Second-Party Opinion
Seaspan Sustainability-Linked Bond

Evaluation Summary

Sustainalytics is of the opinion that the Seaspan Sustainability-Linked Bond aligns with the Sustainability Linked Bond Principles 2020 and considers the Key Performance Indicator (KPI) to be relevant and material to the issuer and the Sustainability Performance Target (SPT) to be impactful and moderately ambitious. This assessment is based on the following:

Selection of Key Performance Indicators (KPIs) Seaspan has selected one KPI – the aggregate financial value of binding commitments towards vessel acquisitions, newbuildings, and vessel retrofits, which can be powered by Alternative Fuel Sources – for its Sustainability Linked Bond (SLB). This KPI measures the dollars spent on upgrading and acquiring ships that have the ability to run on alternative fuels. Alternative fuels are defined as those with lower carbon emissions than conventional technologies; Sustainalytics has assessed the potential fuel options cited in the Framework and anticipates reductions could range from up to 25% for LNG to near 100% for some other alternative fuels. Sustainalytics considers the KPI chosen to be relevant and material for Seaspan and considers the KPI to be clear with regards to its objectives, while noting the wide variety of potential applications and the fact that it is not a direct measure of sustainability outcomes.

Calibration of Sustainability Performance Targets (SPTs) Seaspan has established an SPT related to its qualifying expenditures. At the end of three years from the date of issuance of the Bond, Seaspan has set the target to have binding commitments for a minimum of USD 200 million on such upgrades and acquisitions. Sustainalytics considers the SPT to be moderately ambitious and aligned with the issuer's sustainability strategy.

Bond Characteristics Seaspan has disclosed that its SLB will contain the characteristics of a conventional bond, with the added clause that failure to achieve its SPT will result in the Company paying a penalty of 0.5% (50 basis points) on the principal payment upon maturity. Sustainalytics highlights that the bond structure is binary, contains only a potential negative adjustment, and is aligned in magnitude with other sustainability-linked bonds in the market.

Reporting Seaspan commits to report on an annual basis on its performance on the KPI against the SPT. The company will publish an annual Sustainability-Linked Bond Performance Report, which will contain up-to-date information on its KPI performance as well as examples of investments undertaken during the year. Sustainalytics finds this to be in line with the market expectations.

Verification Since the KPI is a measurement of the Company's expenditure and investment, it is captured within the Company's financial statements. Seaspan has committed that its spending on retrofitting and purchasing upgraded ships will be verified annually by an external auditor or other third-party reviewer, until the maturity of the bond. This is in line with market expectations.

Evaluation date	January 18, 2021
Issuer Location	Hong Kong, China Vancouver, Canada

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Introduction

Seaspan Corporation (Seaspan, the "Company", or the "Issuer") is the largest independent containership lessor in the world. Seaspan charters vessels primarily on long-term, fixed-rate time charters to the world's largest container shipping companies and counts on an operating fleet of 127 containerships. Headquartered in Hong Kong, with global offices Vancouver and Mumbai, the Company has approximately 5,000 employees globally.

Seaspan intends to issue a Sustainability-Linked Bond (SLB) in January 2021 where the principal amount due on maturity of the bond is tied to the achievement of a pre-defined Sustainability Performance Target (SPT) measured by the Key Performance Indicator (KPI) – the aggregate financial value of binding commitments towards vessel acquisitions, newbuildings, and vessel retrofits, which can be powered by Alternative Fuel Sources. The KPI measures Seaspan's investment in upgraded as well as newly-built vessels that have the capability to run on alternative and/or low-carbon fuel sources. The KPIs pertains to Seaspan's capital expenditure over a period starting from the issuance of the bond, with the principal amount adjustment occurring after three years.

Seaspan has engaged Sustainalytics to review the SLB and provide an opinion on the alignment of the bond with the Sustainability-Linked Bond Principles (SLBP).[1]

Scope of work and limitations

Sustainalytics' Second-Party Opinion reflects Sustainalytics' independent[2] opinion on the alignment of the reviewed SLB with the Sustainability Linked Bond Principles 2020, as administered by ICMA. As part of this engagement, Sustainalytics exchanges information with various members of Seaspan's management team to understand the sustainability impact of their business processes and SPTs, as well as reporting and verification processes of aspects of the SLB. Seaspan representatives have confirmed that:

(1) They understand it is the sole responsibility of Seaspan to ensure that the information provided is complete, accurate or up to date;
(2) They have provided Sustainalytics with all relevant information; and
(3) Any provided material information has been duly disclosed in a timely manner.

Sustainalytics also reviewed relevant public documents and non-public information. This document contains Sustainalytics' opinion of the Bond and should be read in conjunction with the Bond Documents. Any update of the present Second-Party Opinion will be conducted according to the agreed engagement conditions between Sustainalytics and Seaspan. Sustainalytics' Second-Party Opinion, while reflecting on the alignment of the Bond with market standards, is no guarantee of alignment nor warrants any alignment with future versions of relevant market standards. Furthermore, Sustainalytics' Second-Party Opinion addresses the anticipated SPTs of KPIs but does not measure the KPIs. The measurement and reporting of the KPIs is the responsibility of the Bond issuer. No information provided by Sustainalytics under the present Second-Party Opinion shall be considered as being a statement, representation, warrant or argument either in favor or against, the truthfulness, reliability or completeness of any facts or statements and related surrounding circumstances that Seaspan has made available to Sustainalytics for the purpose of this Second-party Opinion.

[1] The Sustainability Linked Bond Principles (SLBP) were launched by ICMA in June 2020. They are administered by the ICMA and are available at: https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/June-2020/Sustainability-Linked-Bond-PrinciplesJune-2020-100620.pdf

[2] When operating multiple lines of business that serve a variety of client types, objective research is a cornerstone of Sustainalytics and ensuring analyst independence is paramount to producing objective, actionable research. Sustainalytics has therefore put in place a robust conflict management framework that specifically addresses the need for analyst independence, consistency of process, structural separation of commercial and research (and engagement) teams, data protection and systems separation. Last but not the least, analyst compensation is not directly tied to specific commercial outcomes. One of Sustainalytics' hallmarks is integrity, another is transparency.

Sustainalytics' Opinion

Section 1: Sustainalytics' Opinion on the Alignment of Seaspan's Sustainability-Linked Bond with the Sustainability-Linked Bond Principles.

Sustainalytics is of the opinion that the Sustainability-Linked Bond aligns with the five core components of the Sustainability-Linked Bond Principles 2020 (SLBP). The KPI and SPT used by Seaspan are defined in Tables 1 and 2 below.

Table 1: KPI definitions

KPI	Definition
The aggregate financial value of binding commitments towards vessel acquisitions, newbuildings, and vessel retrofits, which can be powered by Alternative Fuel Sources	Seaspan's investment, measured in USD, in upgraded as well as newly-built vessels that have the capability to run on alternative fuel sources. Alternative fuel sources are intended to result in lower-carbon emissions than comparable conventional fuel sources. Liquified natural gas, bio- or electro-methane, hydrogen, biodiesel, liquified petroleum gas (LPG), and ammonia are cited by the Framework as examples of low-carbon/alternative fuels.

Table 2: SPTs and Past Performance

KPI	Historic annual spent	SPT 2023
The aggregate financial value of binding commitments towards vessel acquisitions, newbuildings, and vessel retrofits, which can be powered by Alternative Fuel Sources	No amount has been spent on retrofitting or acquiring alternative fuel vessels historically	USD 200 Million (cumulative spend over first three years after issuance of bond)

1) Selection of Key Performance Indicators (KPIs)

Definition and methodology of KPIs

- Seaspan's Sustainability-Linked Bond include one KPI:
  - Seaspan's KPI, the aggregate financial value of binding commitments towards vessel acquisitions, newbuildings, and vessel retrofits, which can be powered by Alternative Fuel Sources, measures the Company's investments and expenditures to upgrade and acquire vessels that have the capability to run on alternative or low-carbon fuels. Seaspan defines alternative fuel sources as 'a fuel source that emits less CO_2 than a conventional fuel. Liquified natural gas (LNG), bio- or electro-methane, hydrogen, biodiesel, liquified petroleum gas (LPG), and ammonia are cited by the Framework as examples of low-carbon/alternative fuels.
    - Sustainalytics is of the opinion that Seaspan's KPI is clear, measurable and externally verifiable, while noting some ambiguity related to the magnitude of environmental impact associated with it, which will depend on the fuel selected. Sustainalytics notes that LNG has the potential to achieve emissions reductions of up to 25% compared to conventional fuels; that biofuels provide a range of reductions which could, in theory, reach 100%; and that hydrogen and hydrogen-derived fuels may provide near-100% reductions depending on the source of energy inputs.
  - Sustainalytics notes the following with respect to the specific fuel types cited in the Framework:
    - The Issuer has disclosed that the likely initial expenditures or investments it makes will be to acquire vessel(s) with high-pressure, dual-fuel engines that will run primarily on LNG (where infrastructure allows) in combination with a pilot fuel, which is intended to be low-sulphur heavy fuel oil, ultra-low sulphur fuel oil, or marine gas oil. LNG is recognized as having lower emissions than conventional fuels, and is anticipated to be a key part of the shipping sector's transition. Refer to section 3 for further discussion of LNG technology.

        - LPG, primarily a mixture of propane, butane and other light hydrocarbons, is cited in the Framework as one of the alternative fuel options defined in the Framework. LPG has higher CO_2 emissions than LNG during combustion due to its carbon content, even though LPG is sulphur-free and offers significant reductions of nitrous oxide (NO_x) and particulate matter. While acknowledging this limitation, Sustainalytics recognizes the potential for LPG to act as a bridge to low-carbon fuel sources, notably ammonia, since the installation of LPG systems in a ship may be suitable for future conversion to these fuels.
    - Seaspan has communicated to Sustainalytics that dual-fuel vessels will be chartered and, as a result, Seaspan has limited or no control over the speed and fuel of the vessels. However, as per Seaspan's communication with its clients and the fact that the cost of the upgrade or acquisition of dual-fuel vessels will be reflected in the charter cost, Seaspan anticipates that the charterers will make use of the alternative fuel technology.
    - Seaspan's planned investments relate to onboard use of alternative fuels. While uptake of some of these fuels faces additional constraints related to bunkering, storage and safety features, in particular hydrogen or ammonia, these challenges are out of scope of this program. Sustainalytics notes that these future considerations will be crucial to transition to low-carbon fuels for the company and the industry as a whole.

- Seaspan's methodology to calculate KPI:
    - The KPI is a summation of the cost incurred or amount invested (in USD) by Seaspan in order to upgrade and acquire vessels that have the ability to run on lower-carbon emissions fuel, including dual-fuel vessels, over the three-year period from the issuance of the bond (2020) to the maturity date (2023).

Relevance and Materiality of KPI

- Sustainalytics considers the issue that the KPI addresses to be a relevant, core and material issue for Seaspan.
    - Sustainalytics notes that the KPI is based on expenditure, not a sustainability metric. While expenditures on qualifying vessels are anticipated to deliver environmental benefits, this is not measured directly by the KPI.
    - Sustainalytics identifies risks from emissions, effluents and waste as one of the most material issues to which companies in the shipping sector are exposed. The International Maritime Organization (IMO) and many countries are beginning to further tighten carbon emission thresholds for the shipping industry.[3] To comply with the changing regulations means companies must be prepared to make costly upfront investment such as installing scrubbers in vessels, purchasing relatively less emissions-intensive fuels and converting systems to provide the capability to run on such fuels.
    - Apart from the kind of fuel used, a ship's emissions can depend to a large extent on several factors relating to its daily operation and maintenance such as voyage speed optimization, trim and draught management, maintenance of its engines, hull, bulbous bow, propellers, scrubber systems etc. Seaspan is, however, a containership lessor, leasing 100% of its fleet, and therefore it has little or no control over the vessel's speed and trade routes. Therefore, due to Seaspan's business model, the most material ways for the Company to drive environmental impact is to improve physical factors relating to efficiency (such as cargo loadability or design efficiency) and to equip its vessels with systems that enable them to run on alternative or low-carbon fuels.

- Sustainalytics recognizes that, in the short term, the decarbonization of the shipping sector will rely upon the use of LNG as a lower-carbon fuel source, as part of an eventual transition to carbon neutrality. Seaspan has disclosed that the first contributions to its KPI will likely take the form of LNG or dual-fuel ships.
    - IMO anticipates a sharp growth in emissions from the international shipping sector and hence in 2018 adopted emissions reduction targets (refer to section 3). Sustainalytics views LNG as a transition fuel for the shipping industry given that the commercial development and scale of truly low-carbon fuels are limited in scope and availability.[4] It is estimated that, compared to traditional fuels such as heavy fuel oil, LNG enables up to 25% reduction in CO_2 emissions on tank-to-wheel basis when burned in a high-pressure injection fuel engines, given low methane slip throughout the supply chain and during combustion within the ship engine; up to 40% reduction in NO_x in new ships;

[3] European Commission, Reducing emissions from the shipping sector, accessed in September 2020, at: https://ec.europa.eu/clima/policies/transport/shipping_en
[4] Shell, Decarbonization shipping: All hands on deck https://www.shell.com/energy-and-innovation/the-energy-future/decarbonising-shipping/_jcr_content/par/toptasks.stream/1594141914406/b4878c899602611f78d36655ebff06307e49d0f8/decarbonising-shipping-report.pdf

and close to 100% reduction in SO_x and particulate matter.[5] However, it is acknowledged that the shipping industry must make rapid progress related to the uptake of low-carbon fuels such as hydrogen, ammonia and methanol in order to enable a decarbonization trajectory that is aligned with a credible and climate-aligned transition.

Ability to be benchmarked
The selected KPI is the measure of Seaspan's investment and expenditure in upgrading its existing fleet and acquiring new vessels that have the capability to run on alternative fuel. Although this KPI is a measure of financial expenditures, it is directly related to the number of new and refurbished low-carbon ships introduced to Seaspan's fleet. While noting the difficulties in directly comparing levels of investment, Sustainalytics considers the number of ships to be well-suited for comparison to both Seaspan's existing fleet as well as industry-wide trends in ship technology, and the selected KPI to therefore able to be suitably benchmarked.

Overall assessment
In Sustainalytics' opinion the selected KPI is relevant and material to Seaspan, and the definition of the KPI is clear in relation to how it is being measured. Nevertheless, some ambiguity is noted in relation to the sustainability benefits which will result from progress on the KPI, based on the wide variety of potential fuels and technologies which may be selected by Seaspan, including those which may be developed over the coming decades. Sustainalytics highlights in particular the role that LNG is anticipated to play in the transition of the shipping sector to low-carbon fuels, as Seaspan's short-term expenditures will be directed towards LNG ships.

2) Calibration of Sustainability Performance Targets (SPTs)

Alignment with issuer's sustainability strategy

- Seaspan has set the following SPT for its KPI:
  - At the end of three years from the date of issuance of the Bond, Seaspan plans to have spent a minimum of USD 200 million on such upgrades and acquisitions.
- Sustainalytics considers the SPT to be aligned with Seaspan's sustainability strategy (please refer to Section 2 for further discussion of Seaspan's sustainability strategy). Seaspan has identified emission reduction of its fleet as one of its primary environmental objectives[6]. The company's initiative – 'Seaspan's Action on Vessel Energy Reduction' (SAVER) aims to continuously improve the efficiency of its fleet by ensuring its ships are maintained and equipped with fuel and energy-saving systems. As a part of the SAVER vessel initiative, Seaspan is exploring the feasibility of installing low-carbon propulsion systems. As described above, using alternatives fuel such as LNG can result in 25% reduction of CO_2 emissions, while other low-carbon fuels have the potential to fully decarbonize maritime shipping.

Strategy to achieve the SPTs

- Seaspan intends to achieve the SPT through the following strategy:
  - Seaspan will achieve its KPI through qualifying capital expenditures on ship acquisitions, and potentially through the cost of retrofits. The Company has disclosed that the USD 200 million target equates approximately to the costs to procure one-to-two new LNG-powered vessels.
  - The acquisition of dual-fuel vessels provides a way to increase the use of lower-carbon fuels in applications where operating vessels which are powered solely by alternative fuels would not be feasible or desirable for charterers.
  - Seaspan, as a lessor of container vessels, has little or no control over its ships' speed and trade routes. Therefore, its focus lies in ensuring its ships are well maintained and have been fitted with the technology necessary to reduce emissions, making acquisition and retrofits a relevant strategy to achieve the desired sustainability outcomes.

Ambitiousness, Baseline and Benchmarks

- The target established is based on Seaspan spending USD 200 million on eligible vessels, including new ships as well as refurbishment costs within a period of three years from the issuance of the bond. Failure to spend a minimum of USD 200 million on retrofitting or acquiring ships that can run on alternative fuels will result in Seaspan paying a higher principal payment at maturity of the bond (see Bond Characteristics, below).

[5] Elengy, LNG: an energy of the future, accessed on September 2020, at:https://www.elengy.com/en/lng/lng-an-energy-of-the-future.html#:~:text=Compared%20to%20traditional%20heavy%20fuel,SO2)%20and%20fine%20particle%20emissions.
[6] Seaspan's Environmental Effort Presentation provided to Sustainalytics in September 2020.

- Seaspan has confirmed that none of its vessels currently use alternative fuel, and that the baseline for this target is therefore zero dollars.
- It is estimated that currently there are only 49 LNG-fuelled container ships in operation or on order worldwide.[7] This makes up less than 1% of the approximately 5,144 container ships in operation in 2018.[8] Sustainalytics views this value as supporting the ambitiousness of Seaspan's SPT.
- From the end of 2011 to 2017, Seaspan grew is fleet from 65 vessels to 89 vessels (4 vessels per year). Since 2017, its fleet growth, outside of its acquisition of Greater China Intermodal (GCI), has exclusively been in second-hand vessel acquisitions (no newbuilding programs). Seaspan's latest newbuilding project was over 2 years ago, and Seaspan has not yet retrofitted any vessels in its existing fleet to use alternative fuel sources.
- Seaspan has confirmed that the size of the bond issuance will be approximately USD 100 million. Therefore, their commitment to spend approximately twice the amount on acquiring ships that run on alternate fuel is substantial as compared to the size of the issuance. Nevertheless, Sustainalytics notes that the USD 200mn figure is not based on any external benchmark, and has been instead selected based on Seaspan's internal strategy and plans.
- Since the SPT is defined in terms of total investments in vessels running on alternative fuels (with a baseline of zero vessels as of September 2020), Sustainalytics considers this to be moderately ambitious knowing that the planned investments in LNG and LNG dual-fuel vessels are expected to achieve a moderate emissions reduction over existing conventional fleet and contribute to alignment with the IMO's CO_2 emissions trajectory.[9] Sustainalytics is of the opinion that an ambitious target would focus further on investments in low-carbon fuelled vessels, capable of alignment with the IMO's decarbonization trajectory in the medium-term (2030) and/or long-term (2050), such as ammonia, hydrogen or renewables, while noting that in light of current commercially available technologies that Seaspan's expenditure commitments are anticipated to drive innovation in this space.

Overall Assessment
Sustainalytics considers Seaspan's SPT to be consistent with its overall sustainability strategy and the SPT selected to be moderately ambitious and representative of a commitment to improve the carbon efficiency of the shipping sector. In Sustainalytics' opinion a highly ambitious target would focus on increasing investments in vessels that run on low-carbon or zero-carbon fuels.

3) Bond characteristics

Seaspan's SLB will contain the characteristics of a conventional bond. Failure by Seaspan to enter into binding contracts of a value of at least USD 200 million to retrofit and /or acquire vessels that have the capability to run on alternative fuels at the end of three years from the date of the issuance of the bond will result in the Company paying a penalty upon maturity. This penalty will increase the principal payment upon maturity by 0.5% (50 basis points). Sustainalytics notes (i) that the bond characteristics are binary, without graduated outcomes, (ii) that there is no potential for Seaspan to improve its interest rate, and (iii) that the penalty rate is aligned with other sustainability-linked bonds in the market.

4) Reporting

Seaspan commits to report on an annual basis on its performance on the KPIs against the STP. Seaspan will publish an annual Sustainability-Linked Bond Performance Report which will contain up-to-date information on its KPI performance as well as examples of investments undertaken during the year. Sustainalytics finds this to be in line with the SLB Principles. Sustainalytics further encourages Seaspan to publish and keep readily available and easily accessible any information enabling investors to monitor the level of ambition of the KPI, such as future evolution of its definition of low-carbon fuel as alternative technologies mature.

5) Verification

Since the KPI is a measurement of the Company's expenditure or investment to retrofit existing vessels as well as purchase new vessels that have the capability to run on low-carbon and alternative fuels, it is captured within the Company's financial statements, particularly their income and expense statements and their

[7] SEA-LNG, LNG as a marine fuel 2019/ 2020, at: https://sea-lng.org/wp-content/uploads/2020/02/200214_SEALNG2019reviewDIGITAL_compressed.pdf
[8] UNCATAD, Review of Maritime Transport, 2018, at: https://unctad.org/en/PublicationsLibrary/rmt2018_en.pdf
9 IMO's trajectories assess emissions 'per transport work' using metrics such as CO2/tonne-nautical mile

balance sheet. Seaspan has committed that its spending on retrofitting and purchasing upgraded ships will be verified annually by either and external auditor or external Second-Party Opinion provider such as Sustainalytics, until the maturity of the bond.

Alignment with Sustainability Linked Bond Principles 2020

Sustainalytics has determined that the Seaspan October 2020 SLB aligns with the five core components of the Sustainability Linked Bond Principles (2020).

Section 2: Assessment of Seaspan's Sustainability Strategy

Credibility of Seaspan's sustainability strategy

Seaspan's sustainability strategy focuses on increasing fuel efficiency of its fleet by improving design and operation of its vessels thereby reducing GHG emissions. The company has stated a commitment to ensuring it complies with all relevant regional, national, and international maritime policies and required certifications. Seaspan's sustainability performance is demonstrated through the following efforts, as documented in its Annual Report 2018 as well as in other internal documents provided to Sustainalytics or otherwise made publicly available:

- Seaspan's SAVER Vessel Initiative aims to improve efficiency of its vessels through a combination of vessel configurations, operations and machinery adjustments and improvements. Some of these adjustments and improvements include – improving hull and propeller efficiency, optimization of its hull, bow, propeller, frequency-controlled energy efficient systems, trim and draught optimization etc. As a result of its SAVER initiative, Seaspan reports a reduction in carbon emissions of more than 25% since 2012, equivalent to the abatement of 9.2 million tons of CO_2.[10] Sustainalytics recognizes this program to be most directly aligned with the objectives of the SLB.
- Seaspan has communicated to Sustainalytics that in addition to updating its environment policy, the Company has made a commitment to redevelop its ESG strategy by the fourth quarter of 2020 and issue its inaugural, public facing ESG document in 2021.
- Seaspan has installed scrubbers on ten of its vessels, while all of its vessels have switched to low sulphur fuel oil to comply with IMO's new regulation on sulphur emissions.[11]
- The Company has also created a comprehensive inventory of hazardous materials to monitor hazardous waste on board its vessels. This is in compliance with EU regulations and the Hong Kong Convention and the Company has committed to creating a Ship Recycling Plan. As of 2016, Seaspan had recycled four of its vessels.

Sustainalytics considers Seaspan's ongoing initiatives to represent reasonable approach to improving its sustainability performance, and notes that the Company has demonstrated continued efforts to achieve its current sustainability targets and has committed to establishing more stringent and quantitative ESG goals. In particular, Sustainalytics highlights the Company's efforts to improve vessel efficiency, such as through the SAVER initiative and the commitment to report ESG metrics within the next year. Sustainalytics is of the view that the target, KPI and investments identified as part of this issuance, as referenced in Section 1, will further support Seaspan to advance its sustainability strategy.

Seaspan's environmental and social risk management

While Sustainalytics recognizes that the Seaspan's defined targets are impactful, we acknowledge that a company operating in the maritime industry must manage certain environmental and social risk related to operation of its vessels. Some of the most material ESG risks that shipping companies must manage include risk from regulatory changes, air and water pollution (including non-GHG emissions, ballast water discharge, and waste/spills), negative effects on marine biodiversity and health and safety risks for its employees. In the following section Sustainalytics comments on Seaspan's ability to mitigate such risks:

- The Company complies with conventions such as the IMO's International Convention for the Prevention of Pollution from Ships ("MARPOL"), which imposes liability for pollution in international waters and a signatory's territorial waters. Seaspan's fleet of vessels comply with international

[10] Seaspan's Environmental Effort Presentation provided to Sustainalytics in September 2020.
[11] As of 1st January 2020 IMO limits Sulphur in fuel oil to 0.50% mass by mass (m/m) as compared to the previous limit of 3.50% m/m. Read more: http://www.imo.org/en/MediaCentre/HotTopics/GHG/Documents/2020%20sulphur%20limit%20FAQ%202019.pdf

maritime environmental laws and regulations, which mandate a variety of reporting and analysis. Seaspan's corporate affairs are governed by the Company's own articles of incorporation and bylaws, as well as by the Marshall Islands Business Corporations Act ("BCA").[12]

- Seaspan has received certification verifying its ongoing compliance and commitments to minimizing potential environmental impact of its operations, specifically with ISO 140001:2015 certification. The Company has highlighted to Sustainalytics its ambition to further develop its environmental strategy and environmental risk management approach. This approach will also involve the updating of its environmental policy, which will aim to further implement its ISO 14000 Environmental Management System and develop reporting environmental metrics and development of appropriate targets. Key considerations will include the continued compliance of its assets and operations with local and international environmental legislation and will be supported by the establishment of targets to reduce GHG emissions.
- Recognizing the importance of limiting air pollution from the international shipping sector, which is almost entirely powered by highly polluting bunker fuels such as heavy fuel oil or diesel, Seaspan is committed to exploring pathways to meet the IMO's GHG targets. As part of this effort the Company has installed scrubber systems on some of its vessels, is working towards improving new vessel designs, modifying its existing vessels to make them more fuel efficient and is exploring use of as well as alternative fuels.
- Seaspan is compliant with the International Convention for the Control and Management of Ships' Ballast Water and Sediments or the BWM Convention which are regulations to control the transfer of potentially invasive species.[13] All new vessels delivered to Seaspan post 2014 have Ballast Water Treatment System installed and the Company is in the process of retrofitting its older vessels the same.
- Seaspan has a Health and Safety Policy[14] in place which is applicable to all its ship and shore staff. The policy calls for the implementation of a Safety Management System which promotes safe working practices and working environment and continual improvement of its safety management practices. Seaspan also ensures compliance with the International Convention for the Safety of Life at Sea (SOLAS)[15].
- Seaspan applies a series of enterprise-wide policies across its operations and assets, including a Standard of Business Conduct Policy[16] and Quality Policy[17]. Under these policies, the company strives to enforce ethical standards and culture of accountability, set up risk control measures and violation reporting mechanisms, protect and improve community relations and health, safety, environment, and quality etc.

Based on these policies, standards and compliance to various laws and conventions, Sustainalytics is of the opinion that Seaspan has implemented adequate measures and is well positioned to manage and mitigate environmental and social risks commonly associated with its operations.

[12] Seaspan Corporation, SEC Form 20-F, March 2019, at: https://www.seaspancorp.com/ir-dashboard/financial-information/sec-filings/
[13] International Maritime Organization, Ballast water management - the control of harmful invasive species, accessed in September 2020, at: http://www.imo.org/en/MediaCentre/HotTopics/BWM/Pages/default.aspx
[14] Seaspan, Policy: Health and Safety, June 2020, available at https://www.seaspancorp.com/wp-content/uploads/2020/08/PL-005-Health-Safety-Policy.pdf
[15] SOLAS s an international maritime treaty which sets minimum safety standards in the construction, equipment and operation of merchant ships.
[16] Atlas Corp's Standards of Business Conduct Policy Document. Provided by Seaspan to Sustainalytics.
[17] Seaspan Quality Policy, accessed September 2020, available at https://www.seaspancorp.com/wp-content/uploads/2020/08/PL-016-Quality-Policy.pdf

Section 3: Impact of the SPT chosen

The decarbonization of the shipping sector

In 2019, the shipping sector accounted for 3% of global GHG emissions and 9% of transport-related emissions.[18] The IMO estimates that by 2050 maritime emissions could grow by 50-250%.[19] Recognizing the need to reduce GHG emissions from the maritime sector, in order to align with the Paris climate goal, IMO in 2018 set emission reduction targets for the shipping sector. IMO aims to reduce by 2050 CO_2 intensity across international shipping by 70%, absolute emission by at least 50% as compare to 2008 levels,[20] and has set a new limit for sulphur in fuel oil used.[21] Achieving these targets will require large amounts of capital investment. One study estimates that total investment of USD 1.65 trillion will be required by 2050 to decarbonize the shipping sector.[22] Sustainalytics is of the opinion that Seaspan's investment in retrofitting and acquiring vessels that can run on alternative fuels will contribute to steering the shipping sector towards a low carbon future.

Considerations regarding the use of LNG fuel

Many financial market participants and analysts of the shipping sector believe that LNG will play an important role as a transition fuel in the next decade.[23] According to estimates provided by DNV GL, in 2014 there were approximately 119 LNG fueled ships in operation or on order.[24] This has increased to about 358 LNG fueled ships that are currently in operation or on order by mid-2019.[25] However, this makes up only a small fraction of the entire international maritime fleet which is estimated to be over 50,000 vessels in 2019.[26]

Sustainalytics highlights the following considerations with regards to Seaspan's use of high-pressure, dual-fuel engines that will primarily run on LNG:

- Sustainalytics notes that the high-pressure gas injection system injects gas into the cylinder late in the compression stroke at a high pressure and avoids methane slip by injecting the gas after the exhaust valve closes, unlike the low-pressure system. However, this system leads to higher burned gas temperatures and a relatively higher generation of NO_x emissions, which may require aftertreatment using EGR or SCR.[27] The ships will also be equipped with a boil-off gas (BOG) management system to recover BOG and maintain the LNG tank pressures.
- Seaspan intends that the vessels be operated with the main engine in shaft generator / power take off (PTO) mode where the additional energy in the main engine can produce electricity and minimize auxiliary engine fuel consumption during voyages. Sustainalytics notes that auxiliary engines are intended to be low-pressure Otto cycle type which may exhibit higher methane slip, however Seaspan plans to operate auxiliary engines on sustainable biofuels or synthetic fuels in future to minimize its environmental impact.

In this context, the short-term benefits of LNG as a shipping fuel are recognized, however, it is noted that to maximize these benefits appropriate selection of technologies and robust operational controls must be in place, and that in the medium- to long-term the use of LNG must be supplemented with other technologies and fuels to allow for deep decarbonization.

[18] IRENA, New Report Identifies Clean Energy Options for Global Shipping Industry, October 2019, at: https://www.irena.org/newsroom/articles/2019/Oct/New-Report-Identifies-Clean-Energy-Options-for-Global-Shipping-Industry
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[27] Exhaust Gas Recirculation (EGR) and Selective Catalytic Reduction (SCR) are the two commonly employed forms of engine exhaust after-treatment for NOx reduction. It is most likely that EGR will be used on the main engines of Seaspan's vessels, but SCR may also be deployed.

Alignment with and contribution to the SDGs

The Sustainable Development Goals (SDGs) were set in September 2015 and form an agenda for achieving sustainable development by the year 2030. This sustainability linked bond advances the following SDG goals and targets:

KPI	SDG	SDG target
The aggregate financial value of binding commitments towards vessel acquisitions, newbuildings, and vessel retrofits, which can be powered by Alternative Fuel Sources	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

Conclusion

Seaspan intends to issue a Sustainability-Linked Bond which will tie the principal amount due upon maturity to the achievements of the following SPT:

I) A minimum of USD 200 million spent in a period of three years from the date of issuance of the bond, on upgrading and acquiring ships that have the ability to run on alternative fuels.

Sustainalytics performed a review of Seaspan's SLB framework and considers the KPI to be relevant and material and aligned with the Company's sustainability strategy. Sustainalytics considers Seaspan's SPT to represent a material improvement to the baseline and to be moderately ambitious, noting that the move to LNG-powered vessels represents an important part of the short-term transition of the shipping industry but in the long-term must be coupled with other decarbonization technologies in order to be aligned with climate goals. Furthermore, Sustainalytics considers reporting and verification commitments to be aligned with market expectations.

Based on the above, Sustainalytics considers Seaspan's SLB to be in alignment with the five core components of the SLBP and the prospective of achievement of the SPT to be impactful.

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