

# Hitachi Zosen Corporation

## Green Waste-to-Energy Project

### DNV GL GREEN BOND PERIODIC REVIEW(#2)



Sep. 2020

DNV GL Business Assurance Japan K.K.

Issue Log	Description
August 31 <sup>st</sup> , 2018	Second Party Opinion – Green bond eligibility pre-issue assessment report
August 21 <sup>st</sup> , 2019	Green Bond Periodic Review
Sep 30 <sup>th</sup> , 2020 (This Issue)	Green Bond Periodic Review (#2) -Use of Proceeds: Proceeds from the green bond (total 5.0b-JPY) has been fully allocated to the eligible green project, as scheduled. -Project Progress: Project of Kyoto City Government, commercial operation stated on Sep. 2019 Project Kikuchi, Environmental Preservation Association, under construction as scheduled. , commercial operation is planned from Mar. 2021 -Environmental Contribution: CO <sub>2</sub> emission reduction result will be published in the Hitz website in timely manner or annual report on FY2021

## Scope and Objectives

On September 21, 2018, Hitachi Zosen Corporation (hereinafter “Hitz” or “Issuer”) issued Hitachi Zosen Green Bonds (hereinafter “BOND”). The issuance value for the BOND is five billion Japanese yen. DNV GL Business Assurance Japan Co., Ltd. (hereinafter referred to as “DNV GL”) conducted a green bond eligibility assessment by using the Green Bond Guidelines (the Ministry of the Environment (Japan), 2017) and the Green Bond Principles 2018 (hereinafter “GBP”).

Hitz has used the proceeds of the BOND to finance the nominated projects and assets falling under the following categories:

### “Pollution prevention and control” (energy/emission-efficient Waste to Energy)

- Table-1 shows the nominated projects. The nominated projects are two Waste to Energy plants. One has been installed in a facility of Kyoto City Government (Fushimi-ku, Kyoto City), and the other has been installed in a facility of Kikuchi Environmental Preservation Association (Koshi City, Kumamoto Prefecture).
- The project of Kyoto City Government has started commercial operation on September 2019. Photo-1 shows the external view of the project.
- The project of Kikuchi Environmental Preservation Association, the civil engineering work has been started in February 2019 as scheduled. There is no change in the plan of completion date (estimated in March 2021), as of July 2020. Photo-2 shows the external view of the project.
- As of March 2020, green bond proceeds 5.0 billion Japanese yen has been fully allocated.

Table-1 Nominated projects and assets (energy/emission-efficient waste-to-energy plant) \*details are described in schedule-1

Project (Site)	Rated power generation output	Completion time
Kyoto City Government (Fushimi-ku, Kyoto City)	14.0MW	Sep 2019 (Started commercial operation)
Kikuchi Environmental Preservation Association (Koshi City, Kumamoto Prefecture)	2.8MW	Mar 2021 (as scheduled)

DNV GL has been commissioned by Hitz to provide the initial and periodic review of the Hitz’s eligibility of the BOND. Our criteria and information covered to achieve this is described under ‘Work Undertaken’ shown below. The periodic review was based on information provided by Hitz as of 20 July 2020. We do not provide any independent assurance or other type of audit activities.

In this paper, no assurance is provided regarding the financial performance of the Issuer, the value of any investments in the BOND, or the long term environmental benefits arising from the nominated projects. Our objective of these reviews has been to provide an assessment that the usage of the proceeds of the BOND has met the criteria established on the basis set out below.

The scope of DNV GL`s opinion is limited to the latest version of the Green Bond Principles 2018 (GBP, ICMA) and Green Bond Guidelines (GBGLs, the Ministry of Environment, Japan).



Photo-1 Project of Kyoto City Government  
 (commercial operation started from Sep. 2019)  
<https://www.city.kyoto.lg.jp/kankyo/page/0000270765.html>



Photo-1 Project of Kikuchi Environmental Preservation Association  
 (commercial operation will start from Mar. 2021)

## Responsibilities of the Management of Hitachi Zosen and DNV GL

The management of Hitz has provided the information and data used by DNV GL during the delivery of this review. Our statement represents an independent opinion and is intended to inform Hitz management and other interested stakeholders in the BOND as to whether the established criteria have been met, based on the information provided to us. In our work we have relied on the information and the facts presented to us by Hitz. DNV GL is not responsible for any aspect of the nominated assets referred to in this opinion and cannot be held liable if estimates, findings, opinions, or conclusions are incorrect. Thus, DNV GL shall not be held liable if any of the information or data provided by Hitz used as a basis for this assessment were not correct or complete.

## Basis of DNV GL's opinion

DNV GL adapted our Green Bond Principles<sup>\*1</sup>, Green Bond guideline<sup>\*2</sup>, and Climate Bond Standard (for reference at pre-issuance stage)<sup>\*3</sup> assessment methodologies, which incorporate the requirements of the GBP, to create a Hitz specific Green Bond Eligibility Assessment Protocol (henceforth referred to as "Protocol") for each project. Our Protocol includes a set of suitable criteria that can be used to underpin DNV GL's opinion. The overarching principle behind the criteria is that a green bond should "enable capital-raising and investment for new and existing projects with environmental benefits".

As per our Protocol, the criteria against which the BOND has been reviewed are grouped under the four Principles:

- **Principle One: Use of Proceeds.** The Use of Proceeds criteria are guided by the requirement that an issuer of a green bond must use the funds raised to finance eligible activities. The eligible activities should produce clear environmental benefits.
- **Principle Two: Process for Project Evaluation and Selection.** The Project Evaluation and Selection criteria are guided by the requirements that an issuer of a green bond should outline the process it follows when determining eligibility of an investment using Green Bond proceeds, and outline any impact objectives it will consider.
- **Principle Three: Management of Proceeds.** The Management of Proceeds criteria are guided by the requirements that a green bond should be tracked within the issuing organization, that separate portfolios should be created when necessary and that a declaration of how unallocated funds will be handled should be made.
- **Principle Four: Reporting.** The Reporting criteria are guided by the recommendation that at least Sustainability Reporting to the bond investors should be made of the use of bond proceeds and that quantitative and/or qualitative performance indicators should be used, where feasible.

\*1:Green bond principle (June 2018, International Capital Market Association)

\*2:Green Bond Guidelines, 2017 (March 2017, the Ministry of the Environment (Japan))

\*3:Climate Bond Standard | version 2.1 (Climate Bonds Initiative)

## Work undertaken

Our work constituted a high level review of the available information, based on the understanding that this information was provided to us by Hitz in good faith. We have not performed an audit or other tests to check the veracity of the information provided to us. The work undertaken to form our opinion includes initial assessment and periodic assessment.

### Initial Assessment:

- Creation of a Hitz -specific Protocol, adapted to the purpose of the BOND, as described above and in Schedule-2 to this Assessment.
  - Assessment of documentary supporting documents provided by Hitz on the BOND and supplemented assessment by a high-level desktop research. These checks refer to current assessment best practices and standards methodology;
  - Discussions with Hitz, and review of relevant documentation;
  - Documentation of findings against each element of the criteria.

### Periodic Assessment:

- Evaluation of the supporting documents provided by Hitz and related to the BOND issuance, high level desktop research, document reviews, and interviews with key personnel of the Issuer. These checks refer to best practices in current assessment and standard methodologies;
- Discussions with Hitz management and review of relevant documentation;
- Field survey and inspection, if required;
- Review of the nominated projects and assets as described in Schedule 2;
- Documentation of findings in detail.

Our opinion as detailed below is a summary of these findings.



## Findings and DNV GL's opinion

DNV GL's findings are listed below:

### 1. Use of Proceed

Hitz has reported usage of the proceeds of the BOND to finance the projects and assets, which meet the green bond criteria below:

#### Eligibility Criteria of Green Bond: Pollution prevention and control

The proceeds are allocated to the construction and related work/business of "the energy/emission-efficient waste to energy" (GBP 2018), which are proposed in Table-1 and Schedule-1 (two projects; Kyoto City Government and Kikuchi Environmental Preservation Association). The proceeds from the green bond total 5.0 billion Japanese yen, has been fully allocated to the two projects at the end of fiscal year 2019 (March 2020).

DNV GL reviewed the eligibility of the nominated projects and assets to meet the criteria for the project categories above.

- Project ; Kyoto City Government	: 4.366 b-JPY
- Project ; Kikuchi Environmental Preservation Association:	0.634 b-JPY
<u>total</u>	<u>: 5.0 b-JPY</u>

Kyoto City Government

(Fushimi-ku, Kyoto City)

Kikuchi Environmental Preservation Association (Koshi City, Kumamoto Prefecture)

### 2. Project Evaluation and Selection Process

The proceeds of the BOND have been allocated solely to finance the projects and assets as defined in Schedule-1. DNV GL has reviewed supporting documents that demonstrates that Hitz regularly assesses opportunities for improvement and devises and initiatives action plans initiatives to mitigate negative environmental and social impacts from its operations.

### 3. Management of Proceeds

DNV GL has reviewed and confirmed supporting documents showing how Hitz has traced/managed the proceeds from the BOND, from the time of issuance to the time of disbursement. DNV GL has confirmed that Hitz manages the remaining amount of the BOND in cash or cash equivalents and Hitz periodically reviews its outstanding balance. As of the end of fiscal year 2019 (end of March 2020),

the proceeds from the green bond total 5.0 billion Japanese yen, has been fully allocated to the two projects at the end of fiscal year 2019 (March 2020).

As stated above, DNV GL provides no assurance regarding the financial performance of the Issuer, the value of any investments in the BOND, or the effects of the transaction.

#### 4. Reporting

DNV GL has confirmed that Hitz reports and discloses the specific information required by the Green Bond periodically in its company website or Integrated Report. These include description of the project and its progress, allocation and management of the proceeds invested, as well as the associated qualitative and quantitative environmental impacts.

As for the progress of the nominated projects, the project for Kyoto City, scheduled for completion in March 2019, has been postponed to September 2019 as a result of coordination with the customer, and as of July 2019. Finally, the project has completed as scheduled and started commercial operation from Sep. 2019. For Kikuchi Environmental Preservation Association, construction work progresses as original schedule and will start commercial operation from Mar. 2021. The environmental contribution, CO<sub>2</sub> emission reduction will be calculated and be published in the Hitz website in timely manner or annual report on FY2021.

As for evaluation of CO<sub>2</sub> emission, DNV GL has confirmed that Hitz plans to evaluate/calculate in the appropriate method based on the operation performance of each project (such as operation records). DNV GL will conduct periodic ongoing reviews and state that quantified CO<sub>2</sub> emissions reductions to be reported in those reviews, as required.



Through the reviews, DNV GL confirmed that Green Waste-to-Energy Project of Hitz has been planned and executed following the Green Bond criteria (Green Bond Guidelines, Climate Bond Standard, and GBP).

On the basis of the information provided by Hitz and the work undertaken, it is DNV GL's opinion that the BOND meets the criteria established in the Protocol and that it is aligned with the stated definition or purpose of green bonds within the Green Bond Principles and Green Bond Guidelines, which is to "enable capital-raising and investment for new and existing projects with environmental benefits".

DNV GL Business Assurance Japan K.K.

30<sup>th</sup> Sep, 2020



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#### About DNV GL

Driven by our purpose of safeguarding life, property and the environment, DNV GL enables organisations to advance the safety and sustainability of their business. Combining leading technical and operational expertise, risk methodology and in-depth industry knowledge, we empower our customers' decisions and actions with trust and confidence. We continuously invest in research and collaborative innovation to provide customers and society with operational and technological foresight. With our origins stretching back to 1864, our reach today is global. Operating in more than 100 countries, our 16,000 professionals are dedicated to helping customers make the world safer, smarter and greener.

### 1. Schedule-1 General Description of the Nominated Project

Ref.	Nominated Project	GBP category	GBP sub category	Funded Amount	Remarks
01	Waste to Energy (Kyoto-city, Kyoto)	Pollution prevention and control	energy/emission-efficient waste to energy waste to energy	Full green bond proceeds has been allocated to the nominated project as of Mar. 2020, as scheduled	14.0MW, general waste Commercial operation(started) : Sep.2019 Funded amount (as of Mar.2020): 4.366 Billion JPY.
02	Waste to Energy (Kikuchi, Kumamoto)	Pollution prevention and control	energy/emission-efficient waste to energy waste to energy		2.8MW, general waste Commercial operation (planned): Mar.2021 Funded amount (as of Mar.2020): 0.634 Billion JPY.

**2. Schedule-2 Green Bond Eligibility Assessment Protocol**

Hitz Green Bond Framework and Amendment to Shelf Registration Statement has been published for explanation to investor

**(1) Use of proceeds**

Ref.	Criteria	Requirements	Work Undertaken	DNV GL Findings
1a	Type of bond	The bond must fall in one of the following categories, as defined by the Green Bond Principles: <ul style="list-style-type: none"> <li>• Green Use of Proceeds Bond</li> <li>• Green Use of Proceeds Revenue Bond</li> <li>• Green Project Bond</li> <li>• Green Securitized Bond</li> </ul>	Documents reviewed: <ul style="list-style-type: none"> <li>- Hitz Green Bond Framework</li> <li>- Amendment to Shelf Registration Statement</li> </ul> Discussions with Hitz management	The reviewed evidence confirms that the BOND falls in the category: Green Use of Proceeds Bond.
1b	Green Project Categories	The cornerstone of a Green Bond is the utilization of the proceeds of the bond which should be appropriately described in the legal documentation for the security.	Documents reviewed: <ul style="list-style-type: none"> <li>- Hitz Green Bond Framework</li> <li>- Amendment to Shelf Registration Statement</li> <li>- Project documents (including asset specifications)</li> </ul> Discussions with Hitz management	As identified by the purpose of the BOND is to use the proceeds to finance for projects falling under the following categories has been fully allocated: "Pollution prevention and control" (energy/emission-efficient waste to energy) <ul style="list-style-type: none"> <li>- Kyoto City (Kyoto)</li> <li>- Kikuchi Environmental Preservation Association(Kumamoto)</li> </ul> DNV GL's assessment concluded that these projects are within the energy/emission-efficient waste to energy category under the Green Bond Principles and they present a low risk of CO <sub>2</sub> emissions and analyse negative effect in quantitative and qualitative terms. Above information is

Ref.	Criteria	Requirements	Work Undertaken	DNV GL Findings
				included in legal documents such as Amendment to Shelf Registration Statement. DNV GL confirms that 1b requirement is satisfied.
1c	Environmental benefits	All designated Green Project categories should provide clear environmentally sustainable benefits, which, where feasible, will be quantified or assessed by the issuer.	Documents reviewed: <ul style="list-style-type: none"> <li>- Hitz Green Bond Framework</li> <li>- Project documents (including asset specifications)</li> <li>- CO<sub>2</sub> mitigation evaluation sheet</li> </ul> Discussions with Hitz management	DNV GL notes that Waste to Energy project can present risks of land use and ecology system through construction and operation. DNV GL reviewed Hitz’s provided document and confirmed that Hitz already identified the environmental risk and addressed appropriate countermeasure. Hitz has clearly demonstrated these projects will contribute benefit for environment such as CO <sub>2</sub> emission reduction. DNV GL confirms that 1c requirement is satisfied.
1d	Refinancing share	In the event that a proportion of the proceeds may be used for refinancing, it is recommended that issuers provide an estimate of the share of financing vs. re-financing, and where appropriate, also clarify which investments or project portfolios may be refinanced.	Documents reviewed: <ul style="list-style-type: none"> <li>- Hitz Green Bond Framework</li> </ul> Discussions with Hitz management	Refinance is not applied for these projects.

**(2) Process for Project Selection and Evaluation**

Ref.	Criteria	Requirements	Work Undertaken	DNV GL Findings
2a	Investment-decision process	<p>The issuer of Green Bond should outline the decision-making process it follows to determine the eligibility of projects using Green Bond proceeds. This includes, without limitation:</p> <ul style="list-style-type: none"> <li>• A process to determine how the projects fit within the eligible Green Projects categories identified in the Green Bond Principles;</li> <li>• The criteria making the projects eligible for using the Green Bond proceeds; and</li> <li>• The environmental sustainability objectives</li> </ul>	<p>Documents reviewed:</p> <ul style="list-style-type: none"> <li>- Hitz Green Bond Framework</li> </ul> <p>Discussions with Hitz management.</p>	<p>As per Hitz Green Bond Frame work, the Issuer has set out the following criteria for project selection.</p> <p>In Green Bond, Hitz has decided eligible project as follows, considering "eligible Green Project" means alignment with Hitz's environmental basic policy and the compliance with GBP 2018.</p> <ul style="list-style-type: none"> <li>- Waste to Energy plant(Pollution prevention and control)</li> </ul> <p>DNV GL has confirmed these nominated projects and assets is discussed within the related departments and responsible manages of Hitz.</p> <p>DNV GL confirms that 2a requirement is satisfied through interview, discussion and document review.</p>
2b	Issuer's environmental and social and governance framework	<p>In addition to information disclosed by an issuer on its Green Bond process, criteria and assurances, Green Bond investors may also take into consideration the quality of the issuer's overall framework and performance regarding environmental sustainability.</p>	<p>Documents reviewed:</p> <ul style="list-style-type: none"> <li>- Hitz Green Bond Framework</li> <li>- Hitz environmental policy and Hitz SDGs promotion policy</li> </ul> <p>Discussions with Hitz management</p>	<p>Through interviews with Hitz and reviews of documents provided by Hitz, DNV GL has confirmed that Hitz works to realize a sustainable society through business activities based on Hitz's environmental basic policy, Hitz SDGs promotion policy and " Hitz 2030 Vision " formulated in 2017. Hitz has published an integrated report that includes the status of sustainability activities described above.</p> <p><a href="https://www.hitachizosen.co.jp/csr/sdgs.html">https://www.hitachizosen.co.jp/csr/sdgs.html</a>  <a href="https://www.hitachizosen.co.jp/ir/data/annual.html">https://www.hitachizosen.co.jp/ir/data/annual.html</a></p> <p>DNV GL confirmed that Hitz's environmental activities contributed to a sustainable society through Green Projects.</p>

**(3) Management of proceeds**

Ref.	Criteria	Requirements	Work Undertaken	DNV GL Findings
3a	Tracking procedure-1	The net proceeds of Green Bonds should be credited to a sub-account, moved to a sub- portfolio or otherwise tracked by the issuer in an appropriate manner and attested to by a formal internal process that will be linked to the issuer’s lending and investment operations for Green Projects.	<p>Documents reviewed:</p> <ul style="list-style-type: none"> <li>- Hitz Green Bond Framework</li> <li>- Amendment to Shelf Registration Statement</li> <li>- Hitz’s internal protocol (e.g. accounting protocol, document control procedure)</li> <li>- Status of appropriation of green bond funds</li> <li>- Full list of funding allocation of project for Kyoto City and Kikuchi Environmental Preservation Association</li> </ul> <p>Discussions with Hitz management</p>	<p>DNV GL reviewed documents and interviewed and confirmed that Hitz traced the proceeds of the BOND, from the time of issuance to the time of disbursement appropriately and the full amount of the proceeds was managed by Hitz’s financial department.</p> <p>DNV GL confirmed Hitz managed and tracked the outstanding balance of the proceeds of the BOND with its internal process. DNV GL confirms that 3a requirement is satisfied.</p>
3b	Tracking procedure-2	So long as the Green Bonds are outstanding, the balance of the tracked proceeds should be periodically reduced by amounts matching eligible green investments or loan disbursements made during that period.	<p>Documents reviewed:</p> <ul style="list-style-type: none"> <li>- Hitz Green Bond Framework</li> <li>- Hitz’s internal protocol (e.g. accounting protocol)</li> <li>- Status of appropriation of green bond funds</li> <li>- Full list of funding allocation of project for Kyoto City and</li> </ul>	<p>DNV GL reviewed documents and interviewed and confirmed that Hitz traced at the proceeds of the BOND, from the time of issuance to the time of disbursement, and reduced the net balance of proceeds by amounts in line with the projects and assets as schedule. The proceeds from the green bond total 5.0 b-JPY has been fully allocated to the eligible project by Mar. 2020. No outstanding is appeared. DNV GL confirms that 3b requirement is satisfied.</p>

Ref.	Criteria	Requirements	Work Undertaken	DNV GL Findings
			<p>Kikuchi Environmental Preservation Association Discussions with Hitz management</p>	
3c	Temporary holdings	Pending such investments or disbursements to eligible Green Projects, the issuer should make known to investors the intended types of temporary investment instruments for the balance of unallocated proceeds.	<p>Documents reviewed:</p> <ul style="list-style-type: none"> <li>- Hitz Green Bond Framework</li> <li>- Amendment to Shelf Registration Statement</li> <li>- Full list of funding allocation of project for Kyoto City and Kikuchi Environmental Preservation Association</li> </ul> <p>Discussions with Hitz management</p>	<p>The net proceeds of the BOND were managed by financial department. The net proceeds of the BOND has been fully allocated. DNV GL confirmed that outstanding was held and managed as cash or cash equivalent until disbursement to the nominated projects and assets as per Hitz Green Bond Framework. DNV GL confirms that 3c requirement is satisfied.</p>



(4) Reporting

Ref.	Criteria	Requirements	Work Undertaken	DNV GL Findings
4a	Periodical reporting	<p>In addition to reporting on the use of proceeds and the temporary investment of unallocated proceeds, issuers should provide at least annually a list of projects to which Green Bond proceeds have been allocated including</p> <ul style="list-style-type: none"> <li>- when possible with regards to confidentiality and/or competitive considerations</li> <li>- a brief description of the projects and the amounts disbursed, as well as the expected environmentally sustainable impact.</li> </ul>	<p>Documents reviewed:</p> <ul style="list-style-type: none"> <li>- Hitz Green Bond Framework</li> <li>- CO<sub>2</sub> mitigation evaluation sheet</li> <li>- Draft website disclosure of "Hitz Green Bonds"</li> </ul> <p>Discussions with Hitz management</p>	<p>Hitz is publishing the annual report including a dedicated section on the Green Bond in its Annual Report and website. This will include description of the project and value of the proceeds invested, as well as the associated qualitative and quantitative environmental impacts. Hitz plans to report on the total amount of CO<sub>2</sub> emission reduction evaluation based on the operation records (e.g. amount of electricity generation per year, MWh/y). (Note that the commercial operation is not started yet.)</p> <p>DNV GL concluded that 4a requirement is satisfied.</p>