration on "Challenge Zero"", at: https://www.challenge-zero.jp/en/declaration/
[13] Mitsubishi Power, Ltd., "GTCC power project using hydrogen from renewable energy sources in Utah, USA Received the first order for an 840MW class hydrogen-fired JAC system for Intermountain Electric Power Company (IPA) (Japanese only)", at: https://power.mhi.com/jp/news/20200312.html
[14] Mitsubishi Heavy Industries Group, "Power Systems Business Plan", at: https://www.mhi.com/finance/library/business/pdf/ps2019.pdf
[15] Mitsubishi Heavy Industries Group, "Environmental Management", at: https://www.mhi.com/csr/environment/management.html
[16] Mitsubishi Heavy Industries Group, "Environmental Management", at: https://www.mhi.com/csr/environment/management.html

occupational safety and health of employees engaged in the manufacturing of power generation facilities, as well as loss of biodiversity, noise, and relationships with neighboring residents associated with the operation of power plants. For the following reasons, Sustainalytics recognizes that MHI is well positioned to mitigate environmental and social risks:

- MHI has developed the "MHI Group Global Code of Conduct"[17] which states that all MHI Group companies should, on a regular basis, monitor company employees and activities for compliance with local laws in the country where they operate, and for observance of the Code of Conduct. According to the Code of Conduct, MHI has in place a policy of managing the mitigation of social and environmental risks associated with the use of the green bond proceeds, and the Company has committed to Sustainalytics that, for the operation of power plants including the case where the company invests in the business, it will confirm that environmental impact assessments as required by local laws and regulations of the relevant country or region, are duly carried out.
- MHI considers health and safety as the top priority for its business operation. It is determined to make continuous improvements and prevent work-related accidents in its power generation equipment manufacturing business, by setting, implementing, and assessing occupational safety goals based on the "MHI Group Health and Safety Policies."[18]
- MHI is committed not only to complying with environmental laws and regulations through its "Basic Policy on Environmental Matters and Action Guidelines,"[19] which govern initiatives in R&D, manufacturing, and other business activities, but also to making continuous improvements to its environmental conservation activities by setting goals and establishing and implementing in-house assessment criteria. The Company is also determined to reduce environmental load by ensuring, for example, pollution prevention, resource saving, energy saving, and waste generation control, in all areas of business activities, including product R&D, design, procurement of raw materials, manufacturing, transportation, consumption, service, and disposal.
- According to its "Basic Policy on Environmental Matters and Action Guidelines" and "MHI Group CSR Action Guidelines,"[20] the Company carries out biodiversity conservation activities at its business locations through, for instance, researches on the conservation endangered species.[21]

Section 3: Impact of Use of Proceeds

Sustainalytics is of the opinion that the use of proceeds related to renewable energy/clean energy, are projects that have the potential to provide environmental benefits. Sustainalytics explains why the project category produces positive environmental impacts in Japan as follows:

Contribution of 100% hydrogen-fired power generation to the realization of low carbon energy

Hydrogen is considered as a clean energy that does not emit CO_2 in its consumption stage and its use is increasing in various areas such as industry, transportation, buildings, and power generation. Hydrogen is produced by reforming fossil fuels such as natural gas, or through the electrolysis of water and other processes. Depending on the method, its production entails the emission of greenhouse gases. However, in hydrogen production by electrolysis using electricity from renewable energy sources or in combination with CO_2 capture and storage (CCS) technology, the CO_2 emission in the production process may be reduced significantly or even to zero.[22]

The Framework specifies that MHI intends to allocate the proceeds to R&D and manufacturing of power generation facilities that are 100% fueled by hydrogen. Hydrogen is expected to contribute to the decarbonization of the power generation industry when it is used as a fuel, as it does not emit CO_2 at the time of combustion irrespective of the source material. When generating 1 kWh electricity by thermal power generation, the amount of direct CO_2 emissions from an average coal-fired power plant and an LNG thermal power plant is 864 g CO_2 and 341 to 476 g CO_2, respectively.[23] On the other hand, a 100% hydrogen-fired power plant emits no CO_2 during the power generation. In the gas turbine power generation industry, there has

[17] Mitsubishi Heavy Industries Group, "MHI Group Code of Conduct", at: https://www.mhi.com/company/aboutmhi/policy/pdf/codeofconduct_en.pdf
[18] Mitsubishi Heavy Industries Group, "Occupational Health and Safety", at: https://www.mhi.com/csr/social/health.html
[19] Mitsubishi Heavy Industries Group, "Basic Policy on Environmental Matters and Action Guidelines", at: https://www.mhi.com/csr/environment/management.html
[20] Mitsubishi Heavy Industries Group, "CSR Action Guidelines", at: https://www.mhi.com/csr/management/flame.html
[21] Mitsubishi Heavy Industries Group, "Biodiversity", at: https://www.mhi.com/csr/environment/biodiversity.html
[22] International Energy Agency (IEA), "The Future of Hydrogen", at: https://www.capenergies.fr/wp-content/uploads/2019/07/the_future_of_hydrogen.pdf
[23] Central Research Institute of Electric Power Industry, "Comprehensive Life Cycle CO_2 Emissions Assessment of Power Generation Technologies in Japan (Japanese only)", at: https://criepi.denken.or.jp/jp/kenkikaku/report/leaflet/Y06.pdf

been progress in the development of hydrogen co-firing technology, and further R&D efforts have been made for the establishment of a 100% hydrogen mono-fuel combustion technology.[24]

Considering the fact that approximately 40% of Japan's CO_2 emissions come from the power generation industry, and that 77% of the country's energy mix is accounted for by fossil fuel-based thermal power generation (including 38% by gas, 32% by coal, and 7% by oil and other fuels),[25] the reduction of CO_2 in thermal power generation, through the promotion of hydrogen power generation, will be an important measure for Japan's long-term decarbonization strategies. Furthermore, in light of its ability to adjust as required the level of power generation (similar to thermal power generation), hydrogen is also expected to play a role in introducing renewable energy in a large scale, as a flexible power source that complements renewable energy sources whose levels of power generation vary depending on the weather conditions.[26] When it formulated the "Basic Hydrogen Strategy"[27] in 2017, the Japanese government showed its intention to establish technologies for the commercialization of hydrogen power generation by around 2030 and expand the share of hydrogen power generation in its energy mix.

Based on the above, Sustainalytics is of the opinion that MHI's R&D and manufacturing of 100% hydrogen-fired power generation facilities, which are intended for the use of the green bond proceeds, will contribute not only to the achievement of the Japanese government's goal of expanding the share of hydrogen power generation, but also to the decarbonization of the power generation industry, through the efforts to develop hydrogen power generation technologies.

Contribution to address climate change by expanding introduction of wind and geothermal power

MHI intends to allocate the proceeds to expenditures associated with R&D and manufacturing of wind and geothermal power generation facilities, as well as businesses development, investment and operation of such power plants. The Japanese government has set targets to reduce GHG emissions by 26% by 2030 compared to 2013 levels[28], and 80% by 2050[29], and aims to develop renewable energy (zero-emission) sources as a primary source of power generation to achieve the reduction.[30] In 2015, the government compiled the "Long-term Energy Supply Demand Outlook,"[31] setting a goal of increasing the share of renewable energy-sourced electricity in the total power generation to 22% to 24% (including 1.7% by wind and 1.0-1.1% by geothermal), two times the 2010 level, by FY2030, and identified the implementation of this energy mix as a key measure to support the achievement of its Nationally Determined Contributions (NDC)[32] under the Paris Agreement. Expanding the deployment of renewable energy sources is therefore essential to achieving Japan's climate goals.

The introduction of renewable energy has proceeded rapidly, and accounted for as much as 16.9% of Japan's total power mix in FY2018.[33] However, the share must be increased further as only about 37% of the FY2030 goals have been achieved for onshore wind and geothermal power generation as of March 2019.[34] Furthermore, in view of the slow implementation of offshore wind power generation, the government enacted the "Act on Promoting the Utilization of Sea Areas for the Development of Marine Renewable Energy Power Generation Facilities" ("Offshore Renewable Energy Act")[35] in March 2019 with the aim of promoting the use of offshore wind power by establishing rules on the utilization of Japan's sea areas.

[24] International Energy Agency (IEA), "The Future of Hydrogen", at: https://www.capenergies.fr/wp-content/uploads/2019/07/the_future_of_hydrogen.pdf
[25] Agency for Natural Resources and Energy, "FY2018 Energy Supply and Demand Report (Final Figures) (Japanese only)", at: https://www.enecho.meti.go.jp/statistics/total_energy/pdf/stte_029.pdf
[26] Hydrogen and Fuel Cell Strategy Council, "The Strategic Road Map for Hydrogen and Fuel Cells", at: https://www.meti.go.jp/english/press/2019/pdf/0312_002b.pdf
[27] Ministerial Council on Renewable Energy, Hydrogen and Related Issues, "Basic Hydrogen Strategy", at: https://www.meti.go.jp/english/press/2017/pdf/1226_003b.pdf
[28] "Submission of Japan's Nationally Determined Contribution (NDC)", at: https://www.env.go.jp/press/files/jp/113675.pdf
[29] Ministry of the Environment, "The Long-term Strategy under the Paris Agreement", at: https://unfccc.int/sites/default/files/resource/The%20Long-term%20Strategy%20under%20the%20Paris%20Agreement.pdf
[30] Ministry of Economy, Trade and Industry, "Basic Energy Plan", at: https://www.meti.go.jp/english/press/2018/pdf/0703_002c.pdf
[31] Ministry of Economy, Trade and Industry, "Long-term Energy Supply and Demand Outlook", at: http://www.meti.go.jp/english/press/2015/pdf/0716_01a.pdf
[32] "Submission of Japan's Nationally Determined Contribution (NDC)", at: https://www.env.go.jp/press/files/jp/113675.pdf
[33] Ministry of Economy, Trade and Industry, "Cabinet Orders concerning the Act of Promoting Utilization of Sea Areas in Development of Power Generation Facilities Using Maritime Renewable Energy Resources Approved", at: https://www.meti.go.jp/english/press/2019/0315_003.html
[34] Agency for Natural Resources and Energy, "FY2018 Energy Supply and Demand Report (Final Figures) (Japanese only)", at: https://www.enecho.meti.go.jp/statistics/total_energy/pdf/stte_029.pdf
[35] Agency for Natural Resources and Energy, "Current State of Renewable Energy in Japan and Overseas and Draft Issues Proposed for the Current Year by the Procurement Price Calculation Committee (Japanese only)", at: https://www.meti.go.jp/shingikai/santeii/pdf/046_01_00.pdf

Based on the above, Sustainalytics is of the opinion that MHI's use of proceeds for R&D, manufacturing, businesses development, investment and operation of wind and geothermal power generation facilities will contribute to the introduction of said power sources, and thereby support the Japanese government's anti-climate change measures and generate positive environmental impacts.

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 goal and target:

Use of Proceeds Category	SDG	SDG target
Renewable Energy/Clean Energy	7. Affordable and Clean Energy	7.2 By 2030, increase substantially the share of renewable energy in the global energy mix

Conclusion

MHI has developed its Green Bond Framework with the intention of using the green bond proceeds to finance and/or refinance its renewable energy/clean energy projects. Sustainalytics is of the opinion that the use of proceeds set forth in this Framework will not only promote the Company's medium- to long-term initiatives and environmental goals but also contribute to the development of renewable energies/clean energies and the decarbonization of the energy sector at both a nationwide and global scale. MHI's use of proceeds will also contribute to the achievement of climate change mitigation measures and energy policies undertaken by the Japanese government as well as to the promotion of SDG 7.

The use of proceeds set forth in the Framework is a category and project with clear environmental benefits, as recognized by the GBP and Japan's Green Bond Guidelines 2020. In its eligible criteria for the use of proceeds, the Framework provides certain thresholds for hydrogen and geothermal power generation in addition to wind power generation. The Framework also outlines a process by which eligible projects are evaluated and selected and proceeds are managed by its Finance department, and commitments have been made for reporting on the allocation status and quantitative environmental impact metrics. Sustainalytics is of the opinion that the Company's policies for each core components are aligned with market practice.

Based on the above, Sustainalytics is of the opinion that the Framework is aligned with the four core components of GBP and Japan's Green Bond Guidelines 2020, and is credible and transparent.

Appendices

Appendix 1: Framework Overview

For the purpose of issuing green bonds, MHI 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 September, 2020. The Framework belongs to MHI.

1. Use of proceeds

The proceeds of the green bond will be allocated towards new or existing businesses and/or projects that relate to the eligible businesses and/or projects described below.

1.1 Eligibility Criteria

Eligible businesses and/or projects:
Renewable energy/clean energy business (wind, hydrogen, and geothermal power generation facilities/businesses)

Eligibility Criteria:
Expenditures for, and refinancing of, the Group's renewable energy/clean energy business (such as R&D funds, business development and operation funds, and working capital) that meet the following criteria:

- Hydrogen power generation businesses and/or projects for 100% hydrogen combustion;
- Geothermal power generation businesses and/or projects that emit less than 100g CO_2/kWh;
- Investments in corporations that are exclusively engaged in the renewable energy/clean energy business or generate at least 90% of their sales from renewable energy/clean energy-related business; and
- The expenditure for the business and/or project was made within 7 years preceding the green bond issuance date.

2. Process for project evaluation and selection

2.1 Application of Eligibility and Exclusionary Criteria in Project Selection

MHI's business divisions select the businesses and/or projects to be funded by green bond proceeds, and the finance department then confirms the compliance with the eligibility criteria, and the CFO will make the final decision.

2.2 Environmental Objectives

The MHI Group Long-Term Environmental Target and the Fourth MHI Group Environmental Targets, which represent the Group's medium-term goals, were established at a meeting of the Environment Committee held in December 2017. The Long-Term Environmental Target is focused on reducing CO_2 by fiscal 2030, the same target year as the Paris Agreement. The Fourth MHI Group Environmental Targets aim for reduction in CO_2 emissions, more efficient water usage, and reduction in waste generation by fiscal 2020. MHI Group will work together to achieve these goals in order to address the problem of climate change.

2.3 Process to Mitigate Environmental and Social Risks

In executing projects, MHI is committed to the mitigation of environmental and social risks according to the eligibility criteria and contributing to the creation of a sustainable society in accordance with the Group's CSR framework.

3. Management of Proceeds

MHI's finance department manages the allocation of the green bond proceeds on a regular basis (at least once a year), until the maturity of the green bond, using an internal management system. After the issuance of a green bond, the proceeds will be allocated entirely and immediately to eligible businesses and/or projects. Pending the allocation to eligible businesses and/or projects, the amount of unallocated proceeds will be held in cash or cash equivalents if the allocation requires a certain period of time.

4. Reporting

MHI will annually report on the allocation of proceeds to eligible businesses and/or projects, management of proceeds, and social impact on its corporate website, or in a timely manner whenever any significant change occurs. The first report will be made public within one year from the green bond issuance.

4.1 Allocation reporting

Until the proceeds are fully allocated, MHI will provide information on the allocation of proceeds to businesses and/or projects that meet the eligibility criteria, on an annual basis.
MHI will report on the following items to the extent practicable.

- Status of allocation to eligible businesses and/or projects, overview with up-to-date progress
- Amount or share of unallocated proceeds, allocation schedule, and the method to manage unallocated proceeds

Moreover, in case of refinancing an asset that requires long-term maintenance through the issuance of multiple green bonds, MHI will disclose the asset's age and remaining useful life and the amount to be refinanced as at the time of the bond issuance.

4.2 Impact reporting

Until the maturity of the green bond, MHI will provide, to the extent practicable, the following and other indices that indicate positive environmental impacts:

Annual power generation (MWh) and annual CO_2 reduction (tons) of renewable energy/clean energy facilities related to the funded business, and information on their progress in R&D (such as the outline of projects participated in)

5. Annual Review

The Company plans to allocate the proceeds immediately from the green bond issuance date, and will receive a review promptly from Sustainalytics as an external review provider to assess whether the eligible businesses and/or projects are in conformity with its Framework.

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

Section 1. Basic Information

Issuer name:	Mitsubishi Heavy Industries, Ltd.
Green Bond ISIN or Issuer Green Bond Framework Name, if applicable:	Mitsubishi Heavy Industries, Ltd. Green Bond Framework
Review provider's name:	Sustainalytics
Completion date of this form:	October 23, 2020
Publication date of review publication:	

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:

☒	Use of Proceeds	☒	Process for Project Evaluation and Selection
☒	Management of Proceeds	☒	Reporting

ROLE(S) OF REVIEW PROVIDER

☒	Consultancy (incl. 2nd opinion)	☐	Certification
☐	Verification	☐	Rating
☐	Other *(please specify)*:		

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 Renewable Energy/Clean Energy, is aligned with those recognized by the GBP. Sustainalytics considers that the eligible category will lead to positive environmental impacts and advance the UN Sustainable Development Goals, specifically SDG 7 - Affordable and Clean Energy.

Use of proceeds categories as per GBP:

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

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

2. PROCESS FOR PROJECT EVALUATION AND SELECTION

Overall comment on section (if applicable):

MHI's business divisions will evaluate and select projects, and the Finance department then confirms that the projects are aligned with the eligibility criteria. Sustainalytics considers the Company's project evaluation and selection process in line with market practice.

Evaluation and selection

☒ Credentials on the issuer's environmental sustainability objectives	☒ Documented process to determine that projects fit within defined categories
☒ Defined and transparent criteria for projects eligible for Green Bond proceeds	☒ 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)*:

The Finance department will track the amount of allocated and unallocated green bond proceeds regularly, at least once a year, using the Company's internal management system. Unallocated proceeds will be held in a form of cash or cash equivalents. The Company intends to allocate green bond proceeds immediately after the bonds' issuance. The Company's management of proceeds 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):

MHI intends to report on the allocation of proceeds and environmental impacts, on its website on an annual basis. Allocation reporting will include the amount of allocated proceeds, amount or share of, allocation schedule for, and method to manage, unallocated proceeds, as well as the overview of projects for which the proceeds were allocated to the extent practicable. Impact reporting will include, the annual amount of power generated (MWh) and the annual amount of CO_2 emissions reduced (tons) by the renewable energy/clean energy facilities funded by the green bond proceeds, as well as the progress in R&D to the extent practicable. The Company is also committed to obtaining annual reviews from an independent reviewer after the issuance of green bonds. Sustainalytics views that MHI's commitment on reporting and annual reviews as aligned with market practice.

Use of proceeds reporting:

☐ Project-by-project
☒ On a project portfolio basis
☐ Linkage to individual bond(s)
☐ Other *(please specify):*

Information reported:

☒ Allocated amounts
☐ Green Bond financed share of total investment
☒ Other *(please specify):* Overview of funded projects with up-to-date progress, amount and share of, allocation schedule for, and the method to manage, unallocated proceeds.

Frequency:

☒ Annual
☐ Semi-annual
☒ Other (please specify): Whenever any significant change occurs

Impact reporting:

☐ Project-by-project
☒ On a project portfolio basis
☐ Linkage to individual bond(s)
☐ Other (please specify):

Information reported (expected or ex-post):

☒ GHG Emissions / Savings
☐ Energy Savings
☐ Decrease in water use
☒ Other ESG indicators (please specify): To the extent practicable, the annual amount of power generated (MWh) by the renewable energy/clean energy facilities funded by the green bond proceeds and progress in R&D.

Frequency

☒ Annual
☐ Semi-annual
☒ Other (please specify): Whenever any significant change occurs

Means of Disclosure

☐ Information published in financial report
☐ Information published in sustainability report
☐ Information published in ad hoc documents
☒ Other (please specify):

The Company's website

☐ 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:

☐ Consultancy (incl. 2nd opinion)
☐ Certification
☐ Verification / Audit
☐ Rating
☐ 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.

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.

Disclaimer

About Sustainalytics, a Morningstar Company

Sustainalytics, a Morningstar Company, is a leading ESG research, ratings and data firm that supports investors around the world with the development and implementation of responsible investment strategies. The firm works with hundreds of the world's leading asset managers and pension funds who incorporate ESG and corporate governance information and assessments into their investment processes. The world's foremost issuers, from multinational corporations to financial institutions to governments, also rely on Sustainalytics for credible second-party opinions on green, social and sustainable bond frameworks. In 2020, Climate Bonds Initiative named Sustainalytics the "Largest Approved Verifier for Certified Climate Bonds" for the third consecutive year. The firm was also recognized by Environmental Finance as the "Largest External Reviewer" in 2020 for the second consecutive year. For more information, visit www.sustainalytics.com.

Named
2015: Best SRI or Green Bond Research or Rating Firm
2017, 2018, 2019: Most Impressive Second Opinion Provider