



Cadeler Green Finance Second Opinion

October 28, 2020

Cadeler A/S is headquartered in Copenhagen, Denmark and is an offshore wind turbine transportation and installation contractor. Cadeler operates two of the world's largest windfarm installation vessels, Pacific Orca and Pacific Osprey. To date, Cadeler's vessels have worked on more than thirty offshore wind projects, installing almost three hundred turbines and more than four hundred turbine foundations. Having installed more than 3GW of wind capacity, Cadeler is targeting to install no less than 3.5GW of additional offshore wind capacity by 2025. A total of 6.5GW is more than, e.g., the total current wind power capacity in Denmark.

Proceeds raised through green financing will mainly go to acquisition and upgrades (e.g., with more capable cranes) of the two existing vessels the company is currently operating but not owning, and investments in a third battery hybrid wind farm installation vessel According to the company, given the early stages of the project a criteria matrix for projects eligible for green finance proceeds has not yet been produced. The framework also allows for investments in fossil fuel related efficiency improvements of the vessels as well as pollution prevention, ship recycling and research stations on the vessels.

While the three wind farm installation vessels are exclusively dedicated to offshore wind farm operations, they could also be deployed to other offshore operations. However, the company informed us that vessels were not deployed in oil and gas operations in recent years and the company's offshore wind project pipeline lasts up to 2025 and beyond.

As a shipping company, Cadeler has a responsibility to reduce its impact on the environment through innovative solutions for its operations. While the offshore wind farms itself can be Dark Green, investments in ships solely dedicated to wind farm installations and with capacity to handle the next generation of wind turbines as well as efficiency improvements cannot exceed Medium Green due to substantial carbon emissions from operations. Substantial improvements, such as "future-proofed" hybrid vessels could be Medium or even Dark Green if they constitute a low-carbon solution. The company is committed to reducing its GHG emissions aligned to (or beyond) the IMO Initial Strategy and Danish NDCs and is actively exploring low-carbon solutions and efficiency improvement measures. While the company does not yet report according to TCFD and has vague selection criteria, Cadeler will report on a project-by-project level and will receive an external review of its reporting.

Based on the overall assessment of the projects that will be financed, under this framework, and governance and transparency considerations, Cadeler's green Finance Framework receives a **CICERO Medium Green** shading and a governance score of **Good**. The Medium Green shading reflects that despite significant emissions from operations, the investments in the upgrades of cranes on the existing vessels are dedicated to being able to handle the next generation of wind turbines. In order to further improve, the company could establish more ambitious emission targets for the vessels, clearer eligibility criteria under the framework focusing on non-fossil fuel and innovative solutions for its vessels and include broader supply chain considerations.

SHADES OF GREEN

Based on our review, we rate the Cadeler's Green Finance Framework **CICERO Medium Green**.

Included in the overall shading is an assessment of the governance structure of the green Finance Framework. CICERO Shades of Green finds the governance procedures in Cadeler's framework to be **Good**.



GREEN BOND AND GREEN LOAN PRINCIPLES

Based on this review, this Framework is found in alignment with the principles.





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1 Terms and methodology

This note provides CICERO Shades of Green's (CICERO Green) second opinion of the client's framework dated July 2020. This second opinion remains relevant to all green finances and/or loans issued under this framework for the duration of three years from publication of this second opinion, as long as the framework remains unchanged. Any amendments or updates to the framework require a revised second opinion. CICERO Green encourages the client to make this second opinion publicly available. If any part of the second opinion is quoted, the full report must be made available.

The second opinion is based on a review of the framework and documentation of the client's policies and processes, as well as information gathered during meetings, teleconferences and email correspondence.

Expressing concerns with 'shades of green'

CICERO Green second opinions are graded dark green, medium green or light green, reflecting a broad, qualitative review of the climate and environmental risks and ambitions. The shading methodology aims to provide transparency to investors that seek to understand and act upon potential exposure to climate risks and impacts. Investments in all shades of green projects are necessary in order to successfully implement the ambition of the Paris agreement. The shades are intended to communicate the following:

CICERO Shades of Green



Dark green is allocated to projects and solutions that correspond to the long-term vision of a low carbon and climate resilient future. Fossil-fueled technologies that lock in long-term emissions do not qualify for financing. Ideally, exposure to transitional and physical climate risk is considered or mitigated.



Medium green is allocated to projects and solutions that represent steps towards the long-term vision, but are not quite there yet. Fossil-fueled technologies that lock in long-term emissions do not qualify for financing. Physical and transition climate risks might be considered.



Light green is allocated to projects and solutions that are climate friendly but do not represent or contribute to the long-term vision. These represent necessary and potentially significant short-term GHG emission reductions, but need to be managed to avoid extension of equipment lifetime that can lock-in fossil fuel elements. Projects may be exposed to the physical and transitional climate risk without appropriate strategies in place to protect them.



Brown is allocated to projects and solutions that are in opposition to the long-term vision of a low carbon and climate resilient future.

Examples



Wind energy projects with a strong governance structure that integrates environmental concerns



Bridging technologies such as plug-in hybrid buses



Efficiency investments for fossil fuel technologies where clean alternatives are not available



New infrastructure for coal

Sound governance and transparency processes facilitate delivery of the client's climate and environmental ambitions laid out in the framework. Hence, key governance aspects that can influence the implementation of the green finance are carefully considered and reflected in the overall shading. CICERO Green considers four factors in its review of the client's governance processes: 1) the policies and goals of relevance to the green Finance Framework; 2) the selection process used to identify and approve eligible projects under the framework, 3) the management of proceeds and 4) the reporting on the projects to investors. Based on these factors, we assign an overall governance grade: Fair, Good or Excellent. Please note this is not a substitute for a full evaluation of the governance of the issuing institution, and does not cover, e.g., corruption.



2 Brief description of Cadeler's green Finance Framework and related policies

Cadeler A/S (“Cadeler”), is headquartered in Copenhagen, Denmark and is an offshore wind turbine transportation and installation contractor. Cadeler operates two of the world’s largest windfarm installation vessels, Pacific Orca and Pacific Osprey. In 2010, Cadeler was acquired by Swire Pacific Offshore Operations (Pte) Ltd (“Swire Pacific Offshore”) (SPO), a marine services conglomerate and leading service provider to the offshore oil & gas and renewables industries. Approximately 70-80 percent of SPO’s revenue currently comes from fossil fuel-related business. Swire Pacific Offshore has offices in more than 20 countries worldwide and over 2,000 employees. Swire Pacific Offshore is a wholly owned subsidiary of Swire Pacific Limited (“Swire Pacific”), a listed company in Hong Kong. However, at the time of writing, Cadeler is in the process of being spun-off and listed on the Oslo Stock Exchange. In future it will be an independent company, focusing exclusively on offshore renewables.

In addition to offshore wind farm installation, Pacific Orca and Pacific Osprey offer a range of maintenance, construction and decommissioning services. These vessels are designed to meet both the current and future needs of the offshore wind industry. Despite being of special design as offshore windfarm installation vessels, the vessels could potentially be deployed to support other offshore gas operations the vessels have only been commissioned by offshore wind projects so far. To date, Cadeler’s vessels have worked on more than thirty offshore wind projects, installing almost three hundred turbines and more than four hundred turbine foundations. At the time of their construction, Pacific Orca and Pacific Osprey were the largest and most capable wind turbine installation vessels in the market. They were designed to enable upgrades, which have allowed them to keep pace with the rapid increase in the size of offshore wind turbines and the trend towards installing them in both deeper water and more challenging locations. Cadeler is not responsible for logistics of wind turbine components from the manufacturer facility to the port of loading. In 2020 an extension to Pacific Osprey’s crane was completed. By investing in a 30m extension to the boom, the vessel is ready to handle the next generation of 10, 11, and 12MW turbines from MHI Vestas, Siemens Gamesa and General Electric. To date, more than 3GW of wind capacity has been installed. Based on the existing contract pipeline, Cadeler is targeting to install no less than 3.5GW of offshore wind capacity by 2025.

Environmental Strategies and Policies

According to the company, as an integral part of Swire Pacific Offshore group of companies, Cadeler is committed to delivering leadership in environmental, health and safety, employment, business partnerships and community matters across the value chain. The company is undergoing corporate restructuring at the moment. Cadeler observes all Swire Pacific Offshore and Swire Pacific’s sustainability policies and procedures. According to the issuer should Cadeler become a standalone, independent business entity, Cadeler will adopt all Swire Pacific Offshore’s Corporate Policies and Procedures. However, the existing SPO Environmental Management Manual, and the ISO 9001 Quality Management Manual will be adjusted sector specifically.

The group (SPO) has a Sustainable Development Policy in place where several of UN’s Sustainability Development goals (SDG’s) have been identified as relevant. As stated in the group’s sustainability Policy and Environmental Policy, Cadeler is committed to pursuing the long-term goals of radical decarbonization and optimizing energy efficiency. The group has provided Global Reporting Initiative (GRI) compliant Sustainable Performance reports since 2008.



The historic emissions of the whole group's direct emissions have decreased over the years (scope 1 emissions down by 14.8% in 2019 and its scope 2 by 21%). According to the company, the issuer is committed to reducing its GHG emissions aligned to (or beyond) the IMO Initial Strategy and Danish NDCs. The group is committed to reduce its normalized (scope 1 and 2 emissions by 3% y-o-y. Normalization takes into account the time the vessels are on hire or off hire, respectively. Scope 3 emissions are in order of magnitude higher than Scope 1 and 2 emissions combined (represent more than 80 percent of emissions). The group is reporting emissions from the vessels when they are operating for a customer as scope 3 emissions. Emissions from the production of the oil and gas, as well as emission reduction from renewable energy production from the offshore wind farms, are not part of the GRI reporting. Fuel combustion in internal combustion engines is the biggest contributor to the group's carbon footprint (90.2%). These emissions increased by 5.7% in 2019 compared to the 2018 figure. The company currently operates two vessels that emitted approximately 7.9 ktCO₂ in 2019 with a utilization rate of 52%. Both ships were solely active on wind farm installations. According to the reporting Scope 3 fuel consumption emissions per 'utilized available boat day' decreased by 2.7% since 2018. This is explained by better environmental performance of the new fuel-efficient fleet: the design of every new class of our vessels involves the use of the latest technology and emission control equipment.

The group communicates its approach to climate change mitigation, adaptation and resilience in accordance with its Climate Resilience Standard Operating Procedure. The company informed us that more energetic weather systems, raising of sea level and increasing ocean acidification are expected to be of importance for the company. In their latest report they signal that they will address TCFD reporting more detail in 2020 as the group comes to a consensus on the most applicable Representative Concentration Pathway (RCP) to use for our scenario planning.

The group has in place several environmental targets. The group aims at zero release of oil and other hydrocarbons to the marine environment. The company Investment in the REDD+ (Reduced Emissions from avoided Deforestation and Forest Degradation) forest conservation scheme in Paraguay, which aims to preserve primary forests and biodiversity of the endemic species of flora and fauna meeting both the 'Gold Level' of the Climate, Community and Biodiversity Alliance (CCBA) Standard and the Verified Carbon Standard (VCS).

SPO recycles all their ships at the end of their economic lives in a Sustainable and Environmentally Responsible way in accordance with the HK Convention. Vessels are sustainably and responsibly recycled at the end of their lives only at Ship Recycling Facilities in Alang, India that have been issued with a Statement of Compliance with the Hong Kong Convention for the Safe and Environmentally Sound Recycling of Ships by ClassNK.

The company does invest in R&D on alternate fuels (e.g. Project Hafnium). Project Hafnium was set up to explore the viability of hydrogen (H₂) production, storage, and power for Offshore Supply Vessels, with the goal of radical decarbonization through the use of H₂-based fuel. A feasibility study was conducted in 2019 with the initial focus to investigate the possibility to produce hydrogen on board and use it as fuel in the existing diesel engines.

However, this was not a technically feasible option as the hydrogen engine technology has several unresolved issues. The research was extended to alternative ways to store hydrogen and extract useful energy from it, including chemical hydrogen carrier molecules such as methanol and ammonia that can be used both as fuels in internal combustion engines or as hydrogen sources. The analysis revealed that although there is potential for methanol and ammonia as hydrogen carriers for marine fuel cells, the technology is still not mature at present day to commit to for new ships. According to Cadeler, the company is actively considering alternate fuels (that will supply 64% reduction in GHG emissions to meet the IMO Initial Strategy) as well as technical and operational measures that will provide the remaining 36%. At the moment the company is assessing up to 27 different Energy Efficiency and Carbon Reduction measures.



Use of proceeds

The proceeds of the funds will be used to partially finance the design and construction of a third windfarm installation vessel, acquisition of existing vessels and upgrades for the existing vessels. This larger, more capable and efficient vessel will enable the offshore renewables industry to proceed with the development of even larger and more efficient turbine models. By facilitating the installation of more powerful turbines, this new vessel will provide a number of environmental benefits: reduced emissions per MWh of energy at the installation stage and a smaller environmental footprint during the operations and maintenance phase of the turbine lifecycle.

According to the company, given the early stages of the project the issuer has not produced the criteria matrix for projects eligible for green finance proceeds.

Selection

The selection process is a key governance factor to consider in CICERO Green's assessment. CICERO Green typically looks at how climate and environmental considerations are considered when evaluating whether projects can qualify for green finance funding. The broader the project categories, the more importance CICERO Green places on the governance process.

The Eligible Green Projects are identified and selected using the company's established policies and procedures required for capital expenditure and asset management. As required under the "Asset Management – Investment Appraisal" policy and procedures, a working group involving participants from various functional areas from Swire Pacific Offshore and Cadeler will form a working group to review and select Eligible Green Projects. The working group will identify and manage potentially material environmental and social risks and opportunities associated with the Eligible Green Projects, if applicable. Depending on the investment approval thresholds, the shortlisted projects will be presented to the Board of Directors at Cadeler, Swire Pacific Offshore and/or Swire Pacific for approval. In addition, the company will be employing a local Sustainability Manager.

The ALC is another set of policy and procedures in place that ensures an integrated "whole of company/all functions" approach is taken to optimizing the life cycle of Swire Pacific Offshore and Cadeler assets, beginning at conceptual design, pre-production, production through to disposal. With thorough planning, analysis and timely execution through staged processes and gated reviews that allow appropriate data-driven decision-making, this ensures that the shortlisted green projects are evaluated and managed effectively, with the proceeds raised from the Green Financing Instruments delivering optimum value and long-term positive environmental effects.

Management of proceeds

CICERO Green finds the management of proceeds of Cadeler to be in accordance with the Green Bond Principles. The net proceeds from Green Financing Instruments will be managed by Cadeler's finance and treasury team.

Cadeler will keep an internal record, containing information including Green Financing Instruments details including principal amount, maturity date, etc., list of Eligible Green Projects and brief description of the projects; and the amount of net proceeds allocated to the projects.

Cadeler may invest and manage unallocated proceeds, at its own discretion, in cash and/or cash equivalents in accordance with the cash management policies and investment mandates; or use them to repay existing borrowings. The company informed us that unallocated proceeds cannot be invested in fossil fuel related assets such as car and/or oil and gas company stocks. While a specific investment mandate has not been identified yet, the company will only consider investing if the targeted product/investment is an enabler for Cadeler to grow into a global



offshore wind farm contractor. If a financed Eligible Green Project no longer meets the eligibility criteria, it will be removed from the green project portfolio and be substituted by another Eligible Green Projects.

Reporting

Transparency, reporting, and verification of impacts are key to enable investors to follow the implementation of green finance programs. Procedures for reporting and disclosure of green finance investments are also vital to build confidence that green finance is contributing towards a sustainable and climate-friendly future, both among investors and in society.

A newly hired local Sustainability Manager in Denmark will be responsible for the reporting. Cadeler will provide information annually on the allocation of the net proceeds of its Green Financing Instruments on Cadeler's website and in Cadeler's Sustainable Development Reports. The Second party opinion, the assurance report and the methodology will also be made publicly available. According to the issuer, Scope 1, 2 and 3 emissions are defined in the Sustainable Development Report, which will receive an external review.

According to the company, the information will be provided during the whole lifetime of the bonds, if the company decides to raise bonds. The report will include a list of Eligible Green Projects funded, including amounts allocated; and Remaining balance of unallocated proceeds. The allocation of the net proceeds will be reviewed by an independent accountant. Reporting will be conducted on a project-by-project basis and will receive an external review.

In addition, where feasible, Cadeler will provide qualitative and (if reasonably practicable) quantitative environmental performance indicators of the Eligible Green Projects funded. Such performance indicators include: Annual Greenhouse Gas emissions reduced/avoided (tonnes of CO₂e) and NO_x, SO_x, PM, BC and VOC Emissions. In addition total installations performed included foundations and generators, total capacity of renewable energy production (MW) for the projects and annual renewable generation (MWh) for the projects.



3 Assessment of Cadeler’s green Finance Framework and policies

The framework and procedures for Cadeler’s green finance investments are assessed and their strengths and weaknesses are discussed in this section. The strengths of an investment framework with respect to environmental impact are areas where it clearly supports low-carbon projects; weaknesses are typically areas that are unclear or too general. Pitfalls are also raised in this section to note areas where Cadeler should be aware of potential macro-level impacts of investment projects.

Overall shading

Based on the project category shadings detailed below, and consideration of environmental ambitions and governance structure reflected in Cadeler’s green Finance Framework, we rate the framework **CICERO Medium Green**.

Eligible projects under the Cadeler’s green Finance Framework

At the basic level, the selection of eligible project categories is the primary mechanism to ensure that projects deliver environmental benefits. Through selection of project categories with clear environmental benefits, green finances aim to provide investors with certainty that their investments deliver environmental returns as well as financial returns. The Green Bonds Principles (GBP) state that the “overall environmental profile” of a project should be assessed and that the selection process should be “well defined”.

Category	Eligible project types	Green Shading and some concerns
Renewable Energy  	Acquisition of vessel/s which are to be used exclusively for the installation and maintenance of offshore wind farms’ production and transmission of wind energy.	Light Green <ul style="list-style-type: none"> ✓ This category includes the purchase of the two energy efficient existing wind farm vessels that Cadeler is operating, but not yet owning. ✓ The wind farm vessels will be exclusively deployed to offshore wind farm installations, but could potentially be used for other offshore operations as well. ✓ Vessels will run on diesel fuel. Heavy fuel oil vessels (and scrubbers) are excluded according to the company. ✓ According to the company, the two vessels that are to be acquired are expected to qualify under the Marine Renewable Energy Sector CBI taxonomy.¹ ✓ According to Cadeler, due to its two vessels’ size, the vessels are more efficient

¹ <https://www.climatebonds.net/standard/marine>



in terms of fuel burned compared to other market participants.

- ✓ Any vessels acquired will fly either Cypriot or Danish flags. The vessels will have an approximate lifetime of 20 to 25 years and will receive a managed emissions reduction plan according to Cadeler.

Energy Efficiency



Projects such as adoption of smart technologies and/or systems on our new and existing marine assets in order to:

- optimize fuel management on board (e.g. FUELTRAX),
- recover waste heat from power generation, and low carbon emission energy generation.

Light to Medium Green

- ✓ The company is currently evaluating the viability of up to 27 different energy efficiency and carbon reduction measures, but has not made any specific commitments and has not established minimum thresholds.
- ✓ Efficiency improvements in fossil fuel related assets that directly support increased deployment of renewable energy are rated Light Green.
- ✓ The risk of locking in emissions through short-term efficiency improvements can be significant if the technology becomes obsolete

Pollution Prevention and Control



Projects such as adopting low carbon technologies and/or implementing procedures and initiatives on our new and existing marine assets leading to:

- reduction in air emissions from operations,
- greenhouse gases control,
- reduced reliance on fossil fuels,
- waste prevention, reduction and recycling e.g. (tackling plastic pollution, sustainable ship/asset recycling), and
 - energy/emission-efficient waste to energy.

Light to Medium Green

- ✓ This category includes projects rated Light Green (e.g., reduction in air emission from operations) and Medium Green (e.g., installation of battery packs to shave off peak loads)
- ✓ The recycling of whole ships in accordance with the HK Convention can be financed under this category. This can have substantial environmental impacts and we encourage to apply the highest available standards.
- ✓ Some pollutant reduction mechanisms could lead to increased demand for fossil fuels. The company does not consider using scrubbers as the company does not use heavy fuel oil.
- ✓ Waste-to-energy is currently not considered, but the company is actively looking for solutions to address waste occurring on its ships.



<p>Clean Transportation</p>  	<p>Projects such as development, construction and operations of newbuilds and upgrading of existing vessels which are used exclusively for the transportation and installation, operations and maintenance and services to offshore wind farms, that are:</p> <ul style="list-style-type: none"> • more energy efficient (e.g., optimized vessel design using computational fluid dynamics, LED lighting and variable speed drive (VSD) motors), • more eco-efficient (e.g. adopting cleaner alternative or dual fuel technologies; power regeneration from jacking system, main and auxiliary cranes' lowering with a new hybrid solution – charging of batteries instead of using resistor banks – hence recovering waste heat from power generation; replacing at least one genset with batteries at equal weight; engines which are built to MARPOL Annex VI Tier III, and green certified (e.g. IHM, Clean or Clean Design Notations, Battery (Power), GAS READY). 	<p>Light to Medium Green</p> <p>✓ According to the issuer, this category will receive the largest amount of proceeds in the inaugural issuance incl. down-payment for a new build vessel and upgrade of cranes. While highly efficient hybrid vessels for offshore wind installations can be seen Medium Green, improvements and upgrades of vessels are Light Green.</p> <p>✓ According to the company, given the early stages of the project the issuer has not produced the criteria matrix for projects eligible for green finance proceeds. Operating expenditures are excluded according to the company.</p> <p>✓ The wind farm vessels will be exclusively deployed to offshore wind farm installations, but could potentially used for other offshore operations.</p> <p>✓ The company has informed us that the new vessel will be a battery hybrid vessels based on diesel fuel and future proofed for fuel cell technology and shore/offshore charging. Heavy fuel oil vessels are excluded according to the company.</p>
<p>Sustainable Water and Wastewater Management</p>  	<p>Projects such as the installation and operation of water treatment and water production plants on vessels, and waste recycling practices.</p>	<p>Light to Medium Green</p> <p>✓ Ballast water is managed in full compliance with the IMO convention.</p> <p>✓ Pumps and other water treatment devices are currently powered with fossil fuels</p>
<p>Climate Change Adaption</p> 	<p>Projects such as installing weather stations onboard newbuilds and existing vessels which improve marine meteorological observations and support the long term understanding of the global climate.</p>	<p>Dark Green</p> <p>✓ It constitutes a Dark Green solution that Cadeler enables organizations to set up research stations on their vessels as an additional benefit for the researching entities as well as for Cadeler, who is directly impact through changing climate.</p>

Table 1. Eligible project categories



Background

The International Maritime Organization (IMO) set a target to reduce emissions from shipping by at least 50% from the level of 2008 by 2050 and limiting the sulfur content to no more than 0.5% by 2020². The IEA's 2018 World Energy Outlook, however, foresees that, e.g., switching to LNG would not be sufficient on its own to achieve the IMO's long-term target³ – this could enable advanced battery technology as a complementary solution. The only zero-carbon technology currently suitable for deep-sea shipping is sustainable biofuel. This is a “drop-in” fuel, requiring no technological innovation into ships. Innovation into alternative zero-carbon fuels is the most important long-term policy for the deep-sea shipping. Energy efficiency improvements are also needed to cater for these fuels, as they have lower energy density.

No current deep-sea shipping activity would qualify as CICERO Dark Green. However, while an offshore wind farms itself can be Dark Green, investments in conventional ships solely dedicated to wind farm installations as well as efficiency improvements can only be seen as Light Green. Despite the fact that projects might be exposed to the risk of lock-in of emissions, CICERO Green views efficiency improvements as necessary to reach the well below 2°C target. The heavy-duty shipping is an example where no viable alternatives yet exist. Therefore, substantially reducing CO₂, NO_x and SO_x emissions in shipping is vital but does not constitute a long-term green solution. Emissions from transportation should be zero in the long-term and transporting fossil fuels such as coal and petroleum products should become obsolete.

CICERO Green acknowledges the substantial need for more renewable energy production incl. offshore wind installations. In 2019, global renewable electricity generation grew 7% and reached a quarter of global power output, due to the continued growth of solar PV and wind technologies accounting for 65% of this increase. Despite these positive trends (especially with PV), additional efforts are needed in renewable power generation to meet the targets set out in the IEA's SDS. According to the IEA, the share of renewables in global electricity generation must reach 47% by 2030, up from 25% in 2017.⁴

EU Taxonomy

In 2020, the EU Taxonomy was released in a multi-lateral effort to standardise thresholds and metrics to aid the green transition. The Taxonomy provides signposting for investors and bond issuers to aid in their decision-making and project selection processes.

The proposed EU taxonomy for sustainable finance⁵ currently does not suggest thresholds or criteria for deep water shipping. However, the taxonomy suggest a threshold for facilities operating wind power at life cycle emissions lower than 100gCO₂e/kWh, declining to 0gCO₂e/kWh by 2050. Currently, wind power is derogated from performing a product carbon footprint or lifecycle assessment and deemed to be taxonomy eligible.

However, the EU Taxonomy also considers Do No Significant Harm (DNSH) and social guidelines. According to the company, Cadeler sees the developer of the wind farm as responsible for ensuring environmental integrity. However, Cadeler ensures that the clients have secured environmental permits and, e.g., arranged dual big bubble curtains before commencing installation of bottom fixed foundations and, therefore, indirectly contributing to following DNSH criteria and social guidelines.

² <http://www.imo.org/en/MediaCentre/HotTopics/GHG/Pages/default.aspx>

³ <https://www.iea.org/weo>

⁴ <https://www.iea.org/topics/tracking-clean-energy-progress>

⁵ Taxonomy: Final report of the Technical Expert Group on Sustainable Finance, March 2020.

https://ec.europa.eu/knowledge4policy/publication/sustainable-finance-teg-final-report-eu-taxonomy_en

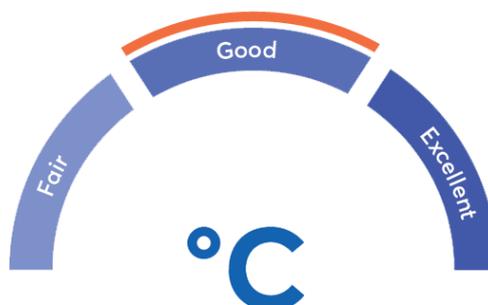


CICERO Green is of the opinion that while the construction and operation of the wind installations itself would likely qualify under the proposed EU taxonomy, it is currently unclear how the EU taxonomy will apply to Cadeler's shipping activities.

Governance Assessment

Four aspects are studied when assessing the Cadeler's governance procedures: 1) the policies and goals of relevance to the green Finance Framework; 2) the selection process used to identify eligible projects under the framework; 3) the management of proceeds; and 4) the reporting on the projects to investors. Based on these aspects, an overall grading is given on governance strength falling into one of three classes: Fair, Good or Excellent. Please note this is not a substitute for a full evaluation of the governance of the issuing institution, and does not cover, e.g., corruption.

Cadeler has in place a Sustainable Development Policy and reports in accordance with the GRI. The company aims to align with the IMO Initial Strategy and the Danish NDCs and has Scope 1 and 2 emissions reduction targets of 3% per year normalized by utilization. Cadeler has no absolute targets, but is committed to pursue the long-term goal of radical decarbonization according to the company. At the moment the company is assessing up to 27 different Energy Efficiency and Carbon Reduction measures. While the company is aware of climate risks, Cadeler has not formally adapted TCFD recommendations and, ultimately, climate risk as well as sustainability strategy lies with the company's parent company. According to the company, given the early stages of the project the issuer has not produced the criteria matrix for projects eligible for green finance proceeds. The selection committee includes some environmental expertise, but projects are ultimately selected by the board. While life cycle assessments are to some extent part of the process, a formalized process on screening climate impact of the supply chain does not exist. The company excludes temporary investments of unallocated proceeds in fossil fuel related assets. The company will report on a project-by-project level and will receive an external review of its reporting. The overall assessment of Cadeler's governance structure and processes gives it a rating of **Good**.



Strengths

It is a strength that Cadeler's business model is entirely focused on supporting offshore wind installations. Investments in upgrades with, e.g., cranes to be able to handle the next generation of larger offshore wind plants are commendable efforts to deploy large capacities of renewable energy. With a total wind power of 6.5GW in 2025, Cadeler aims to have installed more capacity than, e.g., the total current wind power capacity in Denmark (6.2GW in 2019⁶).

It is a strength that Cadeler is actively exploring efficiency improvements and low-carbon solutions. According to the company the new vessel will be a battery hybrid technology vessel with a range of efficiency improvement. Cadeler aims at preparing the newbuild for fuel cell technology. Batteries are expected to be used as a carbon-free energy source in coastal, short-distance applications (offshore wind farms) and as energy buffers for on-board electricity needs to reduce dependency on auxiliary engines. Additionally, the company is exploring the possibility of shore and offshore charging. In addition, the company is in close dialogue with the clients on future turbine technologies, which will ensure that any newbuilds will be built to a longer life span. In the medium term, the company informed us that it will continue to explore the use of alternative fuels, e.g., biofuels or synthetic fuels

⁶ <https://www.statista.com/statistics/990723/number-of-active-wind-power-turbines-in-denmark/>



generated from renewable energy such as hydrogen produced by electrolysis using wind or photovoltaic energy. However, firm commitments to which type of technology will be deployed have not been made. CICERO Green views this effort of accelerating lower emission shipping technology as vital to reach the 2° target. The company notified us that, e.g., biofuel blends are already partly used but sustainability of biofuels are not always deemed to be sustainable and the engines are not cleared for use of higher levels of biofuel contents. Closer partnerships with clients on reducing carbon footprint.

Cadeler informed us that all vessels will trade under Danish or Cyprian flag. This is a strength as ship recycling requirements will be handled by an approved recycling facility according to the EU Ship Recycling Standard. In addition, the company included “green recycling” of the ships as an eligible project category. However, recycling ships can have substantial environmental impacts and we encourage to apply the highest available standards.

Weaknesses

Investors should be aware that even though proceeds are dedicated to the installation of offshore wind infrastructure investments are directly supporting existing and new fossil fuel powered vessels with significant emissions associated with its operation. While there are currently no economically viable alternatives, Cadeler is aware of this weakness and is actively taking measures improve efficiency of its vessels and to explore low carbon shipping solutions. As a shipping company, Cadeler has a responsibility to reduce its impact on the environment through innovative solutions for its operations.

Pitfalls

It constitutes a pitfall that Cadeler invests in improvements of its fossil fuel powered vessels. While the offshore wind farms itself can be Dark Green, investments in ships solely dedicated to wind farm installations without substantial efficiency improvements can only be seen as Medium Green due to the vessels’ emissions. Investments in “future-proofed” battery hybrid wind turbine installation vessels could be Medium or even Dark Green depending on how the vessels incorporate, e.g., an option to run partly on battery power, are ready to and wholly or partly already do use low-carbon fuels and deliver significant emission reductions through efficiency improvements.

While the three wind farm installation vessels are exclusively dedicated to offshore wind farm operations, they could also be deployed to other offshore operations should demand for wind farm operations decrease. This is of particular concern since Cadeler’s parent company is active in the oil and gas service industry with 70-80 percent of revenue currently coming from fossil fuel-related business activities.

According to the company, given the early stages of the project the issuer has not produced the criteria matrix for projects eligible for green finance proceeds. This constitutes a pitfall as the risks of locking in emissions as well as rebound is particularly high when projects are associated with fossil fuels (e.g., efficiency improvements and upgrades) are not clearly defined. CICERO Green encourages the company to sharpen its eligibility criteria and notes that while the dedication to the offshore wind installation service industry is commendable, an assessment of the ambition of the various measures financed under this framework could not be fully assessed.

The company commits to Scope 1 and 2 emissions reduction targets of 3% per year normalized by utilization. However, Cadeler has no absolute emission targets and will increase emissions by adding a new vessel to the fleet.

Cadeler does not screen for the environmental impact of the wind farm projects, but the company informed us that all of its projects are within the EU and subject to environmental impact assessments. The overall responsibility for the environmental impact of the installation project lies with the developer and not with the wind farm



installation contractor. While Cadeler requires developers to have a relevant permit, the impact of the project could also have additional negative local environmental impacts.

According to the company, Cadeler is considering the life cycle impact of the overall vessels. The company does not generally require specific climate or environmental standards regarding the selection of a supplier and producer of the new vessel which also includes the level of fuel efficiency. CICERO Green encourages Cadeler to establish dedicated policies towards the suppliers as well as generally to subcontractors, offshore wind developers and for other supply chain aspects.

Despite the vessels' estimated lifetime of 20 to 25 years, this framework bears significant risks of stranded assets and would therefore benefit from TCFD reporting. In addition, the company informed us that impacts from climate change are already noted in ports and shipping channels due to rising sea levels and changed erosion and sedimentation patterns. In addition, extreme weather events have the potential to affect operations both offshore and in ports and operations of clients especially at their offshore infrastructure. While Cadeler is aware of these climate risks, the company does not yet align with TCFD recommendations.



Appendix 1: Referenced Documents List

Document Number	Document Name	Description
1	Green Finance Framework 07282020	
2	Environmental Policy 06032020	
3	Human Rights Policy 07142020	
4	Sustainable development policy 06032020	
5	Biodiversity Policy 09042018	
6	Supply Chain Policy	
7	Sustainable Ship Recycling 07062020	
8	Climate Resilience Policy 07062018	



Appendix 2: About CICERO Shades of Green

CICERO Green is a subsidiary of the climate research institute CICERO. CICERO is Norway's foremost institute for interdisciplinary climate research. We deliver new insight that helps solve the climate challenge and strengthen international cooperation. CICERO has garnered attention for its work on the effects of manmade emissions on the climate and has played an active role in the UN's IPCC since 1995. CICERO staff provide quality control and methodological development for CICERO Green.

CICERO Green provides second opinions on institutions' frameworks and guidance for assessing and selecting eligible projects for green finance investments. CICERO Green is internationally recognized as a leading provider of independent reviews of green finances, since the market's inception in 2008. CICERO Green is independent of the entity issuing the finance, its directors, senior management and advisers, and is remunerated in a way that prevents any conflicts of interests arising as a result of the fee structure. CICERO Green operates independently from the financial sector and other stakeholders to preserve the unbiased nature and high quality of second opinions.

We work with both international and domestic issuers, drawing on the global expertise of the Expert Network on Second Opinions (ENSO). Led by CICERO Green, ENSO contributes expertise to the second opinions, and is comprised of a network of trusted, independent research institutions and reputable experts on climate change and other environmental issues, including the Basque Center for Climate Change (BC3), the Stockholm Environment Institute, the Institute of Energy, Environment and Economy at Tsinghua University and the International Institute for Sustainable Development (IISD).

