

SECOND PARTY OPINION¹

ON THE SUSTAINABILITY OF MOL'S GREEN LOAN FRAMEWORK

December 2019

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 Loan² ("Loan") to be offered to Emerald Green Maritime Limited (EGM or the "Borrower"; a special purpose company 100% owned by Mitsui O.S.K. Lines (MOL or the "Guarantor")³) in compliance with MOL's Green Loan Framework (the "Framework").

Our opinion is established according to Vigeo Eiris' Environmental, Social and Governance ("ESG") exclusive assessment methodology and to the Green Loan Principles ("GLP") developed by the EMEA Loan Market Association and the Asia Pacific Loan Market Association (revised in December 2018).

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

- 1) **Guarantor of the Loan:** we assessed the Guarantor's Sustainability strategy, its management of potential stakeholder-related ESG controversies and its involvement in controversial activities.⁴
- 2) **Loan:** we assessed the Framework, including the coherence between the Framework and the Guarantor's environmental commitments, the Loan's potential contribution to sustainability and its alignment with the four core components of the GLP 2018.

Our sources of information are multichannel, combining data from (i) public information gathered from public sources, press content providers and stakeholders, (ii) information from Vigeo Eiris exclusive ESG rating database, and (iii) information provided by the Guarantor through documents and interviews conducted with Guarantor's managers and stakeholders involved in the Loan offering, held *via* a telecommunications system.

We carried out our due diligence assessment from October 4th to December 12th, 2019. We consider that we were provided with access to all the appropriate documents and interviewees we solicited. We consider that the information made available enables us to establish our opinion with a reasonable level of assurance on its completeness, precision and reliability.

VIGEO EIRIS' OPINION

Vigeo Eiris is of the opinion that the Green Loan Framework of MOL is aligned with the four core components of the Green Loan Principles 2018.

The Eligible Project to be financed by the Loan is expected to have net positive environmental benefits, with positive contribution to the prevention of air pollution and climate change mitigation. Potential alternative fuels and energy to reduce GHG emissions from international shipping include Liquefied Natural Gas (LNG), advanced biofuels, hydrogen, ammonia, electric ships, wind assistance. As of today, although LNG fuel does not have the highest reduction potential compared to other alternative fuels and energy, LNG is the best available option for full scale application to reduce emissions in the global shipping industry, especially for long-distance navigation purpose. However, the contribution of fuelling vessels with LNG towards energy transition and climate change mitigation is considered not substantial given the level of GHG reduction that the shipping industry should achieve based on a long-term perspective, even though the Guarantor of the Loan has formalized an environmental vision and action plan and has set ambitious medium to long-term GHG emission reduction targets toward FY2050. **Consequently, we express a moderate assurance⁵ (our medium level of assurance) on the Guarantor's commitments and on the contribution of the contemplated Loan to sustainability.**

1) Guarantor of the Loan (see Part I):

¹ This opinion is to be considered as the "Second Party Opinion" described in the GLP voluntary guidelines developed by the EMEA Loan Market Association and the Asia Pacific Loan Market Association (revised in December 2018).

² The "Green Loan" is to be considered as the Loan to be potentially issued, subject to the discretion of the Borrower/Guarantor. The name "Green Loan" has been decided by the Guarantor: it does not imply any opinion from Vigeo Eiris.

³ The 100% ownership is confirmed from the letter of certification issued by Malta Business Registry dated October 16th, 2019

⁴ The 15 controversial activities analysed by Vigeo Eiris are: Alcohol, Animal welfare, Chemicals of concern, Civilian firearms, Fossil Fuels industry, Coal, Tar sands and oil shale, Gambling, Genetic engineering, High interest rate lending, Military, Nuclear power, Pornography, Reproductive medicine and Tobacco.

⁵ 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.

- ▶ We reach a moderate assurance on MOL's existing capacity to integrate relevant ESG factors in its strategy and to account on them. Our assurance is moderate across the Environmental, Social and Governance pillars.
- ▶ As of today, MOL is facing 2 controversies related to the Business Behaviour domain (criteria "Anti-competitive practices"). The frequency of the controversies is considered occasional. The severity of their impact on both the company and its stakeholders is considered high. The MOL is considered overall reactive.
- ▶ MOL has a Minor involvement in Alcohol and a Major involvement in Fossil Fuels industry out of the 15 controversial activities analysed by Vigeo Eiris.

2) Loan (see Part II):

The Guarantor has described the main characteristics of the Loan within a formalized Green Loan Framework which covers the 4 core components of the GLP 2018 (the last updated version was provided to Vigeo Eiris on December 12th, 2019). The Guarantor has committed to make this document accessible to lenders, in line with market practices.

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

Use of Proceeds

- ▶ The net proceeds of the Loan will be used to 1) partly finance the construction of an 18,600cbm LNG bunkering vessel (Hull number H1817A) powered by a dual-fuel engine (the "Vessel") at Hudong Zhonghua Shipbuilding Co Ltd and scheduled for delivery in 2020 and 2) to refund some of the pre-delivery yard instalments already paid by the Borrower to the shipbuilder in relation to the Vessel. We consider the Eligible Project is clearly defined.
- ▶ The Eligible Project is intended to contribute to two main environmental objectives (climate change mitigation and pollution prevention). These objectives are formalized in the Framework and considered clearly defined and relevant for Pollution prevention, while partially relevant regarding Climate Change mitigation.
- ▶ The Eligible Project is considered to provide clear environmental benefits. The Guarantor has committed to assess and, as feasible, quantify the expected environmental benefits of the Loan issued.
- ▶ The Eligible Project is likely to contribute to one of the United Nations' Sustainable Development Goals ("SDGs"), namely : Goal 13. Climate Action.
- ▶ MOL has transparently communicated that there is no refinancing for its Loan issuance.

Process for Project Evaluation and Selection

- ▶ The governance and the process for the evaluation and selection of the Eligible Project is in the Framework. We consider that the process is reasonably structured, transparent and relevant.
- ▶ The process relies on explicit eligibility criteria (selection), relevant to the environmental objectives defined for the Eligible Category.
- ▶ The identification and management of the environmental and social risks associated with the Eligible Project are considered good.

Management of Proceeds

- ▶ The rules for the management of proceeds are clearly defined and will be formalised in the Green Loan facility agreement. We consider that they would enable a documented and transparent allocation process.

Reporting

- ▶ The reporting process and commitments for the funds allocation appear to be good, and partially good for the environmental benefits of the Eligible Project.
- ▶ The selected reporting indicators related to funds allocation and environmental benefits are relevant.

MOL has committed that its Green Loan 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 Loan, based on pre-issuance assessment and commitments, to be made publicly available on MOL's website⁷.

This Second Party Opinion is based on the review of the Framework and information provided by the Guarantor of the Loan, according to our exclusive assessment methodology and to the GLP 2018.

December 12th, 2019

Project team

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Disclaimer

Transparency on the relation between Vigeo Eiris and the Guarantor: Vigeo Eiris has executed one audit missions for MOL in July 2018 until so far. No established relationship (financial or other) exists between Vigeo Eiris and MOL.

This opinion aims at providing an independent opinion on the sustainability credentials and management of the Loan, based on the information which has been made available to Vigeo Eiris. Vigeo Eiris has neither interviewed stakeholders out of the Guarantor's employees, nor performed an on-site audit nor other test to check the accuracy of the information provided by the Guarantor. The accuracy, comprehensiveness and trustworthiness of the information collected are a responsibility of the Guarantor. Providing this opinion does not mean that Vigeo Eiris certifies the effectiveness, the excellence or the irreversibility of the assets to be financed by the Loan. The Guarantor 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 Loan, nor on the effective allocation of its 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 opinion is provided by Vigeo Eiris to the Guarantor and can only be used by the Guarantor. The distribution and publication are at the discretion of the Guarantor, submitted to Vigeo Eiris for approval.

⁷ <https://www.mol.co.jp>

DETAILED RESULTS

Part I. GUARANTOR OF THE LOAN

Mitsui O.S.K. Lines, Ltd (MOL) provides marine transportation, warehousing, and cargo handling services. It operates specialised carrier, oil tankers, and ferry. Items transported include coal, iron ore, grain, logs, aluminium, industrial salt, copper ore, wood chips, paper products, and other petroleum products and LPG. The Company was founded in 1884 and is headquartered in Tokyo, Japan.

Level of the Guarantor's ESG strategy.

We reach a moderate assurance on MOL's capacity to integrate relevant ESG factors in its strategy, and to account on them.

Domain	Comments	Opinion
Environment	<p>MOL's performance in the Environment pillar is considered moderate.</p> <p>MOL has formalised commitment to environmental protection in <i>MOL Group Environmental Vision 2030</i>, which details key items such as its medium to long-term GHG emission reduction targets, environmental management action plan and strategies for developing "Environment and Emission Free Businesses".</p>	Reasonable
	<p>MOL has set group-level targets for reduction of GHG emissions per transport unit by 25% by 2030 and by 50 % by 2050 compared to the fiscal year 2014. According to MOL's roadmap to achieve the targets, MOL is considering to use not only applicable technologies/projects at the present time but also new technologies that are proven to be economically feasible to achieve this goal. Moreover, MOL eyes the possibilities of offsetting GHG emission by developing "Environment and Emission Free Businesses" and promoting innovation.</p>	Moderate
	<p>MOL's Executive Committee directly oversees planning and promotion of environment-related measures as well as other CSR/ESG related issues. MOL assesses environment-related risks and opportunities involving the group, identifies the highest-priority issues in the group's environmental management, and sets environmental targets. The Company reports on its management of pollution such as water pollution, atmospheric emissions and oil leakage. However, it is noted that MOL does not seem to report on its management of other local pollution nor about the means it has allocated for this issue.</p>	Weak
Social	<p>MOL's performance in the Social pillar is considered moderate.</p> <p>MOL has a formal group policy on Human Resource and established global human resource development system. MOL became the first Japanese shipping company to participate in the United Nations Global Compact in 2005. MOL commits in its Code of Conduct to prevent human rights violations in society and prevent discrimination in the workplace. MOL also has a formalised commitment to promote health and safety of its employees, which is supported by comprehensive measures.</p>	Reasonable
	<p>Regarding responsible customer relations, MOL has issued a formalised commitment in its Rules of Conduct on responsible contractual agreements and/or the quality of the services delivered.</p> <p>Regarding vessel operation safety, MOL has formulated its Safety Standard Specifications since 2006, which are revised occasionally as necessary and cover issues such as the prevention of collision and grounding, fire, flooding and loss of stability, oil leakage at sea and environmental pollution, and workplace accidents, etc. MOL has also established the Safety Operation Supporting Center (SOSC) since 2007, which monitors all the vessels operated by MOL and provides assistance to all ship captains 24 hours a day, 365 days a year. In addition, MOL has training centres in eight locations in six countries. These training centres provide a variety of training, ranging from classroom lectures on theory to practice using real engines and various simulators.</p>	Moderate

	<p>As for community involvement, MOL has made references to promote local social and economic development. It provides various programmes globally, with the primal focus on the following three activities: educational activities on the importance of the shipping industry, addressing social issues through added values generated by transport, and support for disaster-stricken areas.</p> <p>However, MOL does not seem to disclose any commitment in relation to responsible management of reorganisations nor any measures to prevent and manage reorganisations. In addition, the Company has made references to career management and promotion of employability as well as the respect for freedom of association but does not seem to report on measures implemented in these regards.</p>	Weak
Governance	<p>MOL's performance in the Governance pillar is considered to be moderate. In comparison with other Japanese peers, MOL's performance is considered to be above average.</p> <p>In Vigeo Eiris' view, the overall Corporate Governance performance of Japanese companies is inferior to the performance of companies in other countries and regions. However, thanks to several public initiatives, such as Japan's Stewardship Code in 2014 and Japan's Corporate Governance Code in 2015, there are some upward trends of Japanese companies' performance.</p>	Reasonable
	<p>MOL's Corporate Governance performance is in tandem with these developments. MOL established the Nomination Advisory Committee and the Compensation Advisory Committee where external directors hold a majority which are voluntary and act as an advisory body to the Board. MOL's Board of Directors has three external directors, one of which is female, and these external directors occupy more than one-third of the board seats. A performance-based stock remuneration plan for directors and executive officers is also in place.</p>	Moderate
	<p>It is stipulated that CSR/ESG is one of items that is directly discussed at MOL's Executive Committee. MOL has identified key ESG issues in relation to SDGs and set mid-term CSR targets and action plans in its management plan. However, the Company's board of corporate auditors is considered to have a limited role in overseeing internal and external controls and does not seem to have integrated CSR risks in its overall strategy.</p>	Weak

Management of stakeholders-related ESG controversies

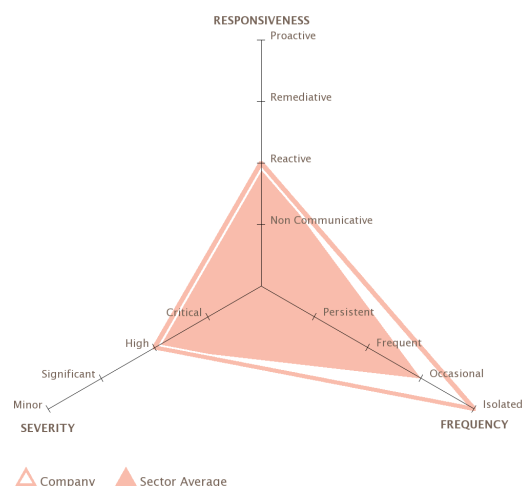
As of today, MOL is facing 2 stakeholders-related ESG controversies, linked to one of the six domains we analyse:

- Business Behaviour, in the criteria of "Anti-competitive practices".

Frequency: On average the frequency of controversies is considered isolated, which is better than the sector average (occasional).

Severity: The severity of both controversies are considered high, based on the analysis of their impact on the company and stakeholders.

Responsiveness: MOL is overall reactive. The Company is reactive on one case of high severity by reporting in a detailed way on its position, and non-communicative on the other case of high severity.



Involvement in controversial activities

Regarding the involvement in the 15 controversial activities analysed by Vigeo Eiris⁸, MOL has a Minor involvement in Alcohol and a Major involvement in Fossil Fuels industry.

- Alcohol: MOL has an estimated turnover from alcoholic beverages which is below 5% of total turnover. MOL operates the cruise ship Nippon Maru which sells alcoholic beverages onboard. Thus, MOL is considered to have a Minor involvement in this activity.
- Fossil Fuels industry: MOL has an estimated turnover from fossil fuels which is between 10-20% of total turnover. MOL is engaged in transportation services serving the fossil fuels industry. It reports these sales in its Dry Bulk segment (24% of 2019 revenue) which transports coking coal, iron ore and coal and in its Energy transport Business (23% of 2019 revenues) which transports other fossil fuels including crude oil and LNG tankers. MOL reports that its fossil fuels transportation tankers account for 36% of its total fleet capacity. Therefore, we have reasonably assumed that fossil fuels transportation sales account between 10 and 20% of the Company's revenues. Vigeo Eiris classifies these activities as 'Midstream'. Thus, MOL is considered to have a Major involvement in this activity.

MOL has no involvement in any of the other 13 controversial activities screened under Vigeo Eiris Methodology.

⁸ The 15 controversial activities analysed by Vigeo Eiris are: Alcohol, Animal welfare, Chemicals of concern, Civilian firearms, Fossil Fuels industry, Coal, Tar sands and oil shale, Gambling, Genetic engineering, High interest rate lending, Military, Nuclear power, Pornography, Reproductive medicine, and Tobacco.

Part II. LOAN

Coherence of the loan

Context note: According to the International Chamber of Shipping (ICS), the international shipping industry is responsible for the carriage of around 90% of world trade and has a lower impact in terms of GHG emissions per ton of freight transported compared to other transport solutions. However, 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 environment⁹. 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. Besides, the IMO will start to implement the 0.5% sulphur cap on marine fuel from January 1st, 2020 onwards.

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%¹⁰; 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%¹¹. 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 ships¹².

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 location⁸. 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 options⁸.

The operation of LNG bunkering vessels is subject to the requirements of the International Code of the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code), whose latest amendments¹³ is expected to enter into force on January 1st, 2020¹⁴; for LNG bunkering vessels using LNG, they are also required to comply with the International Code of Safety for Ships using Gases or other Low-flashpoint Fuels (IGF Code)¹⁵, which entered into force on January 1st, 2017. In addition, European Maritime Safety Agency also issued its Guidance on LNG Bunkering to Port Authorities and Administrations in 2018¹⁶.

We are of the opinion that the contemplated Loan is coherent with MOL's strategic sustainability priorities and sector issues, and it contributes to achieving the Guarantor's sustainability commitments.

MOL has a formalised commitment to environmental protection, namely MOL Group Environmental Vision 2030, in which key items such as the medium-long term GHG emissions reduction targets, environmental management action plan and strategies for developing "Environment and Emission Free Businesses" are addressed. MOL has set group targets for reduction of GHG per transport unit by 25% by 2030 and by 50 % by 2050 compared to fiscal year 2014. MOL states that these quantitative targets are aligned with a 2°C scenario. In addition, these targets are considered to contribute to the International Maritime Organization strategy to reduce the greenhouse gas emissions of ships adopted on April 13th, 2018.

To achieve these goals, MOL's Environmental Management Action Plan has identified 8 key action areas in March 2017, one of which is to "*participate in projects to build vessels that run on alternative fuels such as LNG and supply alternative fuels*". By obtaining the Loan, MOL will partly finance the construction of an 18,600cbm LNG bunkering

⁹ https://www.wwf.at/de/view/files/download/showDownload/?tool=12&feld=download&sprach_connect=2395, page 1

¹⁰ <http://www.imo.org/en/OurWork/Environment/PollutionPrevention/AirPollution/Documents/LNG%20Study.pdf>, page 117, 122 & 142

¹¹ <https://www.itf-oecd.org/sites/default/files/docs/decarbonising-maritime-transport.pdf>, page 34

¹² <http://www.ics-shipping.org/docs/default-source/key-issues-2018/developing-zero-co2-fuels.pdf?sfvrsn=0>, page 1

¹³ <http://www.imo.org/en/KnowledgeCentre/IndexofIMOResolutions/Maritime-Safety-Committee-%28MSC%29/Documents/MSC.411%2897%29.pdf>

¹⁴ <http://www.imo.org/en/About/Conventions/Pages/Action-Dates.aspx>

¹⁵ [http://www.imo.org/en/KnowledgeCentre/IndexofIMOResolutions/Maritime-Safety-Committee-\(MSC\)/Documents/MSC.391\(95\).pdf](http://www.imo.org/en/KnowledgeCentre/IndexofIMOResolutions/Maritime-Safety-Committee-(MSC)/Documents/MSC.391(95).pdf)

¹⁶ <http://www.emsa.europa.eu/news-a-press-centre/external-news/download/5104/3207/23.html>

vessel (Hull number H1817A) powered by a dual-fuel engine. This Eligible Project is considered to contribute to climate change mitigation and towards achieving the above-mentioned quantitative targets.

Use of proceeds

The net proceeds of the Loan will be used to 1) partly finance the construction of an 18,600cbm LNG bunkering vessel (Hull number H1817A) powered by a dual-fuel engine (the “Vessel”) at Hudong Zhonghua Shipbuilding Co Ltd and scheduled for delivery in 2020 and 2) to refund some of the pre-delivery yard instalments already paid by the Borrower to the shipbuilder in relation to the Vessel. We consider the Eligible Project is clearly defined.

The Eligible Project is intended to contribute to two main environmental objectives (climate change mitigation and pollution prevention). These objectives are formalized in the Framework and considered clearly defined and relevant for Pollution prevention, while partially relevant regarding Climate Change mitigation.

The Eligible Project is considered to provide clear environmental benefits. The Guarantor has committed to assess and, as feasible, quantify the expected environmental benefits of the Loan issued.

MOL has transparently communicated that there is no refinancing for its Loan issuance.

MOL Framework			Vigeo Eiris Analysis
Eligible Category	Definition of the Eligible Project	Objectives and benefits	
LNG bunkering vessel	<p>Financing of the construction of an 18,600m³ LNG bunkering vessel¹⁷ (Hull number H1817A) powered by a dual-fuel engine:</p> <ul style="list-style-type: none"> The construction of the Vessel will take place at Hudong Zhonghua Shipbuilding Co Ltd and is scheduled for delivery in 2020; The Vessel will be deployed in the port of Rotterdam under a 12-year time charter; The Vessel will primarily refuel CMA-CGM's 22,000 TEU LNG-powered containerhips; The Vessel is fitted with a Mark III LNG membrane containment system provided by the French company GTT; The Vessel will use LNG as the main fuel and with complete re-liquefaction of the boil-off gas. 	<p>Air pollution prevention</p> <p>---</p> <p>Reduce SO_x and NO_x emissions, compared to vessels using high sulphur fuel oil (HSFO)</p> <p>Climate change mitigation</p> <p>---</p> <p>Reduce/avoid CO₂ emissions, compared to vessels using high sulphur fuel oil (HSFO)</p>	<p>The <u>definition</u> of the Eligible Category/Project is clear.</p> <ul style="list-style-type: none"> The Time Charter Party (TCP) was signed between the Charterer and Emerald Green Maritime Limited (EGM, a special purpose company 100% owned by MOL) on February 5th, 2018. EGM is defined as the owner of the LNG bunkering vessel (Hull number H1817A) as guaranteed by MOL. The shipbuilder is confirmed to be Hudong Zhonghua Shipbuilding Co Ltd. Under a time charter for bunkers, the Charterer is responsible for the commercial operation of the vessel including the provision of bunkers and will pay the costs of the bunker to the bunker supplier. The Charterer has issued an official letter signed by its Financing Director dated November 14th, 2019, which clearly states its intention to use LNG as the sole fuel for the main engine of the LNG bunkering vessel. Thus, it is confirmed that for the LNG bunkering vessel itself, there is clear commitment to use LNG as the primary fuel. In addition, as confirmed by MOL, the LNG bunkering vessel will only be performing short and predictable refuelling trips within the vicinity of the port of Rotterdam. <p>The Eligible Project is intended to contribute to two <u>main environmental objectives</u> (air pollution prevention, and climate change mitigation), which is considered clearly defined but partially relevant:</p> <ul style="list-style-type: none"> <u>Air pollution prevention</u>: Fossil fuels is an important source of other atmospheric emissions of pollutants and particles. According to the International Maritime Organisation (IMO), from January 1st, 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). Therefore, the "air pollution prevention" objective claimed by the Guarantor is relevant. <u>Climate change mitigation</u>: 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 industry¹⁹. However, while individual measures such as LNG can deliver a significant reduction on 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 levels²⁰.

¹⁷ LNG bunkering vessel is a vessel that is dedicated to supply LNG to LNG-fuelled vessels at sea.

¹⁹ <https://www.itf-oecd.org/sites/default/files/docs/decarbonising-maritime-transport.pdf>, page 25 & 32-34

²⁰ According to studies done by IMO (2016) and industry coalition such as SEALNG, the GHG emission reduction potential of LNG compared to conventional oil-based fuels ranges from 10-25%.

MOL Framework			Vigeo Eiris Analysis
Eligible Category	Definition of the Eligible Project	Objectives and benefits	
			<p>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 long term. Therefore the “climate change mitigation” objective claimed by the Guarantor is partially relevant.</p> <p>The Eligible Project is considered to provide clear <u>environmental benefits</u>. MOL has committed to assess and, where feasible, quantify the expected environmental benefits of the Loan.</p> <ul style="list-style-type: none"> - For the LNG bunkering vessel itself, the Charterer has issued an official letter which clearly states its intention to use LNG as the sole fuel for the main engine of the LNG bunkering vessel; - For the supply of LNG to other vessels by this bunkering vessel, the environmental benefits associated with the use of LNG instead of HSFO is clear; and - The Framework provided the ex-ante estimation that in case of fully running on LNG, the Vessel’s CO₂ emissions will be reduced by 25%; SO_x emissions by 99% and NO_x emissions by 80% compared to HSFO usage, which are confirmed reasonable based on ranges given by studies from IMO and ITF. <p><u>Reduction of SO_x and NO_x emissions:</u></p> <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 LNG²¹, delivering a clear environmental benefit. It is also confirmed from the product guide of the specific engine (Wartsila 8L20DF) used by the Vessel that NO_x emissions are very low²².

²¹ http://production.presstogo.com/fileroot7/gallery/dnvgf/files/original/124feddb807045969b3071a55f73c80b/124feddb807045969b3071a55f73c80b_low.pdf, page 33

²² https://www.wartsila.com/docs/default-source/product-files/engines/df-engine/product-guide-o-e-w20df.pdf?utm_source=engines&utm_medium=dfengines&utm_term=w20df&utm_content=productguide&utm_campaign=msleadscoring, section 13.1

MOL Framework			Vigeo Eiris Analysis
Eligible Category	Definition of the Eligible Project	Objectives and benefits	
			<p><u>Reduction of GHG emissions:</u></p> <ul style="list-style-type: none"> - MOL, in its Framework, refers to a 15% reduction of GHG emissions compared to conventional oil-based fuels, contributing to its long-term group-level target of reducing GHG emissions per transport unit by 25% by 2030 and by 50% by 2050 compared to fiscal year 2014. It would also contribute to IMO's targets of GHG emissions reduction by 2050 compared to 2008. - The reduction of GHG emissions by switching to use LNG as the ship fuel would still be considered not sufficient to meet IMO's 2050 target of reducing the sector's GHG emissions by at least 50% compared with 2008 levels.

In addition, the Eligible Project is likely to contribute to one of the United Nations' Sustainable Development Goals ("SDGs"), namely : Goal 13. Climate Action.

Eligible Project	UN SDGs identified	UN SDGs targets
LNG bunkering vessel	SDG 13. Climate Action	



UN SDG 13 consists in taking urgent action to combat climate change and its impacts. Companies. Companies promoting sustainable agriculture can contribute to GHG mitigation through avoiding deforestation, reducing GHG emissions linked to the production process and to energy consumption.

Process for Project Evaluation and Selection

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

MOL's process for project evaluation and selection is clearly defined and has been formalised below during our due diligence process.

The evaluation and selection process of the Eligible Project is based on relevant internal expertise with well-defined roles and responsibilities, and has been carried out as below:

- MOL's internal evaluation and selection of candidate Green Projects relies on a set of selection and evaluation criteria that is based on MOL's formalised commitment such as MOL Group Environmental Vision 2030, its group-level GHG emission reduction target, Environmental Management Action Plan and etc., as well as GLP's broad categories of Green Projects.
- The shipbuilding contract of the Vessel was signed between EGM and Hudong Zhonghua Shipbuilding Co Ltd (i.e. the shipyard) in February 2018.
- The Commercial and Technical divisions reviewed the track records of Hudong Zhonghua Shipbuilding and its compatibility with LNG-fuelled containerships built at the same location.
- The "New & Clean Energy Business Division" (i.e. MOL's environmental business division), along with the Technology Innovation Unit (led by the Chief Technical Officer), verified and confirmed the appropriateness and qualification of the project in May 2018.
- Following receipt of the candidate project proposal and above-described internal assessments, the CFO granted the final approval to select this Vessel as a Green Project in August 2018.

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

- The Eligible Project is selected following the steps of project evaluation and selection describe above.
- Relevant documentation and reporting in these steps are ensured by MOL internal processes.

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

- The selection is based on the Eligible Category defined in the Use of Proceeds section of the Framework.
- There is no exclusion criteria, as the net proceeds will exclusively finance the construction of the LNG bunkering vessel.

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

As general practices at the group level, the Executive Committee of MOL directly oversees planning and promotion of environment-related measures. MOL assesses environmental and social risks and opportunities in relation to the

company, identifies the high-priority issues in the group's CSR management process, and sets targets. These activities also cover environmental and social risks for this Eligible Project.

Environmental risks

- As for eco-design of vessels, MOL has been making efforts toward safer vessels operation and technologies for reducing environmental impacts on a continuous basis. It commits to develop and adopt technologies (such as ballast water treatment system, etc.) to minimize the impact of its vessels (including the Eligible Project) on the environment and biodiversity.
- MOL has established its internal environmental management system MOL EMS21 since 2001 and obtained ISO14001 certification, which covers all the vessels that it operates including the Eligible Project. The current ISO14001 certificate is checked, which is valid from January 30th, 2018 to January 30th, 2021. As confirmed from the TCP, the owner of the vessel (i.e. EGM) is also obligated to operate a documented environmental management system and submit a monthly written report on all environmental reporting requirements to the Charterer. Detailed clauses on Health, Security and Environment (HSE) (including compliance, relevant standards and reporting requirements, etc.) are included in the TCP.
- The Vessel is fitted with a Kongsberg Integrated Automation System²³ to monitor the overall performance of the vessel. MOL also uses the DNV GL system to monitor and record fuel consumption by the Vessel. These data together help ensure the normal and efficient operation of the Vessel.
- For risk associated with potential LNG leakage, MOL confirms that the bunkering vessel is fitted with GTT Membrane Flex+ which is claimed to have better insulation compared to previous technologies²⁴. The Vessel is also equipped with a Gas Detection System on board to meet the requirement of the IGC Code for detecting any leakage.
- Regarding other accidental pollution (such as oil leaking, etc.), MOL implements the “Four Zeroes” policy (*zero serious marine incidents, zero oil pollution, zero fatal accidents, and zero serious cargo damage*), and avoids and controls such risks by implementing the safety management systems and training of operational personnel as well as monitoring ship movement 24/7.
- Regarding end-of-life impacts of the vessel, MOL commits to address appropriate ship recycling in accordance with the IMO Hong Kong Convention. MOL has an internal rule to conduct ship recycling at yards which are in conformity with the Hong Kong Convention and verified by ClassNK (i.e. Nippon Kaiji Kyokai, a ship classification society).

Social Risks

- MOL has an Operational Safety Committee, chaired by the president. The committee meets bimonthly to deliberate basic policies, countermeasures, and other items related to secure and completely safe operation of MOL Group as a whole. Key performance Indicators (KPIs) such as “Four Zeroes”, downtime per ship, incidents per ship resulting in stoppage, Lost Time Injury Frequency are set. In 2019, “Development of Groupwide safety and quality management” was added as a new focus area to promote the adoption of the world’s highest standards for safe operation.
- For the ship construction, MOL continually strives to maintain and improve the quality of all MOL Group-operated vessels in cooperation with shipowners and shipbuilding companies and has formulated “MOL Safety Standard Specifications” since 2006. As per the TCP for the LNG bunkering vessel, the vessel is required to be designed, constructed, equipped and tested by the shipyard in accordance with the requirements agreed on between MOL and the Charterer. MOL also ensures that the shipbuilder and its subcontractors shall identify environmental hazards and risks to the health, safety and security of any worker, and implement safety management systems to control and manage risks.
- MOL has implemented a range of measures to improve the quality of both working and employment conditions. Under the TCP arrangement, MOL LNG Transport Europe (a subsidiary of the MOL Group) is the ship manager of the LNG bunkering vessel and direct employer of the ship’s crew. MOL LNG Transport Europe is compliant with the International Management Code for the Safe Operation of Ships and for Pollution Prevention (ISM Code)²⁵ and adheres to all IMO Conventions. All the seafarers are certified in accordance with the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW)²⁶ and are required to operate the vessel according to MOL’s Safety Management

²³ <https://www.kongsberg.com/maritime/products/engines-engine-room-and-automation-systems/automation-safety-and-control/?OpenDocument>

²⁴ https://www.gtt.fr/sites/gtt/files/lng_may18_containment_systems.pdf

²⁵ <http://www.imo.org/en/OurWork/HumanElement/SafetyManagement/Pages/ISMCode.aspx>

²⁶ [http://www.imo.org/en/About/Conventions/ListOfConventions/Pages/International-Convention-on-Standards-of-Training,-Certification-and-Watchkeeping-for-Seafarers-\(STCW\).aspx](http://www.imo.org/en/About/Conventions/ListOfConventions/Pages/International-Convention-on-Standards-of-Training,-Certification-and-Watchkeeping-for-Seafarers-(STCW).aspx)

System, which is regularly audited and updated. In addition, MOL published its latest "Modern Slavery Statement" pursuant to Section 54 (1) of the UK Modern Slavery Act 2015.

- Regarding the safety during the Vessel's bunkering operation under the 12-year TCP with the Charterer, it is ensured through the implementation of MOL's Safety Management System, employment of STCW competent seafarers and the compliance with all relevant IMO Conventions. As confirmed from the TCP, the safety management system is required to be certified to comply with the ISM Code, and the owner of the vessel (i.e. EGM) is obligated to operate a documented safe working procedures system (including procedures for identification and mitigation of risks) and a documented accident/incident reporting system, and also submit a monthly written report on all accidents/incidents to the Charterer. Detailed clauses on Health, Security and Environment (HSE) (including compliance, relevant standards and reporting requirements, etc.) are included in the TCP.
- Regarding responsible relations with contractors and suppliers, MOL has established its group-level Basic Procurement Policy, in which vessel procurement is an important part. MOL asks shipbuilding contractors to incorporate specifications compliant with the MOL Safety Standard Specifications, which prescribe the company's safety and environmental quality standards. In addition, MOL also dispatches ship construction superintendents from MOL Group companies to supervise the shipbuilding process, and collaborates with shipbuilders to develop and introduce eco-friendly ships.

Areas for improvement include:

- To integrate the requirements related to the respect of fundamental human rights and labour rights in agreements and contracts with contractors and suppliers;
- To have clear commitment and specific controls in place to ensure the respect of labour rights such as freedom of association and right to collective bargaining.

Management of proceeds

The rules for the management of proceeds are clearly defined and will be formalised in the Green Loan facility agreement. We consider that they would enable a documented and transparent allocation process.

The allocation of funds to Eligible Project will be appropriately tracked, managed and recorded by the Finance Division as follows:

- Finance Division is responsible for the management of proceeds. The net proceeds of the Green Loan will be managed by the Finance Division through the internal control systems.
- The net proceeds will be fully drawn upon Vessel delivery which is scheduled to be in 2020, and immediately applied towards 1) the reimbursement of pre-delivery instalments paid by the Borrower to the shipyard during the construction of the Vessel, and 2) payment of the remaining amount of the ship building contract to the shipyard.
- The allocation of the net proceeds follows the standard practice in shipping finance, by providing supporting documents such as invoices from the shipyard before the Lenders proceed with the drawdown. As a result, it is expected that there will be no unallocated funds.
- In case of delay in delivery of the Vessel according to a pre-agreed timeframe, the loan will be cancelled and not drawn.

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

- The proceeds will be managed and tracked by MOL and the Lender.
- The drawdown of the loan proceeds will proceed only with the provision of required supporting documents such as invoices from the shipyard, as per standard practices in shipping finance.
- The checking of required supporting documents for drawdown serves as part of verification of the allocation of the proceeds.

Monitoring & Reporting

The reporting process and commitments for the funds allocation appear to be good, and partially good for the environmental benefits of the Eligible Project.

The processes for monitoring, data collection, consolidation, validation and reporting are clearly defined by the Guarantor.

One of the main monitoring parameters is the quantity of LNG consumed and supplied. It is understood that the LNG bunkering vessel will be equipped with a monitoring software which gives MOL's Ship Management team the remote access to almost real-time data on the quantity of LNG consumed and supplied. In addition, as standard procedure, the Vessel will have a daily report on the Vessel's performance including LNG consumption.

The reporting process is based on relevant internal expertise including the Finance Division and New & Clean Energy Business Division. MOL has an established system to monitor the situation of vessels in operation, which is able to ensure appropriate data collection and consolidations.

Both the proceeds' allocation metrics and the metrics related to environmental benefits of the project will be reported by the Finance Division to the Lenders on an annual basis until the Green Loan matures.

The selected reporting indicators related to the funds allocation and environmental benefits are relevant to the Eligible Project. The Guarantor commits to report, at project level, on:

- Allocation of proceeds: the selected reporting indicator is relevant.

Reporting indicators	
-	Confirmation of Vessel's delivery date and full drawdown of the Green Loan

- Environmental benefits: the selected reporting indicators are relevant.

Eligible category	Environmental benefits indicators
	Outputs and outcomes and Impact Indicators
LNG bunkering vessel	<ul style="list-style-type: none"> - GHG emission (mt/year) - GHG emission reduction (%) compared to HSFO vessels - CO₂ emission reduction (%) compared to HSFO vessels - NO_x emission reduction (%) compared to HSFO vessels - SO_x emission reduction (%) compared to HSFO vessels

In addition, the Guarantor commits to report on:

- Amount of LNG supplied by the Vessel (cbm/year)
- Share of LNG consumption vs. LSMGO consumption of the Vessel (%)
- Any material developments relating to the Green Loan and the Vessel, including in case of ESG controversies and/or Vessel's modification.

The Guarantor commits that the key methodologies and assumptions used to calculate the benefits of the Eligible Project refer to the IMO's "Studies on the feasibility and use of LNG as a fuel for shipping" (2016)²⁷ and the calculation will be MOL's technical department.

An area for improvement includes: to have an independent external reviewer to verify the reported information on the environmental benefits measured.

²⁷ <http://www.imo.org/en/OurWork/Environment/PollutionPrevention/AirPollution/Documents/LNG%20Study.pdf>, Section 9.5

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 Guarantor'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 our generic Transport & Logistics sector's ESG assessment frameworks and on specific issues considering the Guarantor'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 Ethics, and all consultants have also signed its add-on covering financial rules of confidentiality.

Part I. GUARANTOR OF THE LOAN

NB: The Guarantor's integration of ESG factors in its strategy has not been assessed through a complete process of rating and benchmark developed by Vigeo Eiris. The assessment of the Guarantor's ESG strategy has focused only on the Leadership item from Vigeo Eiris' ESG rating methodology (see below).

Level of the Guarantor's ESG strategy.

The Guarantor has been evaluated by Vigeo Eiris on its Corporate Social Responsibility (CSR) strategy based on relevant ESG drivers organized in 6 sustainability domains. The Guarantor's strategy has been assessed by Vigeo Eiris based on its Leadership: relevance of the commitments (content, visibility and ownership).

Scale for assessment of ESG strategy: reasonable, moderate, weak.

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 a Guarantor on corporate responsibility issues. Such allegations can relate to tangible facts, be an interpretation of these facts, or constitute an allegation on unproven facts.

Vigeo Eiris reviewed information provided by the Guarantor, 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 they are 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 a Guarantor 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

15 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 precise nature of the controversial products or services provided by the company.

Part II. LOAN

The Framework has been evaluated by Vigeo Eiris according to the 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 Project and its sustainable objectives and benefits are a core element of Green Loan or Loan 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 Project 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 Project. The identification and management of the ESG risks associated with the Eligible Project 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 regarding their transparency, coherence and efficiency.

Reporting

Monitoring process and commitments, reporting commitments, reporting indicators and methodologies are defined by the Guarantor to enable a transparent reporting on the proceeds allocation and tracking, on the sustainable benefits (output and impact indicators) and on the responsible management of the Eligible Project 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.		



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 Loan, corporate ratings, CSR evaluations and more).

Vigeo Eiris is committed to delivering MOL 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 Loan 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, Milan, Montreal, Hong Kong, Casablanca, Rabat and Santiago.

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