

Hitz Green Bond Framework

1. Introduction

1.1 Overview of the Company

Hitachi Zosen Corporation (hereafter “Hitz” or “the Issuer”) is a plant engineering company rooted in Osaka Tekkosho (Osaka Iron Works) and founded in 1881 by E.H. Hunter. Hitz has globally expanded and developed its business in the field of “Environment”, “Machinery” and “Infrastructure” in order to provide the values for society through engineering and manufacturing technologies developed by shipbuilding technology (since the shipbuilding business division was divested in 2002). Its head office is located at Osaka in Japan. The global enterprise activity is executed with 10,377 employees and 114 consolidated subsidiaries in 19 countries (as of March 31, 2018).

1.2 Environmental Strategy of the Company

1.2.1 Corporate philosophy

Our corporate philosophy is "We create value useful to society with technology and sincerity to contribute to a prosperous future."

As a part of management action to realize this corporate philosophy and to put our endeavors into concrete form, we have established our ISO14001 management system, and set up our "Environment Policy" to carry out our business activities.

- (1) Regarding our company products, service and business activity, we try to reduce environmental burden and contribute to protecting the regional environment.
- (2) Observe statutory and regulatory requirements, agreements and other requirements applicable to the organization and comply with our company's self-imposed controls.
- (3) Set environmental objectives and annual environmental targets (an Environment Management Program), and make a continuous commitment to reduce burden on the environment and prevent environmental pollution.
- (4) Review regularly, make continuing improvements and maintain operations of the Environment Management System effectively.

1.2.2 Policy on Environmental Issues

Hitz established its “Basic Environmental Protection Policies”¹ for its employees in

¹ "Environmental Data book 2017" (Hitachi Zosen Corporation)

1992, and also established its environmental management organization which is responsible for environmental issues in order to work actively for resolution of environmental issues. Hitz's technologies and trust established in Japan can provide solutions for social issues aligned with social communities globally.

In 1993, we have also established the "Hitachi Zosen Environmental Protection Promotion Plan", built on the prior policies with a concrete agenda based on the Action Guidelines. It adds breadth to our previous regional environmental protection activities, with additional focus on areas like ozone layer protection, global warming prevention, waste reduction and recycling.

FY2016 Environmental Results

- 18.4% CO2 emission reduction (compared with fiscal year 2005)
- 17.4% waste reduction (compared with fiscal year 2000)
- 66.4% landfill waste reduction (compared with fiscal year 2000)

1.2.3 Long-term Vision

Creating a recycling society that reduces environmental burden by reclaiming and reusing resources is vital for sustainable development for future generations, which can make everyone's everyday life safer and more secure while maintaining humankind's standards of living. With this consensus, we present long term vision that commits to providing solutions for global environmental issues, shortage of foodstuffs and water and energy, by reinforcing the areas in the environmental domains of energy and water as a core business..

1.2.4 Environmental Management Framework

To promote the above environmental activities, we established the Environmental Protection Promotion Committee in 1992. The committee has formulated the basic policies and priority implementation items for environmental protection at global and regional levels, and has carried out the necessary measures. Every factory and subsidiary has its own Business Site Environmental Preservation Committee which promotes environmental preservation measures in line with these basic policies. Also, periodical environmental audits are conducted by an external reviewer in ISO 14001 acquiring offices at all the sites.

1.3 Hitz Green Bond

Hitz will issue the Green Bond to provide Hitz’s environmental solution technology and service (facilities and management). We believe that delivering service consistent with our environmental policy in all the business phases from funding to providing technology and services to customers will achieve Hitz’s mission. We made this framework for the Green Bond to ensure consistency with the International Capital Market Association ("ICMA")'s 2018 Green Bond Principals ("GBP"), Ministry of the Environment's Green Bond Guidelines 2017, and Climate Bond Initiative's Climate Bond Standard version 2.1.

2. Green Bond Framework

For the issuance of the Green Bond, this framework is designed in align with the GBP's four core components which are: Use of Proceeds, Process for Project Evaluation and Selection, Management of Proceeds, and Reporting. This framework will be released on our web page, and components of framework will also be revealed on legal documentations for the relevant Green Bond issuance or disclosed information to the stakeholders.

2.1 Use of Proceeds

All the net proceeds from the issuance of the Green Bond will be allocated to finance and/or refinance of expense for development, construction, installation and operation of projects which meet the following eligibility criteria. The Board of Directors, Hitz's supreme decision-making body on operational execution, will give approval to the Green Bond issuance.

Eligibility Criteria

- **Waste-to-Energy Facility:** It is a facility which can utilize waste as an important resource of energy by burning it hygienically. Waste itself is undesirable material though at the same time is unavoidable during human activities. However, it can be an important energy resource, as well. Hitz can simultaneously realize ‘energy generation’ and waste treatment of useless, not reusable and not recyclable wastes. Hitz’s activities provide effective solutions for global future energy problems. Hitz will allocate the Green Bond proceeds to projects whose benefit of CO2 emission reduction exceeds the negative effect.
- **Refinanced existing projects** are limited to be finalized/taken into operation within 24 months preceding to the date of issuance of the Green Bond.

For the process of Waste-to-Energy plants, please refer to Reference 1.

- When implementing the projects, we work for mitigating environmental negative effects, and make sure the proceeds from the Green Bond will be used exclusively for the projects which went through the process of fulfilling social accountability of explanation about potential negative effect of projects as below.
 - Projects implemented the countermeasures for preventing serious environmental impacts by conducting environmental surveys, forecast and evaluation according to the procedure required by the "Environmental Impact Assessment Law"² by project proponents.
 - Projects implemented the countermeasures to prevent environmental negative effect , in cases where the local government of project site requires a local environmental assessment.
 - Projects conducted meetings to explain for and to get the understanding of development of projects from local residents.
 - Projects conducted periodical drills and training based on the prepared manuals in order to minimize pollution in the event of environmental problems arising from its business activities. We endeavor to reduce environmental risks by thoroughly managing its emissions of substances, by imposing tougher standards on itself than legally mandated and setting environmental targets for reducing emissions of substances that pollute the environment from its plants. We surely inspect and maintain its equipment and ensure work is performed according to work process standards with the aim of minimizing environmental risk and preventing environmental problems arising in its business activities.

For details on the specific eligible projects, please see Reference 2.

2.2 Process for Project Evaluation and Selection

The list of selected eligible projects to be allocated with proceeds from the Green Bond will be evaluated in co-operation with Domestic Project Management Department and Environmental Plant Planning & Engineering Department of Engineering Business Unit in Environment Business Headquarters, and Finance Section of the Corporate Planning Department in Corporate Planning Headquarters. The Board of Directors, Hitz's supreme decision-making body on operational execution, will give final approval to the eligible project selection and allocation of Green Bond Proceeds.

² Environmental Impact Assessment Law (Ministry of Environment, Japan) http://www.env.go.jp/policy/assess/1-3outline/img/pamph_e.pdf

2.3 Management of Proceeds

Finance Section of Corporate Planning Department is in charge of allocation of the proceeds to eligible projects and managing the proceeds. The budget and actual outlay of the proceeds from the Green Bond issuance will be traced and managed using an internal management system on a monthly basis in accordance with Hitz's cash management flow by numbering each eligible project. We will preserve cash management related documents complying with Hitz's accounting rule defining the range of accounting documents and preservation of the documents, and manage the documents with document saving books. Hitz intends to allocate all the proceeds of the Green Bonds within 3 years of the issue date. Unallocated proceeds will be managed in cash or cash equivalent forms.

For Hitz's process of management and tracking of proceeds, please see Reference 3.

2.4 Reporting

Hitz will provide information on the allocation of the net proceeds and environmental effects of the eligible projects on an annual basis. During construction of the eligible projects, Hitz will only disclose allocation of the net proceeds. After completion of the eligible projects, Hitz will report environmental impact from the coming April throughout the life of the bond.

2.4.1 Reporting by the Issuer

Allocation Reporting

Hitz will annually publish a report that shows the allocation of the proceeds as well as the project information until full allocation of the proceeds on the company's website or annual report. Hitz will disclose allocation breakdown in proportion by each project level subject to the clients' approval. The first allocation report will be made public within 1 year from the date of the Green Bond issuance. In case of material developments, we will renew the information on the use of proceeds on a timely basis even after the full allocation of the proceeds.

Impact Reporting

Hitz commits to report on the following impact indicators on an annual basis throughout the term of the Green Bond on the company's website or annual report;

- Number of constructing/constructed facilities and a description of the projects

(including processing capacity, progress of the projects including "constructing/constructed")

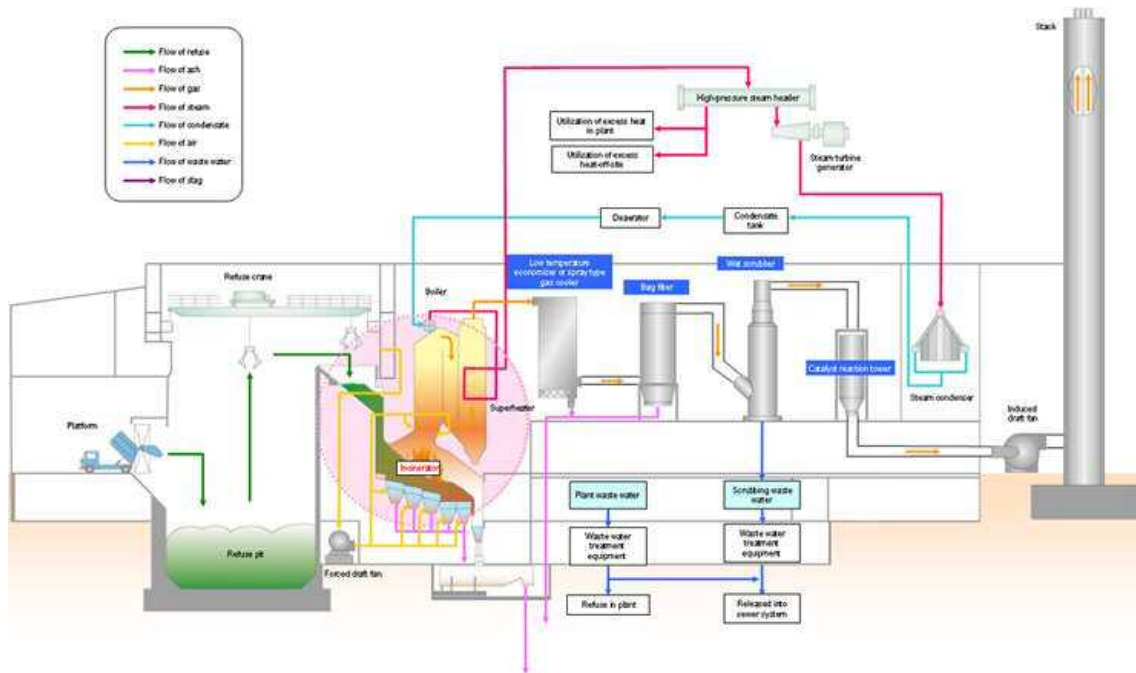
- Actual power output of the constructed facilities (MWh/year) *Disclosure is subject to the clients' approval.
- GHG emission reduction based on the actual power output (tCO₂/year) *Disclosure is subject to the clients' approval.

2.4.2 Compliance Review

Before the first anniversary of the Green Bond issuance, Hitz will engage DNV GL to review the eligible Green Bond project 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 the Green Bond.

Reference 1 : Process of Hitz's Waste-to-Energy Plants

Waste is delivered by waste collection vehicles to the waste pit, then carried on a stoker (combustion system) through the combustion oven and transformed into ash. The ash is discharged while energy contained in exhaust gases from the combustion process is recovered as steam in the boiler and used to drive power generator turbines. The resulting electricity is also available for use outside the facility.



Reference 2: Eligible Project List (As of September 2018)

Project Category	Project Name	GBP Category	Progress	Power Output	Environmental Assessment
Waste to Energy	Kyoto South Clean Center EfW project (Fushimi-ku, Kyoto-city, Kyoto)	Pollution prevention and control	Under construction (will be completed in March, 2019)	14.0MW	City of Kyoto has completed environmental assessment required by local government ordinance <Assessed environmental factors> 1) Air quality, 2) noise,3) vibration, 4) smell, 5) soil, 6) ground, 7) radio disturbance, 8) scenery, 9) waste, 10) global environmental load (Reference) "Survey after the construction of Kyoto South Clean Center" (City of Kyoto) http://www.city.kyoto.lg.jp/kankyo/page/0000163546.html
	Construction and Operation of Energy-from-Waste Plant for Kikuchi Environmental Preservation Association (Koshi-shi, Kumamoto)	Pollution prevention and control	Under construction (will be completed in March, 2021)	2.8MW	Kikuchi Environmental Preservation Association has completed environmental assessment required by local government ordinance <Assessed nature condition factors>1) Air quality, 2) water,3) soil and ground, 4) landscape and geology, 5) habitat, vegetation and ecosystem, 6) scenery and nature communication activity, 7) radiological material (Reference) "Public inspection and public comments on environmental assessment" (Kikuchi Environmental Preservation Association) http://www.kikunanseisou.or.jp/kanryoukoujou/kankyoku-uketuke.htm

Reference 3: Hitz's process of management and tracking of proceeds

