



Second Party Opinion

On the sustainability of HHI's Green Finance Framework

April 2020



SECOND PARTY OPINION¹

ON THE SUSTAINABILITY OF HYUNDAI HEAVY INDUSTRIES CO., LTD.'S GREEN FINANCE FRAMEWORK

April 2020

SCOPE

Vigeo Eiris was commissioned to provide an independent opinion (thereafter “Second Party Opinion” or “SPO”) on the sustainability credentials and management of the Green Finance Framework (the “Framework”) created by Hyundai Heavy Industries Co., Ltd. (“HHI” or the “Issuer”) to govern its issuances of Green Financing Transactions².

Our opinion is established according to Vigeo Eiris’ Environmental, Social and Governance (“ESG”) exclusive assessment methodology and to the latest version of the International Capital Market Association’s (ICMA) Green Bond Principles (“GBP”) voluntary guidelines (edited in June 2018), and of the Green Loan Principles (“GLP”) voluntary guidelines developed by the EMEA Loan Market Association, Asia Pacific Loan Market Association and Loan Syndications & Trading Association (last revised in December 2018).

Our opinion is built on the review of the following components:

- 1) **Issuer:** we assessed the Issuer’s management of potential stakeholder-related ESG controversies and its involvement in controversial activities³.
- 2) **Issuance:** we assessed the Framework, including the coherence between the Framework and the Issuer’s environmental commitments, the potential contribution of the Green Finance Transactions to sustainability and its alignment with the four core components of the GBP & GLP 2018.

Our sources of information are multichannel, combining data (i) gathered from public sources, press content providers and stakeholders, (ii) from Vigeo Eiris’ exclusive ESG rating database, and (iii) information provided from the Issuer, through documents and interviews conducted with the Issuer’s managers and stakeholders involved in the potential Green Financing Transaction issuance, held *via* a telecommunications system.

We carried out our due diligence assessment from April 3rd to April 29th, 2020. We consider that we were provided with access to appropriate documents and interviewees we solicited. To this purpose we used our reasonable efforts to verify such data accuracy.

VIGEO EIRIS’ OPINION

Vigeo Eiris is of the opinion that the Green Finance Framework of HHI is aligned with the four core components of the GBP & GLP 2018.

HHI created this Green Finance Framework to finance and/or refinance projects falling under five Green Project Categories, which are related to manufacturing of vessels that are compliant with relevant IMO regulations (e.g. LNG/LPG vessels) and activities that aim to improve the environmental performance of its shipbuilding operations. Related to the first Eligible Category “Clean transportation”, according to ITF at the OECD, considering the industrial and market needs and state-of-the-art technologies, LNG is part of the appropriate technological solutions for the low-carbon transition of the shipping industry⁴. However, while individual measures such as use of LNG/LPG can deliver a considerable reduction of CO₂ emissions, it is unlikely that it would allow to achieve long-term objectives defined in IMO’s target of reducing the shipping sector’s GHG emissions by at least 50% by 2050 compared with 2008 levels⁵. Furthermore, handling and combustion of LNG involves the release of unburnt methane during bunkering and use phase as well as upstream in its supply chain (i.e. fuel production, processing and transmission), which diminish the environmental benefits regarding climate change mitigation (methane being a very potent GHG). Considering the potential limited or negative impacts of LNG - due to methane emissions and to its relative GHG advantages - LNG is regarded as a transition fuel by industry experts (e.g. European Commission) but will not be sufficient for the decarbonisation of the sector in the

¹ This opinion is to be considered as the “Second Party Opinion” described in the GBP voluntary guidelines (June 2018 Edition) edited by the International Capital Market Association (www.icmagroup.org), as well as the GLP voluntary guidelines (December 2018 Edition) developed by the EMEA Loan Market Association, Asia Pacific Loan Market Association and Loan Syndications & Trading Association.

² “Green Financing Transactions” include bonds, loans and other debt or financing structures, subject to the discretion of the Issuer. The name “Green Bond” or “Green Loan” will be decided by the Issuer: it does not imply any opinion from Vigeo Eiris.

³ The 17 controversial activities screened by Vigeo Eiris are: Alcohol, Animal welfare, Cannabis, Chemicals of concern, Civilian firearms, Fossil Fuels industry, Coal, Gambling, Genetic engineering, High interest rate lending, Human Embryonic Stem Cells, Military, Nuclear power, Pornography, Reproductive medicine, Tar sands and oil shale, and Tobacco.

⁴ <https://www.itf-oecd.org/sites/default/files/docs/decarbonising-maritime-transport.pdf>, page 25 & 32-34

⁵ According to studies done by IMO (2016) and industry coalition such as SEA/LNG, the GHG emission reduction potential of LNG compared to conventional oil-based fuels ranges from 10-25%.

long term. In addition, as a shipbuilder, HHI will have no control over the actual usage of these vessels, and in case of dual-fuel engines, whether LNG/LPG will be used as the primary/only fuel. Therefore, **we express a moderate assurance⁶ (our medium level of assurance) on the Issuer's commitments and on the contribution of the Framework to sustainability.**

1) Issuer (see Part I):

- ▶ As of April 2020, HHI is facing 2 stakeholder-related controversies related to the Environment domain (criteria "Atmospheric emissions" and criteria "Use and disposal of products") and the Business Behaviour domain (criteria "Sustainable relationships with suppliers"). The frequency of the controversies is considered isolated. The severity of their impact on both the company and its stakeholders is considered high. HHI is considered reactive.
- ▶ As of April 2020, HHI is involved in two of the 17 controversial activities screened under Vigeo Eiris methodology, namely: major involvement in Military (less than 5% of total turnover) and minor involvement in Nuclear Power (less than 5% of total turnover). We did not find any involvement of HHI in the other 15 controversial activities screened under Vigeo Eiris methodology.⁷

2) Issuance (see Part II):

The Issuer has described the main characteristics of the Green Financing Transactions within a formalized Green Finance Framework which covers the four core components of the GBP & GLP 2018 (the last updated version was provided to Vigeo Eiris on April 29th, 2020). The Issuer has committed to make this document publicly accessible on HHI's website⁸ at the date of issuance, in line with good market practices.

We are of the opinion that the Green Finance Framework is coherent with HHI's main sector sustainability issues, with its publicly disclosed strategic sustainable development priorities, and that it contributes to achieve its sustainable development commitments.

Use of Proceeds

- ▶ The net proceeds of the Green Financing Transactions will exclusively finance and/or refinance, in part or in full, projects falling under five Green Project Categories ("Eligible Categories"), namely: Clean Transportation, Pollution Prevention and Control, Sustainable Water Management, Renewable Energy, Energy Efficiency. We consider the Eligible Categories are relevant and clearly defined.
- ▶ The Eligible Categories are intended to contribute to three main environmental objectives (pollution prevention and control, climate change mitigation and energy efficiency improvement). These objectives are formalized in the Framework and considered relevant and clearly defined.
- ▶ The Eligible Categories are considered to provide clear environmental benefits. The Issuer has committed to assess and, where feasible, quantify the expected environmental benefits of Green Financing Transactions. One recommendation is to define *ex-ante* quantified environmental targets, for each Eligible Category.
- ▶ The Eligible Green Projects are likely to contribute to five of the United Nations' Sustainable Development Goals ("SDGs"), namely: Goal 6. Water and Sanitation, Goal 7. Affordable and Clean energy, Goal 9. Industry, Innovation and Infrastructure, Goal 12. Responsible Consumption and Production, and Goal 13. Climate Action.
- ▶ The Issuer has transparently communicated on the estimated share of refinancing for its first bond/loan issuance, which will be equal to 100%. The Issuer has committed that, in case of refinancing, a look-back period of maximum 36 months from the issuance or signing date of Green Financing Transactions will apply, in line with market practices.

Process for Projects Evaluation and Selection

- ▶ The governance and process for the evaluation and selection of the Eligible Projects are formalized in the Framework. We consider that the process is structured, transparent and relevant.
- ▶ The process relies on explicit eligibility criteria (selection and exclusion), relevant to the environmental objectives defined for the Eligible Categories.

⁶ Definition of Vigeo Eiris' scales of assessment (as detailed in the Methodology section):

- Level of Evaluation: Advanced, Good, Limited, Weak.
- Level of Assurance: Reasonable, Moderate, Weak.

⁷ In relation to the Framework, HHI has identified a list of sectors/activities to be excluded from the use of proceeds.

⁸ <http://english.hhi.co.kr/sustain/green>

- ▶ The identification and management of the environmental and social risks associated with the Eligible Green Projects are considered good.

Management of Proceeds

- ▶ The rules for the management of proceeds are clearly defined. We consider that they would enable a documented and transparent allocation process.

Reporting

- ▶ The reporting process and commitments appear to be good, covering both the funds allocation and the environmental benefits of the Eligible Projects.
- ▶ The reporting indicators on allocation of proceeds and environmental benefits are relevant and clear.

HHI has committed that its Green Finance Framework will be supported by external reviews:

- A pre-issuance consultant review: the hereby Second Party Opinion delivered by Vigeo Eiris, covering all the features of the Framework, based on pre-issuance assessment and commitments, to be made publicly available by the Issuer on its website⁹, at the date of issuance.

HHI reports to receive company-level financial and sustainability reviews by a third-party auditor. One recommendation is to have an external verification performed by a third-party auditor specifically for the Green Finance Framework, covering the allocation of funds, the compliance in all material aspects, of (i) the actual allocation of proceeds to the Eligible Green Assets and their alignment with the eligibility criteria and (ii) the impact reporting, annually and until the Green Financing Transactions' full allocation and in case of any material change.

This Second Party Opinion is based on the review of the information provided by the Issuer, according to our exclusive assessment methodology and to the GBP & GLP voluntary guidelines (2018). HHI acknowledges that in case of changes of such standards and market practices and expectations, VIGEO EIRIS shall exclude any liability regarding the use of the concerned Second Party Opinion and its compliance with then-current standards and market practices and expectations.

April 29th, 2020

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Disclaimer

Transparency on the relation between Vigeo Eiris and the Issuer: Vigeo Eiris has not carried out any audit mission or consultancy activity for HHI. No established relation (financial or commercial) exists between Vigeo Eiris and the Issuer.

This opinion aims at providing an independent opinion on the sustainability credentials and management of the Framework, based on the information which has been made available to Vigeo Eiris. Vigeo Eiris has neither interviewed stakeholders out of the Issuer's employees, nor performed an on-site audit nor other test to check the accuracy of the information provided by the Issuer. The accuracy, comprehensiveness and trustworthiness of the information collected are a responsibility of the Issuer. The Issuer is fully responsible for attesting the compliance with its commitments defined in its policies, for their implementation and their monitoring. The opinion delivered by Vigeo Eiris neither focuses on the financial performance of the potential Green Financing Transactions, nor on the effective allocation of their proceeds. Vigeo Eiris is not liable for the induced consequences when third parties use this opinion either to make investments decisions or to make any kind of business transaction.

Restriction on distribution and use of this opinion: The deliverables remain the property of Vigeo Eiris. The draft version of the Second Party Opinion by Vigeo Eiris is for information purpose only and shall not be disclosed by the client. Vigeo Eiris grants the Issuer/Borrower all rights to use the final version of the Second Party Opinion delivered for external use via any media that the Issuer Borrower shall determine in a worldwide perimeter. The Issuer Borrower has the right to communicate to the outside only the Second Party Opinion complete and without any modification, that is to say without making selection, withdrawal or addition, without altering it in any way, either in substance or in the form and shall only be used in the frame of the contemplated Green Financing Transactions' issuances. The Issuer acknowledges and agrees that Vigeo Eiris reserves the right to publish the final version of the Second Party Opinion on Vigeo Eiris' website and on Vigeo Eiris' internal and external communication supporting documents.

⁹ <http://english.hhi.co.kr/sustain/green>

DETAILED RESULTS

Part I. ISSUER

Hyundai Heavy Industries Co., Ltd. (HHI) operates shipbuilding industry business. It has four business units: Shipbuilding, Naval & Special Ships, Offshore & Engineering, Industrial Plant & Engineering and Engine & Machinery. It is one of the largest shipbuilders in the world, with approximately 10% of market share. HHI is the shipbuilding subsidiary of Korea Shipbuilding & Offshore Engineering (KSOE), which is itself a subsidiary of HHI Group.¹⁰

Level of the Issuer's integration of ESG factors in its commitments and strategy

As requested by HHI, this document does not contain information on the integration of ESG factors in its commitments and strategy at the company level.

Management of stakeholder-related ESG controversies

As of April 2020, HHI is facing 2 stakeholder-related ESG controversies, linked to two of the six domains we analyse:

- Environment, in the criteria of "Atmospheric emissions" and "Use and disposal of products".
- Business Behaviour, in the criteria of "Sustainable relationships with suppliers".

Frequency: On average, the controversies are considered isolated, in line with the sector average.

Severity: The severity of their impact on both the company and its stakeholders is considered high for both controversies – in line with the sector average.

Responsiveness: HHI is overall reactive, in line with the sector average: The Issuer reports in a detailed way on its position on one case of high severity; but is non communicative on the other case of significant severity.

Involvement in controversial activities

As of April 2020, HHI displays involvement in two of the 17 controversial activities screened under Vigeo Eiris methodology, namely:

- Military (major involvement): HHI has an estimated turnover from military sales which is less than 5% of total turnover. The Company produces a variety of military vessels, including warships and submarines.
 - o **Conventional weapons**: The Company reports to be a key supplier to the Republic of Korea Navy and Coast Guard and to be currently executing major ship construction projects for them, including the FFX Batch-II / III Multi-purpose Frigates, the KSS-II / KSS-III 1,800 ton Air Independent Propulsion (AIP) submarines, and the AOE-II Fleet support vessel.
 - o **Key parts or services for weapons and Other military parts or services**: The Company is assumed to supply a range of spare parts and to provide life-cycle support for its vessels.
- Nuclear power (minor involvement): HHI has an estimated turnover from involvement in nuclear power which is less than 5% of total turnover. This turnover is derived from the Offshore & Industrial Plant Engineering and Engine & Machinery divisions, which supply equipment for nuclear power plants, including specialty pumps, which Vigeo Eiris classified as Minor parts and services. The Engine & Machinery division also supplies emergency diesel generator (EDG), which are classified as conventional parts are services for nuclear power plants.

We did not find any involvement of HHI in the other 15 controversial activities screened under Vigeo Eiris methodology, namely: Alcohol, Animal welfare, Cannabis, Chemicals of concern, Civilian firearms, Fossil fuels industry, Coal, Unconventional Oil and Gas, Gambling, Genetic engineering, Human Embryonic Stem Cells, High interest rate lending, Pornography, Reproductive Medicine and Tobacco.¹¹

The controversial activities research provides screening of companies to identify involvement in business activities that are subject to philosophical or moral beliefs. The information does not suggest any approval or disapproval on their content from Vigeo Eiris.

¹⁰ <http://www.hyundai-holdings.com/introduction>

¹¹ In relation to the Framework, HHI has also identified a list of sectors/activities to be excluded from the use of proceeds. Please refer to assessment in Part II.

Part II. ISSUANCE

Coherence between the Issuance and the Issuer

Context note: According to the International Chamber of Shipping (ICS), the international shipping industry is responsible for the carriage of around 90% of world trade¹² and has a lower impact in terms of GHG emissions per ton of freight transported compared to other transport solutions¹³. According to WWF, it is accepted that whilst shipping is relatively safe and clean compared with other transport modes, the industry does have a significant impact on the environment¹⁴. In particular, the sector is energy intensive, and is responsible for large amounts of greenhouse gas (GHG) emissions (around 2-3% of the world's GHG emissions).

The main sustainability challenges of the shipping industry are the energy efficiency, the reduction of emissions related to energy use, the eco-design strategy to reduce environmental impacts of the vessels and the integration of environmental and social factors in the supply chain. The industry's efforts to reduce emissions related to energy use in the short term has been rather limited at sector level, due to few technological options available for full scale application to replace Heavy Fuel Oil (HFO). However, in April 2018, the International Maritime Organization (IMO) adopted an initial strategy for the reduction of GHG emissions from ships, with the targets of reducing the total annual GHG emissions by at least 50% by 2050 and reducing the average carbon intensity by 70% in 2050, compared to 2008. The IMO's 0.5% sulphur cap on marine fuel has been put into force since January 1st, 2020.

LNG fuel is considered to be one of the viable options for the sector to meet IMO's 2020 regulations. However, its contribution towards IMO's 2050 targets in reducing GHG emissions is considered limited. According to IMO's 2016 study '*Studies on the feasibility and use of LNG as a fuel for shipping*', the CO₂ reduction potential of switching from marine diesel oil (MDO) to LNG is about 15%¹⁵; while, a 2018 report from the International Transport Forum (ITF) at the OECD cites CO₂ reduction from switching from heavy fuel oil (HFO) to LNG to be as much as 30%¹⁶. In addition, the use of LNG significantly eliminates SO_x emissions and particulate matters, and at least halves the amount of NO_x emissions. International Chamber of Shipping (ICS) concluded in its 2018 report that the greater use of LNG, along with biofuels, "*may well form part of the interim solution, supplemented by renewable sources such as wind and solar*" to reduce GHG emissions from ships¹⁷.

The availability of LNG bunkering facilities is important for the sector to adopt LNG as an engine fuel. According to the above-mentioned IMO's 2016 study, ship-to-ship (STS) bunkering is considered a more flexible option compared to truck to ship (TTS) or Intermediate tank via pipeline to ship (ITPS), in terms of both capacity and location.¹⁵ Moreover, according to the same IMO study, STS bunkering on average has lower LNG leakage in case of pipe rupture during the ship bunkering phase than TTS or ITPS options.¹⁵

We are of the opinion that the contemplated Green Financing Transactions are coherent with HHI strategic sustainability priorities and sector issues, and contribute to achieving the Issuer's sustainability commitments.

HHI appears to acknowledge its role in providing solutions to support society's transition to a low carbon and sustainable economy. It has developed sustainable products and research to minimize its impact on climate change and society.

HHI has a mid to long-term strategy to lead the market in high-efficiency and environmentally friendly shipbuilding, through a focus on technologies, and research and development. HHI reports making best efforts to develop products that comply with global environmental standards, including standards from the International Maritime Organisation (IMO) for air pollution and ballast water treatment systems, and Norwegian shipping regulations for non-methane volatile organic compounds.

HHI Group, of which HHI is one of its subsidiaries, has an environmental management system (ISO 14001) to manage pollutants, and group-wide targets to reduce its carbon footprint and environmental impact. HHI also has an energy management system (ISO 50001) to manage energy consumption, with a Factory Energy Management System and an Energy Storage System. In 2015, HHI established the HHI Greenhouse Gas Management System (HGMS), which calculates GHG emissions based on IPCC global standards and Korea's GHG calculation guideline, for every emitting facility of the Group, to manage the emissions of six greenhouse gases.

By creating a Framework to issue Green Financing Transactions intended to finance or refinance projects related to clean transportation, pollution prevention and control, sustainable water management, renewable energy, and energy efficiency, the Issuer coherently aligns with its sustainability strategy and commitments, and addresses the main issues of the sector in terms of sustainable development.

¹² <https://www.ics-shipping.org/shipping-facts/shipping-facts>

¹³ <https://www.ics-shipping.org/shipping-facts/environmental-performance/comparison-of-co2-emissions-by-different-modes-of-transport>

¹⁴ https://www.wwf.at/de/view/files/download/showDownload/?tool=12&feld=download&sprach_connect=2395, page 1

¹⁵ <http://www.imo.org/en/OurWork/Environment/PollutionPrevention/AirPollution/Documents/LNG%20Study.pdf>, page 117, 122 & 142

¹⁶ <https://www.itf-oecd.org/sites/default/files/docs/decarbonising-maritime-transport.pdf>, page 34

¹⁷ <http://www.ics-shipping.org/docs/default-source/key-issues-2018/developing-zero-co2-fuels.pdf?sfvrsn=0>, page 1

Use of proceeds

The net proceeds of the Green Financing Transactions will exclusively finance and/or refinance, in part or in full, projects falling under five Green Project Categories (“Eligible Categories”), namely: Clean Transportation, Pollution Prevention and Control, Sustainable Water Management, Renewable Energy, Energy Efficiency. We consider the Eligible Categories are relevant and clearly defined.

The Eligible Categories are intended to contribute to three main environmental objectives (pollution prevention and control, climate change mitigation and energy efficiency improvement). These objectives are formalized in the Framework and considered relevant and clearly defined.

The Eligible Categories are considered to provide clear environmental benefits. The Issuer has committed to assess and, where feasible, quantify the expected environmental benefits of Green Financing Transactions. One recommendation is to define *ex-ante* quantified environmental targets, for each Eligible Category.

The Issuer has transparently communicated on the estimated share of refinancing for its first bond/loan issuance, which will be equal to 100%. The Issuer has committed that, in case of refinancing, a look-back period of maximum 36 months from the issuance or signing date of Green Financing Transactions will apply, in line with market practices.

HHI Framework			Vigeo Eiris Analysis
Eligible Categories	Definition / Eligibility Criteria	Environmental objectives and benefits	
Clean Transportation	<p>Clean and sustainable shipbuilding</p> <p>1. <i>Investment and expenditure in relation to design, construction [and maintenance] of clean and sustainable vessels (“CSV”) according to IMO¹⁸ and Norwegian shipping regulations¹⁹.</i></p> <p><i>CSVs would represent, but not limited to, the below vessels:</i></p> <ul style="list-style-type: none"> • LNG carriers, LNG FSRU • LPG/Ethane carriers • LNG Dual Fuel Container Carriers • LNG Dual Fuel Crude Oil and Product Carriers <p><i>CSVs would have, but not limited to, the below technology, design, equipment and facilities:</i></p> <ul style="list-style-type: none"> • Ballast Water Treatment (BWT) Systems • Selective Catalytic Reduction (SCR) Systems • Exhaust Gas Recirculation (EGR) Systems • Exhaust Gas Cleaning (EGC) Systems • Emergency Shutdown (ESD) Systems • Volatile Organic Compounds (VOC) Recovery Systems 	<p>Pollution prevention and control</p> <p>Reduction of air emissions including NO_x, SO_x and GHG emissions</p>	<p>The definition of the <u>Eligible Category</u> is overall clear.</p> <ul style="list-style-type: none"> - The definition of CSVs is based on compliance with relevant regulations of IMO and Norwegian Maritime Authority. However, it is not fully clear which specific regulations should be applied for a vessel to be considered “clean and sustainable”. - CSVs are required to have at least the listed technology, design, equipment and facilities. - HHI reports that it has set its own Energy Efficiency Design Index (EEDI; measured as grams-CO₂/tonne-mile) targets following IMO Resolution MEPC.203(62), which has been put into force since January 1st, 2013²¹: by 2020, CO₂ emissions (measured in EEDI) are reduced by 20 % compared to the reference CO₂ emissions amount in year 2008; by 2022, CO₂ emissions (measured in EEDI) are reduced by 30 % compared to the reference CO₂ emission amount in year 2008. The target years are in line with IMO’s latest plan to implement its Initial Strategy on reduction of GHG emissions from ships.²² However, since EEDI reference lines have been developed by IMO using existing data of various type of ships and the results differ amongst ship types²³, it is unclear whether the choice of a base year of 2008 suffices the IMO requirements on EEDI. <p>The Eligible Green Projects are intended to contribute to one <u>main environmental objective</u> (pollution prevention and control), which is considered relevant and clearly defined in the Framework:</p> <ul style="list-style-type: none"> - <u>Pollution prevention and control</u>: Fossil fuels are an important source of other atmospheric emissions of pollutants and particles. According to the International Maritime Organisation (IMO), from January 1st,

¹⁸ <http://www.imo.org/en/About/Pages/Default.aspx>

¹⁹ <https://www.sdir.no/en/shipping/legislation/>

²¹ [http://www.imo.org/blast/blastDataHelper.asp?data_id=30762&filename=203\(62\).pdf](http://www.imo.org/blast/blastDataHelper.asp?data_id=30762&filename=203(62).pdf), page 11-12

²² <http://www.imo.org/en/OurWork/Environment/PollutionPrevention/AirPollution/Pages/GHG-Emissions.aspx>

²³ <http://www.imo.org/en/OurWork/Environment/PollutionPrevention/AirPollution/Documents/Air%20pollution/M2%20EE%20regulations%20and%20guidelines%20final.pdf>, page 12-14

HHI Framework			Vigeo Eiris Analysis
Eligible Categories	Definition / Eligibility Criteria	Environmental objectives and benefits	
	<p>The design of CSVs would follow the Energy Efficiency Design Index (EEDI) and the Ship Energy Efficiency Management Plan (SEEMP)²⁰. CSVs may have the following features:</p> <ul style="list-style-type: none"> • Liquefied Natural Gas (LNG), Liquefied Petroleum Gas (LPG) or Ethane burning engine including LNG/LPG Bunkering Vessels • Low Sulphur Fuel Oil (LFO) Ultra-Low Sulphur Fuel Oil (ULSFO) • Hybrid powered • Machinery efficiency and wind assistance powered • Ability to use onshore power supply when at berth • Hydrogen fuel cell • Ammonia or hydrogen in combustion engine <p>2. Research and Development (R&D) would have, but not limited to, the below technology, design, equipment and facilities:</p> <ul style="list-style-type: none"> • Alternative fuel engine such as LNG, LPG, Ethane, Ammonia or Methanol in combustion engine • Eco-friendly technology such as electric propulsion, SO_x reduction, 		<p>2020, the limit for sulphur in fuel oil used on board ships operating outside designated emission control areas will be reduced to 0.50% m/m (mass by mass). By manufacturing vessels that use low-sulphur fuels (e.g. LNG, LPG, etc.) and are equipped with technologies and facilities that treat ballast water and control exhaust gas, HHI, as one of the largest shipbuilders, brings products to the market that help the shipping sector meet the IMO requirements and reduce overall environmental impacts. Therefore, the objective “pollution prevention and control” is relevant.</p> <p>The Eligible Green Projects are considered to provide clear <u>environmental benefits</u>. HHI has committed to assess and, where feasible, quantify the expected environmental benefits of the Eligible Green Projects.</p> <ul style="list-style-type: none"> - The environmental benefits associated with the manufacturing of LNG/LPG vessels are clear: <ul style="list-style-type: none"> - The use of LNG instead of low-sulphur fuel (IMO 2020 compliant) is expected to avoid SO_x emissions by nearly 100% in case of fully running on LNG, delivering a clear environmental benefit. - The use of LNG in general reduce NO_x emissions by up to 85% if fully running on LNG using and using low pressure engines²⁴, delivering a clear environmental benefit. - LPG is expected to deliver to similar benefits of reducing SO_x (90-96%), particulate matters (PM) (90%) and CO₂ (20%). For NO_x, it could reduce by 30-50% if using gas injection compared to fuel oil diesel engine (Tier II).²⁵ - In case of vessels capable of using Low Sulphur Fuel Oil (LFO) Ultra-Low Sulphur Fuel Oil (ULSFO), it will at least help meet IMO’s 2020 sulphur cap requirement.

²⁰ <http://www.imo.org/en/OurWork/Environment/PollutionPrevention/AirPollution/Pages/Technical-and-Operational-Measures.aspx>

²⁴ http://production.presstogo.com/fileroot7/gallery/dnvgl/files/original/124feddb807045969b3071a55f73c80b/124feddb807045969b3071a55f73c80b_low.pdf, page 33

²⁵ <https://gmn.imo.org/wp-content/uploads/2018/01/AnnexV-2-5-Alternative-Fuels-and-Energy-Efficiency.pdf>, page 5

HHI Framework			Vigeo Eiris Analysis
Eligible Categories	Definition / Eligibility Criteria	Environmental objectives and benefits	
	<p>VOC recovery system, NO_x reduction</p> <ul style="list-style-type: none"> Sailing efficiency improvement such as Energy Storage System, Wind Assistance, Smartship Technologies 		<ul style="list-style-type: none"> Relating to GHG emission reduction, a report from the International Council on Clean Transportation (ICCT) in January 2020 suggests that the use of LNG might not reduce greenhouse gas (GHG) emissions on a life-cycle basis: for instance, low-pressure dual fuel, four-stroke, medium-speed engines emitted 70% more life-cycle GHGs when it used LNG instead of marine gas oil (MGO) and 82% more than using MGO in a comparable medium-speed diesel (MSD) engine.²⁶ The definition of eligible projects also mention that CSV will be equipped with equipment and facilities such as Ballast Water Treatment (BWT) Systems and Volatile Organic Compounds (VOCs) Recovery Systems, etc. These onboard systems are expected to improve the environmental performance of the vessels and reduce/avoid potential pollutions during the operation of the vessels. <u>Take BWT Systems as an example</u>: Ballast water may pose serious ecological, economic and health problems due to the multitude of marine species carried in ships' ballast water, which include bacteria, microbes, small invertebrates, eggs, cysts and larvae of various species. The discharge of such ballast water lead to the spread of invasive species.²⁷ On 13 February 2004, the <i>International Convention for the Control and Management of Ships' Ballast Water and Sediments</i> (BWM Convention) was adopted between IMO Member States²⁸. Since then, 15 sets of guidelines²⁹ have been developed for the uniform implementation of the BWM Convention, which entered into force on 8 September 2017. <p>Recommendations include:</p>

²⁶ https://theicct.org/sites/default/files/publications/Climate_implications_LNG_marinefuel_01282020.pdf

²⁷ <http://www.imo.org/en/ourwork/environment/ballastwatermanagement/pages/default.aspx>

²⁸ [http://www.imo.org/en/About/Conventions/ListOfConventions/Pages/International-Convention-for-the-Control-and-Management-of-Ships%27-Ballast-Water-and-Sediments-\(BWM\).aspx](http://www.imo.org/en/About/Conventions/ListOfConventions/Pages/International-Convention-for-the-Control-and-Management-of-Ships%27-Ballast-Water-and-Sediments-(BWM).aspx)

²⁹ <http://www.imo.org/en/OurWork/Environment/BallastWaterManagement/Documents/Compilation%20of%20relevant%20Guidelines%20and%20guidance%20documents%20-%20May%202018.pdf>

HHI Framework			Vigeo Eiris Analysis
Eligible Categories	Definition / Eligibility Criteria	Environmental objectives and benefits	
			<ul style="list-style-type: none"> - To clarify HHI's definition of clean and sustainable vessels ("CSV") in relation to relevant technical thresholds (e.g. EEDI), if applicable. - To define <i>ex-ante</i> quantified environmental targets, for each Eligible Category.
Pollution Prevention	<p><i>Construction and maintenance of the below facilities:</i></p> <ul style="list-style-type: none"> • <i>Recycling facility of byproducts such as scrap metals, waste wood, waste paint cans</i> • <i>Management and treatment facility of chemical substances</i> • <i>Air pollution prevention facilities within large-scale painting factories of 50,000m³ and over from 2017 to 2023 in accordance with Management Hazardous Air Pollutants (HAPs) and Fugitive Emissions (The technology of these prevention facilities is Catalytic Oxidation (CO) which reduces Volatile Organic Compounds (VOCs) produced in business sites)</i> • <i>On-site due diligence/ regular inspection of the above facilities</i> 	<p>Pollution prevention and control</p> <p>Waste recycled</p> <p>Prevention of pollution from chemical substances used</p> <p>Reduction of VOCs emissions</p>	<p>The definition of the <u>Eligible Category</u> is clear.</p> <p>The Eligible Green Projects are intended to contribute to one <u>main environmental objective</u> (pollution prevention and control), which is considered relevant and clearly defined in the Framework.</p> <p>The Eligible Green Projects are considered to provide clear <u>environmental benefits</u>. HHI has committed to assess and, where feasible, quantify the expected environmental benefits of the Eligible Green Projects.</p>
Sustainable Water Management	<ul style="list-style-type: none"> • <i>Development and installation of wastewater treatment facilities within the business sites</i> 	<p>Pollution prevention and control</p> <p>Water recycled</p> <p>Reuse of water</p>	<p>The definition of the <u>Eligible Category</u> is clear. HHI communicated during the interview that it runs its own wastewater management facilities. One recommendation would be to specify or provide examples of the type of facilities and/or technologies that will be eligible under this Category.</p> <p>The Eligible Green Projects are intended to contribute to one <u>main environmental objective</u> (pollution prevention and control), which is considered relevant and clearly defined in the Framework.</p>

HHI Framework			Vigeo Eiris Analysis
Eligible Categories	Definition / Eligibility Criteria	Environmental objectives and benefits	
			The Eligible Green Projects are considered to provide clear <u>environmental benefits</u> . HHI has committed to assess and, where feasible, quantify the expected environmental benefits of the Eligible Green Projects.
Renewable Energy	<ul style="list-style-type: none"> • <i>Construction of new renewable energy generating units such as wind turbines, or installation of solar panels at all domestic work sites</i> 	Climate change mitigation GHG emission reduction	<p>The definition of the <u>Eligible Category</u> is clear.</p> <p>The Eligible Green Projects are intended to contribute to one <u>main environmental objective</u> (climate change mitigation), which is considered relevant and clearly defined in the Framework.</p> <p>The Eligible Green Projects are considered to provide clear <u>environmental benefits</u>. HHI has committed to assess and, where feasible, quantify the expected environmental benefits of the Eligible Green Projects.</p>
Energy Efficiency	<ul style="list-style-type: none"> • <i>Construction and maintenance of energy storage system (ESS)³⁰ center to save energy costs, reduce peak power consumption and increase energy efficiency</i> • <i>Reduction of energy consumption such as identifying real-time energy usage through remote heating and cooling control, and energy saving activities</i> • <i>Replacement of metals (250kW, 400kW) and other light bulbs in plants with high-efficiency LED lights</i> 	Energy efficiency improvement Energy savings	<p>The definition of the <u>Eligible Category</u> is clear.</p> <p>The Eligible Green Projects are intended to contribute to one <u>main environmental objective</u> (energy efficiency improvement), which is considered relevant and clearly defined in the Framework.</p> <p>The Eligible Green Projects are considered to provide clear <u>environmental benefits</u>. HHI has committed to assess and, where feasible, quantify the expected environmental benefits of the Eligible Green Projects.</p>

³⁰ Energy Storage Systems (ESS) are manufactured by 3rd party suppliers, some of which are designed and modified by HHI to achieve the best operational outcome

In addition, the Eligible Green Projects are likely to contribute to five of the United Nations' Sustainable Development Goals ("SDGs"), namely: Goal 6. Water and Sanitation, Goal 7. Affordable and Clean energy, Goal 9. Industry, Innovation and Infrastructure, Goal 12. Responsible Consumption and Production, and Goal 13. Climate Action.



Eligible Green Projects	UN SDGs identified	UN SDGs targets
Clean Transportation	SDG 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
	SDG 13. Climate Action	<i>Take urgent action to combat climate change and its impacts</i>
Pollution Prevention	SDG 12. Responsible Consumption and production	12.4 By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment
Sustainable Water Management	SDG 6. 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 untreated wastewater and substantially increasing recycling and safe reuse globally
		6.4 By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity
Renewable Energy	SDG 7. Affordable and Clean Energy	7.2 By 2030, increase substantially the share of renewable energy in the global energy mix
	SDG 13. Climate Action	<i>Take urgent action to combat climate change and its impacts</i>
Energy Efficiency	SDG 7. Affordable and Clean Energy	7.3 By 2030, double the global rate of improvement in energy efficiency
	SDG 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

Process for Project Evaluation and Selection

The governance and process for the evaluation and selection of the Eligible Projects are formalized in the Framework. We consider that the process is structured, transparent and relevant.

The process for evaluation and selection of Eligible Projects is defined.

The evaluation and selection of Eligible Projects is based on relevant internal expertise, with well-defined roles and responsibilities:

- For the purpose of the Green Financing Transactions (GFT), a Green Finance Working Group (“GFWG” or “Working Group”) has been created. The GFWG is composed of senior representatives from the following departments:
 - Corporate Affairs Team
 - Electricity Planning Team
 - Environmental Management Team
 - Project Planning Department
 - Shipbuilding Production Engineering Department
 - Technology Planning Departments
 - Technology Planning Team
 - Treasury Team
- Business units will submit potential Eligible Green Projects to GFWG for review.
- The GFWG is responsible for:
 - Reviewing the compliance of potential Eligible Green Projects with the eligibility criteria outlined in the GFF, environmental guidelines applicable within HHI.
 - Presenting compliant potential Eligible Green Projects to senior management for final approval.
 - Reviewing the allocation of the GFT proceeds and facilitate ongoing reporting.
 - Managing future updates of the Framework, including expansion of the use of proceeds.
- In case of divestment, or if an Eligible Green Project no longer meets the eligibility criteria, the reallocation of funds by the treasury team to other Eligible Green Projects.
- In case of controversies in regard to a project, the CEO or CFO will make the final decision on whether to exclude such project from Eligible Green Projects.

The traceability and verification of the selection and evaluation of the projects is ensured throughout the process:

- The GFWG will meet every 12 months.
- The traceability of the decisions appears to be ensured throughout the process, through meeting minutes from meetings of the GFWG.

A recommendation is to have external reviews, in order to verify the compliance of the selected Green Portfolio of projects, with the eligibility criteria and process defined in the Framework.

The process relies on explicit eligibility criteria (selection and exclusion), relevant to the environmental objectives defined for the Eligible Categories.

- The selection is based on the Eligible Categories defined in the Use of Proceeds section of the Framework.
- The Issuer is committed to exclude the following sectors from Green Eligible Categories, namely: Coal or non-conventional fossil fuels; Nuclear energy related; Biomass and waste to energy projects using feedstock suitable for food production, and that deplete carbon pools, are grown on land with current or prior high biodiversity; Biomass plants, waste to energy power plants and geothermal plants with CO₂ emission level of more than 100g CO₂/kWh; Large scale hydropower plants (>20MW capacity) and concentrated solar power; Child labour or forced labour; Production or trade of weapon; Production or trade of alcohol; Production or trade of tobacco; Conflict Minerals; Predatory or payday lending; Palm Oil; Adult Entertainment; Military Contracting.

The identification and management of the environmental and social risks associated with the Eligible Green Projects are considered good.

Regarding risk management, HHI has identified a list of rules and regulations that are applicable to its business operations and also established internal standards on safety and environmental management. Moreover, HHI Group, of which HHI is a subsidiary, publishes annually an Integrated Report in which it specifies policies, measures and results covering the environmental and social risks associated with the Eligible Projects. These policies and measures apply to all operations of HHI including Eligible Green Projects financed/refinanced by the GFT.

Environmental risks (applicable to all the Eligible Categories unless otherwise specified)

- **Environmental management and eco-design** (good): HHI Group is managing pollutants with an environmental management system established according to ISO 14001. At the Group level, there is a guiding policy "Environmental pollution prevention and efficient response to relevant regulations". HHI itself was accredited the ISO14001 certificate in 1997. Although environmental impact assessment is not mandatory for shipbuilding in South Korea³¹, HHI communicated that it manages potential environmental impacts and implement pollution prevention measures following relevant regulations in South Korea, IMO as well as its internal safety and environment standards. There is no specific information with regard to an eco-design approach and/or life cycle analysis, however, the mitigation of impacts is partly covered by legal compliance and internal safety and environment standards.
- **Energy use** (good): HHI Group established an energy management system based on ISO 50001 to monitor energy consumption of all its subsidiaries including HHI. The Group uses its big-data-driven Factory Energy Management System (FEMS) to optimize energy consumption for each factory, while the Energy Storage System (ESS) manages peak power. The energy-saving system sends messages to each department when the gross energy consumption of factories exceeds a certain level. Each department designates an energy manager to be responsible for the education and knowledge-sharing of energy-saving activities. These measures cover all the business operations of HHI including the Eligible Green Projects under the Framework. HHI itself implements measures to reduce energy consumption such as identifying real-time energy usage through remote heating and cooling control. The fifth Eligible Category specifically aims to improve energy efficiency of HHI's business activities. It is reported that HHI achieved 14.% energy cost saving in 2018 (calculated as (Energy cost target for 2018 – Actual energy cost for 2018) /Energy cost target for 2018).³²
- **Reducing GHG emissions** (good): HHI Group established the HHI Greenhouse Gas Management System (HGMS) in 2015, which calculates GHG emissions based on the IPCC global standard and Korea's GHG calculation guideline. The HGMS monitors every GHG emitting facility found in offices, factories and research centres of the Group to manage the emissions of six greenhouse gases (i.e. CO₂, CH₄, N₂O, HFCs, PFCs, and SF₆). Such a system thus covers all the business operations of HHI including the Eligible Green Projects under the Framework. The calculations from the system are subject to stage-by-stage verification from a third party to ensure accuracy. The Group's integrated report includes HHI's company-level data on energy consumption, energy savings and GHG emission (Scope 1 and Scope 2).
- **Prevention and mitigation of environmental pollution and environmental/industrial accident** (good): HHI Group-level management system includes an Inspection System (regular inspections and an emergency contact system) and Environmental Pollution Prevention Training programme (for personnel handling hazardous chemicals and on marine pollution prevention). Facilities generating environment pollutants and inducing marine pollution are checked every day and recorded in a log. When issues are found, measures are immediately taken in collaboration with relevant departments. HHI Group also reports to implement internal environmental standards 50% stricter than the levels required by environmental regulations.
- **Air pollution control**: HHI has established its internal standard "*Air emission and prevention facility operation bylaws*", which covers air pollutants such as dust, odour, NO_x, SO_x, VOCs, etc. HHI reports that it signed a voluntary agreement for fine dust reduction (2018-2022) in October 2018 with other local companies. HHI established reduction plans by year to achieve the agreement goal of 40% reduction of fine dust emissions by 2022 from the 2014 level.

³¹ https://elaw.klri.re.kr/kor_service/lawView.do?lang=ENG&hseq=48627, Article 22

³² http://www.hyundai-holdings.com/docs/HHI_Group_Integrated_Report_2019.pdf, page 96

- Wastewater and water pollution control: HHI has established its internal standard “*Wastewater discharge facility and water pollution prevention facility operation details*”. Wastewater released from the business site is treated in the wastewater treatment plant within the site and by outsourced vendors. Wastewater self-treated by HHI within its business sites is discharged into the wastewater treatment plants located in Bangeojin and Yongyeon in Ulsan, South Korea. Specifically for HHI, the company reports that it requests water quality analysis for each discharge facility on a quarterly or semi-annual basis to conduct studies on specific water pollutant discharge amount since 2018.
- Waste management: Relating to the second Eligible Category, in particular the waste incineration operations, HHI reports that bottom ash and water sludge from the incinerators are reused by specialized outsourcing companies. Fly ash is buried in the landfill according to environmental regulations in South Korea. Relating to the fifth Eligible Category, for the replaced metals and light bulbs, HHI reports that some replaced metals are reused at HHI’s workplaces or sold to special collectors for proper recycling; some waste materials are disposed in HHI’s waste incineration plant or treated by designated waste disposal service providers.
- **Protection of biodiversity** (limited): Although there is no specific commitment or policy on the protection of biodiversity, there are internal standards such as “*Marine Pollution Prevention Measures*” to manage and mitigate potential impacts of the Eligible Green Projects on the marine environment and ecosystem. Some of the risk mitigation measures are expected to be covered by measures in place related to pollution prevention and control. For the first Eligible Category, the installation of BWT systems would also help mitigate negative impacts on the marine biodiversity.
- **Integration of environmental factors in the supply chain** (limited): HHI Group has a subcontracting compliance program, which includes site inspections into departments with direct business contacts with subcontractors. HHI has obtained ISO14001 certificate³³, which cover environmental aspects that may be relevant to supply chain management. HHI reports that it has adopted its “Green Purchase Policy to prioritise the purchase of green or environment friendly products since 2006. In the shipbuilding contracts, HHI includes in the clauses its commitment to the ship buyers that “*the VESSEL shall...be built in compliance with IMO Rules and Regulations*”. However, there is insufficient information regarding whether relevant environmental factors are being taken into consideration in relation to suppliers and contractors.

³³ <http://www.hhi.co.kr/ManageMent/mq04>

Social Risks (applicable to all the Eligible Categories unless otherwise specified)

- **Health and safety of workers** (good): HHI Group has a safety management organization that directly reports to the CEO. In addition, the Occupational Safety and Health Committee (OSHC), which consists of members both from the management and the labour union, convenes meetings regularly to discuss the safety issues in all worksites and ensures the participation of worker representatives in worksite environment measurements and safety event investigations. Relevant managers are designated for safety issues in each business division and partner. Safety meetings attended by the Company, representatives from partners and employees are held regularly as well. HHI has created a database covering a range from accident cases to safety training through the HiSEs (Hyundai Integrated Health, Safety and Environment Management System). It developed the HHI Safety Culture Assessment (SCA) as a tool for self-diagnosing its safety culture. The HHI SCA evaluates the safety awareness of executives and employees on 11 major criteria required under the safe management system. HHI reports that it established the largest integrated safety training centre in South Korea at the end of 2018. All these measures in place apply to Eligible Green Projects under this Framework.

- **Safety for other stakeholders** (good): HHI Group's safety management system includes inspecting safety management of both project sites and suppliers, and safety training includes training for business partners. At the Group level, HHI also reports that it requires business partners to appoint a safety manager in order to help them build expertise for safety management and strengthen their autonomous safety management system.

- **Fundamental labour and human rights** (good): HHI Group's business ethics includes the respect for employee's human rights. HHI Group has a Charter of Ethics, Code of Conducts, and Business Ethics Guidelines. There is a centralized structure for compliance with the enterprise Compliance Team, responsible for establishing and maintaining the compliance management system of each entity of HHI Group. Regarding labour rights, they are listed as one of the management priorities at group level. HHI reorganized its labour-management organization and assigned the minimal functions required by laws (e.g. collective bargaining and labour-management council). HHI is required to notify the union members of changes to their working conditions at least 40 days before the changes take effect. The Labour Union membership rate for HHI is 98.5% as of 2018.

- **Integration of social factors in the supply chain** (good): HHI Group has a group-wide Code of Conduct for Business Partners. HHI Group's employees and partners are required to submit an annual Business Ethics Confirmation to pledge their commitment to policies and guidelines. HHI Group also has a subcontracting compliance program, which includes site inspections into departments with direct business contacts with subcontractors. In the shipbuilding contracts, HHI includes in the clauses its commitment to the ship buyers that "*the VESSEL shall...be built in compliance with IMO Rules and Regulations*". However, there is insufficient information regarding whether other relevant social factors are being taken into consideration, and if yes, how they are integrated in the supply chain management, especially in relation to suppliers and contractors.

Recommendations include:

- To carry out an ESG risk assessment prior to the selection of an Eligible Project;
- To put in place measures to identify and mitigate potential impacts of Eligible Green Projects on biodiversity.

Management of proceeds

The rules for the management of proceeds are clearly defined. We consider that they would enable a documented and transparent allocation process.

The allocation and management of the proceeds are clearly defined:

- The net proceeds from each GFT will be deposited in the general funding accounts and be earmarked to Eligible Green Projects.
- HHI has committed to allocate all proceeds from each GFT within three years of issuances.
- The unallocated funds would be held in accordance with HHI's liquidity guidelines for expenditures or investments.
- In case a designated Project ceases to fulfil the Eligibility criteria, the Issuer has committed to replace the no longer Eligible Project by a new Eligible Project, as soon as reasonably practical.
- In case of temporary placements and instruments for unallocated proceeds, the Issuer commits not to finance activities related to exclusion criteria identified under the Use of Proceeds section.

Traceability and verification of both the tracking method and allocation of the proceeds, are ensured throughout the process :

- The net proceeds from each GFT will be managed by HHI's treasury team.
- HHI will maintain a register to keep track of the use of proceeds for each GFT, containing the following information:
 - o Type of funding transaction
 - o Allocation of use of proceeds

A recommendation is for an independent third party to verify the Eligible Project Portfolio's outstanding amount once a year and until full allocation.

Monitoring & Reporting

The reporting process and commitments appear to be good, covering both the funds allocation and the environmental benefits of the Eligible Projects.

The processes for monitoring, data collection, consolidation, validation and reporting are defined by the Issuer in its internal documentation. A recommendation is to formalise these processes in the Framework.

The processes are structured and based on relevant internal expertise and involve relevant departments of the Issuer:

- The company's internal accounting system will be used to monitor the financial aspects of the projects.
- Treasury Team will have the roles and responsibilities to report both the financial and extra financial data regarding "reporting and monitoring" for Green Finance Framework at the Eligible Category level.
- The relevant Business lines will be responsible for monitoring the environmental benefits data associated with the Eligible Green Projects.
- The GFWG will be responsible for monitoring data on the allocation of proceeds, and collecting, consolidating and reporting data on environmental benefits.

The Issuer has committed to report annually and until full allocation of the proceeds, and later in case of material changes, through HHI's Sustainability Report, Annual Report, or website, all publicly accessible.

The Issuer has committed to transparently communicate at the Eligible Category level, on:

- Allocation of proceeds: the selected reporting indicators are relevant and clear.

Reporting indicators
- Key information includes issuer/borrower entity, transaction date, number of transactions, principal amount of proceeds, maturity date and interest or coupon (and in the case of bonds, the ISIN number)
- The aggregate amount allocated to various Eligible Green Projects
- The remaining balance of funds which have not yet been allocated and type of temporary investment (type and amount)
- The share of refinancing
- The share of co-financing in the case that other finance sources are used
- Example of Eligible Projects (subject to confidentiality disclosures)

- Environmental benefits: the selected reporting indicators are clear and relevant.

Eligible categories	Impact Indicators related to environmental benefits
Clean Transportation	- Annual emission reduction of NO _x , SO _x - GHG emissions avoided (tCO ₂ e/year)
Pollution Prevention and Control	- GHG emission avoided (tCO ₂ e/year) - Amount of HAPs(Hazardous Air Pollutants) (kg) - Annual emission reduction of VOCs (Volatile Organic Compounds) in business sites
Sustainable Water Management	- Amount of wastewater (ton/year) - Amount of BOD (Biochemical Oxygen Demand), COD (Chemical Oxygen Demand) and SS (Suspended Solids) (kg)
Renewable Energy	- Renewable energy produced (MWh/year) - Renewable energy capacity (MW)
Energy Efficiency	- Amount of energy saved (MWh) - Amount of Energy Storage by ESS (Energy Storage System) Centre (MWh)

In case of co-financing where other finance sources are used, HHI has committed to report environmental benefits to the pro-rata of co-financing.

HHI communicated that the calculation methodologies and assumptions used for the environmental/social indicators would follow domestic or international regulation such as IMO, etc. However, it is unclear whether the key methodologies and assumptions will be disclosed or not.

Recommendations include:

- To commit to disclose, at least to the investors, the key methodologies and assumptions used to calculate the environmental benefits of Eligible Projects.
- To report at least for the investors, in case of material developments relating to the Green Finance Transactions and to the Eligible Projects, including in case of ESG controversies or project modification.
- To have an independent external reviewer to verify the reported information on the tracking method and allocation of the proceeds until the Green Financing Transaction's maturity or until full allocation of proceeds, and on the environmental benefits measured.

METHODOLOGY

In Vigeo Eiris' view, Environmental, Social and Governance (ESG) factors are intertwined and complementary. As such they cannot be separated in the assessment of ESG management in any organization, activity or transaction. In this sense, Vigeo Eiris writes an opinion on the Issuer's Corporate Social Responsibility as an organization, and on the process and commitments applying to the intended issuance.

Vigeo Eiris' methodology for the definition and assessment of the corporation's ESG performance is based on criteria aligned with public international standards, in compliance with the ISO 26000 guidelines, and is organized in 6 domains: Environment, Human Resources, Human Rights, Community Involvement, Business Behaviour and Corporate Governance. Our evaluation framework of the material ESG issues have been adapted, based on the specificities of the Issuer's business activity.

Our research and rating procedures are subject to internal quality control at three levels (analysts, heads of cluster sectors, and internal review by the audit department for second party opinions) complemented by a final review and validation by the Director of Methods. Our SPO are also subject to internal quality control at three levels (consultants in charge of the mission, Production Manager, and final review and validation by the Director of Sustainable Finance and/or the Director of Methods. A right of complaint and recourse is guaranteed to all companies under our review, following three levels: first, the team in contact with the company, then the Director of Methods, and finally Vigeo Eiris' Scientific Council.

All employees are signatories of Vigeo Eiris' Code of Conduct, and all consultants have also signed its add-on covering financial rules of confidentiality.

Part I. ISSUER

NB: The Issuer has not been assessed following a complete process of rating and benchmarking developed by Vigeo Eiris.

Level of the Issuer's integration of ESG factors in its commitments and strategy

As requested by HHI, this document does not contain information on the integration of ESG factors in its commitments and strategy at the company level.

Management of stakeholder-related ESG controversies

A controversy is an information, a flow of information, or a contradictory opinion that is public, documented and traceable, allegation against an Issuer on corporate responsibility issues. Such allegations can relate to tangible facts, be an interpretation of these facts, or constitute an allegation based on unproven facts.

Vigeo Eiris reviewed information provided by the Issuer, press content providers and stakeholders (partnership with Factiva Dow Jones: access to the content of 28,500 publications worldwide from reference financial newspapers to sector-focused magazines, local publications or Non-Government Organizations). Information gathered from these sources is considered as long as it is public, documented and traceable.

Vigeo Eiris provides an opinion on companies' controversies risks mitigation based on the analysis of 3 factors:

- **Frequency:** reflects for each ESG challenge the number of controversies faced. At corporate level, this factor reflects on the overall number of controversies faced and scope of ESG issues impacted (scale: Isolated, Occasional, Frequent, Persistent).
- **Severity:** the more a controversy will relate to stakeholders' fundamental interests, will prove actual corporate responsibility in its occurrence, and will have adverse impacts for stakeholders and the company, the highest its severity. Severity assigned at corporate level will reflect the highest severity of all cases faced by the company (scale: Minor, Significant, High, Critical).
- **Responsiveness:** ability demonstrated by an Issuer to dialogue with its stakeholders in a risk management perspective and based on explanatory, preventative, remediating or corrective measures. At corporate level, this factor will reflect the overall responsiveness of the company for all cases faced (scale: Proactive, Remediate, Reactive, Non- Communicative).

The impact of a controversy on a company's reputation reduces with time, depending on the severity of the event and the company's responsiveness to this event. Conventionally, Vigeo Eiris' controversy database covers any controversy with Minor or Significant severity during 24 months after the last event registered and during 48 months for High and Critical controversies.

Involvement in controversial activities

17 controversial activities have been analysed following 30 parameters to verify if the company is involved in any of them. The company's level of involvement (Major, Minor, No) in a controversial activity is based on:

- An estimation of the revenues derived from controversial products or services.

- The specific nature of the controversial products or services provided by the company.

Part II. ISSUANCE

The Framework has been evaluated by Vigeo Eiris according to the GBP & GLP 2018 and on our methodology based on international standards and sector guidelines applying in terms of ESG management and assessment.

Use of proceeds

The definition of the Eligible Projects and of their sustainable objectives and benefits are a core element of Green Bonds or Loans standards. Vigeo Eiris evaluates the definition of the Eligible Categories, as well as the definition and the relevance of the aimed sustainability objectives. We evaluate the definition of the expected benefits in terms of assessment and quantification. In addition, we evaluate the potential contribution of Eligible Projects to the United Nations Sustainable Development Goals' targets.

Process for evaluation and selection

The evaluation and selection process has been assessed by Vigeo Eiris on its transparency, governance and relevance. The eligibility criteria have been assessed on their explicitness and relevance vs. the intended objectives of the Eligible Projects. The identification and management of the ESG risks associated with the Eligible Projects are analysed based Vigeo Eiris' ESG assessment methodology, international standards and sector guidelines applying in terms of ESG management and assessment.

Management of proceeds

The rules for the management of proceeds and the allocation process are evaluated by Vigeo Eiris on their transparency, coherence and efficiency.

Reporting

Monitoring process and commitments, reporting commitments, reporting indicators and methodologies are defined by the Issuer to enable transparent reporting on the proceeds allocation and tracking, on the sustainable benefits (output and impact indicators) and on the responsible management of the Eligible Projects financed. Vigeo Eiris has evaluated the reporting based on its transparency and relevance.

VIGEO EIRIS' ASSESSMENT SCALES

Performance evaluation		Level of assurance	
Advanced	Advanced commitment; strong evidence of command over the issues dedicated to achieving the objective of social responsibility. Reasonable level of risk management and using innovative methods to anticipate emerging risks.	Reasonable	Able to convincingly conform to the prescribed principles and objectives of the evaluation framework
Good	Convincing commitment; significant and consistent evidence of command over the issues. Reasonable level of risk management.	Moderate	Compatibility or partial convergence with the prescribed principles and objectives of the evaluation framework
Limited	Commitment to the objective of social responsibility has been initiated or partially achieved; fragmentary evidence of command over the issues. Limited to weak level of risk management.	Weak	Lack or unawareness of, or incompatibility with the prescribed principles and objectives of the evaluation framework
Weak	Commitment to social responsibility is non-tangible; no evidence of command over the issues. Level of insurance of risk management is weak to very weak.		

The logo for Vigeo Eiris, featuring the word "vigeo" in a dark blue sans-serif font and "eiris" in a lighter blue sans-serif font. Above the "e" in "eiris" are two small circles, one red and one blue.

Vigeo Eiris is an independent international provider of environmental, social and governance (ESG) research and services for investors and public & private organizations. We undertake risk assessments and evaluate the level of integration of sustainability factors within the strategy and operations of organizations.

Vigeo Eiris offers a wide range of services:

- ▶ **For investors:** decision making support covering all sustainable and ethical investment approaches (including ratings, databases, sector analyses, portfolio analyses, structured products, indices and more).
- ▶ **For companies & organizations:** supporting the integration of ESG criteria into business functions and strategic operations (including sustainable bonds, corporate ratings, CSR evaluations and more).

Vigeo Eiris is committed to delivering client products and services with high added value: a result of research and analysis that adheres to the strictest quality standards. Our methodology is reviewed by an independent scientific council and all our production processes, from information collection to service delivery, are documented and audited. Vigeo Eiris has chosen to certify all its processes to the latest ISO 9001 standard. Vigeo Eiris is an approved verifier for CBI (Climate Bond Initiative). Vigeo Eiris' research is referenced in several international scientific publications.

With a team of more than 240 experts of 28 different nationalities, Vigeo Eiris is present in Paris, London, Brussels, Casablanca, Hong Kong, Milan, New York, Rabat and Santiago de Chile.

The Vigeo Eiris Global Network, comprising 4 exclusive research partners, is present in Brazil, Germany, Israel and Japan.

For more information: www.vigeo-eiris.com

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