



Ørsted

Green Finance Second Opinion

May 10, 2022

Ørsted is a Danish power and heat producer. With roots in oil and gas development, around 15 years ago the issuer took a strategic decision to transition to renewable sources. In 2021, 90% of Ørsted's energy generation was from renewables. By the end of 2021, the issuer had reached 13.0 GW of renewable capacity, with the majority tied to offshore wind. The issuer will complete phasing out coal in its power and heat plants in 2023. Ørsted has operations in Denmark, the UK, Ireland, Germany, the Netherlands, Malaysia, Japan, Latvia, Estonia, Vietnam, Poland, Sweden, the US, and Taiwan.

The framework considered in this second opinion is an update of Ørsted's previous framework from 2019. Proceeds could earlier only be allocated to wind projects, however in the updated framework proceeds can be allocated to a wider renewable energy project category, which includes wind (offshore and onshore), solar, and integrated power storage. Renewable energy is key to a low carbon transition. Ørsted has informed us that proceeds predominantly will go to offshore wind projects and that newer projects will be prioritised.

Ørsted has in place sound management and governance structures that support the implementation of this framework. The issuer is transparent about its methods to calculate impacts and has since the last framework strengthened its scope 3 emissions reporting. Ørsted considers climate scenarios when designing offshore wind projects. The issuer has also started to follow the TCFD recommendations. The issuer has achieved results from its engagement towards suppliers on climate issues, for example making key suppliers report scope 3 emissions. The issuer has provided annual green bond reports under its previous framework and commits to the same reporting under this framework.

Wind projects require large amounts of materials, and end-of-life handling can be challenging for both wind and solar projects. We are encouraged by Ørsted's initiatives on the matter, for example, its moratorium on landfilling. However, dismantling and recycling complex materials remains a pressing challenge for the industry.

CICERO Green assesses that Ørsted is likely aligned with the relevant EU Taxonomy mitigation thresholds, with electricity generation from wind and solar PV technology substantially contributing to climate change mitigation. Ørsted is also likely aligned with the applicable Do No Significant Harm (DNSH) criteria and the EU Taxonomy's minimum social safeguards.

Based on the overall assessment of the eligibility criteria in this framework, governance, and transparency considerations, the framework receives an overall **CICERO Dark Green** shading and a governance score of **Excellent**. We encourage Ørsted to continue to strive to find solutions for end-of-life handling and to continue its focus on supplier emissions.

SHADES OF GREEN

Based on our review, we rate Ørsted's Green Finance Framework **CICERO Dark 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 Ørsted's framework to be **Excellent**.



GREEN BOND AND LOAN PRINCIPLES

Based on this review, this framework is found to be aligned 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 May 2022. This second opinion remains relevant to all green bonds 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.

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

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 bond 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 Ørsted's Green Finance Framework and related policies

Ørsted is a Danish energy company engaged in the production of power and heat. The issuer develops, constructs, and operates offshore and onshore wind farms, solar farms, energy storage facilities, renewable hydrogen and green fuels facilities, and bioenergy plants. Ørsted ranks as the world's most sustainable energy company in Corporate Knights' 2022 Index of the Global 100 most sustainable corporations in the world and is recognised on the Carbon Disclosure Project (CDP) Climate Change A list as a global leader in climate action. Ørsted is planning to have zero coal-based units, phasing out its two last coal-based units in 2023, and is not entering into any new long-term natural gas purchase agreements.

Until October 2017, Ørsted was known as DONG Energy, with its roots in North Sea oil and gas development, production, and transmission. About 15 years ago, DONG started its shift towards renewable energy, especially offshore wind. The issuer sold its upstream oil and gas business in September 2017. In October 2017, DONG Energy changed its name to Ørsted. The issuer has around 6800 employees and is majority-owned by the Danish state. The issuer's headquarter is in Frederica, Denmark, and has operations in Denmark, the UK, Ireland, Germany, the Netherlands, Malaysia, Japan, Latvia, Estonia, Vietnam, Poland, Sweden, the US, and Taiwan.

Ørsted's activities are organised into three business units, offshore wind, onshore, and bioenergy & other. In 2021, 90% of Ørsted's energy generation was from renewables. By the end of 2021, the issuer had reached 13.0 GW of renewable capacity. Offshore wind constitutes the largest business unit and consists of 28 wind farms. In 2021, Ørsted matured its portfolio with five offshore farms under construction. In 2021, there was a 15% decrease in the EBITDA, excluding new partnerships, for offshore wind compared to 2020. Ørsted's annual report states that the decrease is the consequence of significantly lower wind speeds. The business area onshore develops, operates, and owns onshore wind, solar PV, and storage projects. Ørsted operates 30 onshore solar PV and storage assets globally, the majority of which are based in the US.

The business area bioenergy & other consists of bio converted CHP plants and ancillary service plants. Another part of the business area is to provide route-to-market services for their own and third-parties electricity, power certifications, and gas. Bioenergy & other contributed to 19% of EBITDA in 2021, which is a substantial increase compared to earlier years. The annual report provided by Ørsted informs that the EBITDA from CHP was 188% higher in 2021 than in 2020, due to higher power prices and generation in Denmark, combined with higher earnings from ancillary services.

Environmental Strategies and Policies

The issuer reports emissions to the CDP and according to GHG Protocol standards. In 2019, Ørsted widened the emission sources for scope 3 to include all emissions categories where there is relevant data. The emission sources include nine emissions categories in total, including life-cycle emissions from suppliers and materials. Its biggest emission source is natural gas sales which constitute 70% of emissions. In 2021, fossil fuel-based heat and power generation was accountable for 98% of the total scope 1 emissions, approximately two million tonnes of CO₂e in total. The main source for scope 2 emissions (location-based) was power purchased for the generation of heat in boilers at Ørsted's Combined Heat and Power (CHP) plants. Scope 3 emissions constitute almost 90% of all emissions. Its baseline year for tracking its performance is 2018.



Ørsted has an aspiration to become the world's leading green energy major. In 2021, its installed renewable energy production capacity was 13GW, and is aiming to reach 50GW by 2030. By 2040, Ørsted is aiming for a 99.8% reduction in GHG emissions from energy generation and operations in scopes 1-2. As part of the 2040 target the issuer has also set a target to have a 99% reduction in GHG emissions intensity in scopes 1-3 by 2040 and a 90% reduction in scope 3 emissions target from wholesale buying and selling of natural gas. Its total GHG emissions connected to scope 3 emissions have decreased yearly since 2019, a total 38% decrease since 2018. Its GHG intensity (scope 1, 2, and 3) was close to the same level in 2021 as in 2020 (165g CO₂e/kWh), however, it has set targets to have no more than 2,9g CO₂e/kWh in 2040, corresponding to the 99% intensity reduction target, and states that it is on track to reach this target. The issuer has also set a science-based net-zero emissions target to be net-zero by 2040 validated by the Science Based Targets Initiative (SBTi).

Ørsted works to reduce its supply chain emissions through its supply chain decarbonisation strategy. The issuer informs us that since the launch of the program in 2020, suppliers have strengthened their emissions data, and in 2021, 97% of their strategic suppliers disclosed their emissions data to the CDP, and 26% have either set or committed to set a science-based emissions reduction target validated by the SBTi. Before the launch of the program, only 46% reported to the CDP and no one had set a science-based emissions reduction target.

Ørsted has since 2016 had a policy on resource management where it seeks to integrate circular design in its resource management processes. The issuer commits to encourage reducing, reusing, and recycling of resources, and to collaborating with suppliers and contractors to design products and work processes to minimise resource consumption and landfilling disposal. Ørsted also has a management system called "Way we Work" that is certified by ISO14001 and covers the entire offshore wind organisation. The ISO standard includes considering life cycle stages that can then be controlled and managed by Ørsted. In 2021, Ørsted performed a full-scale life cycle assessment of an offshore wind project in Taiwan, to get an updated overview of the environmental footprint across all components of an Ørsted offshore wind farm. The results will form the basis of an in-house tool to support its strategy on resource use for future projects. In 2021, Ørsted announced a ban on the landfilling of blade waste that took effect immediately.

The issuer reports on protected areas and endangered species in its ESG performance report for all wind projects. It has set an ambition to deliver a net-positive biodiversity impact on all its renewable energy projects that are commissioned from 2030 at the latest. The issuer is now in the process of developing the definition of "net-positive biodiversity impact." Ørsted has joined the Science-Based Targets Network Corporate Engagement Program to help develop nature science-based targets and advice on biodiversity, land, water, and oceans.

For offshore wind, Ørsted's engineering design process includes analysing that its projects can withstand the impact of different climate hazards even in a worst-case climate scenario as projected by the IPCC. All projects have an Environmental Impact Assessment (EIA) process, where risks are identified, consulted on, and managed.

The issuer has a policy for community engagement in all projects to avoid controversies or to manage opposition to projects from affected communities. Ørsted engages with various stakeholder groups in project areas. An assessment of the likely impacts on the local communities informs the choice of engagement during construction and operations, ranging from economic opportunities to charity.

The issuer follows TCFD recommendations. In 2021, the issuer started to report on its Taxonomy-eligible activities.



Use of proceeds

Eligible activities are in the category “renewable energy” in the form of any wind generating project, onshore wind generating project, or solar power project, in each case including any integrated power storage component. Specifically, investments can be related to wind turbines, blades, solar panels, foundations, cables, transformers, transmission assets, engineering, and any other element being part of the completion of offshore wind, onshore wind, or solar project. Geographically, projects can be based in all countries where Ørsted has operations and will depend on ongoing projects. The net proceeds can be allocated to finance, or re-finance, a pool of eligible projects.

New financing includes projects finalised or taken into operation up to 12 months prior to approval for green financing by the Ørsted sustainability committee. The issuer states that it will endeavour to prioritise new projects in relation to the allocation of proceeds from new green financing.

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.

Eligible Projects to be financed with proceeds from Ørsted’s green finance instruments will be evaluated, selected, and prioritised by the sustainability department in cooperation with the treasury department at Ørsted. Prioritised projects will, on an annual basis, be presented to Ørsted’s sustainability committee for final approval of allocation of green financing proceeds.

Ørsted’s sustainability committee consists of representatives from Ørsted’s sustainability Quality, Health, Safety and Environments (QHSE), people & development, internal audit, and accounting departments, and is chaired by the CFO of the Ørsted group. The committee makes decisions unanimously as a group.

Management of proceeds

CICERO Green finds the management of proceeds of Ørsted to be aligned with the Green Bond and Loan Principles.

According to the framework, the net proceeds from any green finance instruments will be managed by the treasury department in Ørsted. Such net proceeds will be credited to a separate account in Ørsted’s books (“green account”) to support and document Ørsted’s green financing of eligible projects.

Green financing proceeds credited to the green account will in full or in part, on an annual basis, be allocated from the green account to Ørsted’s green project portfolio in respect of financing and/or refinancing eligible projects as approved by Ørsted’s sustainability committee.

Until all net proceeds from green bonds have been allocated to eligible projects, the balance of the green account will be included in Ørsted’s liquidity reserve and managed following the cash management policies and investment mandates. According to the issuer, these prohibit investments in products that are directly related to the financing of fossil energy.

Ørsted aims to maintain a stable pool of eligible projects but may, at any time, and subject to their discretion, substitute one or more projects in the pool with other eligible projects. If for any reason, a financed eligible project



no longer meets the eligibility criteria the issuer will remove this project from the green project portfolio and substitute it with another eligible project.

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.

According to the framework, Ørsted will publish an annual report to investors specifying the allocation of proceeds and the targeted impact of the eligible projects financed with green financing, in its green bond impact report. Allocation reporting is done on a project-by-project basis and impact reporting on a portfolio basis. The report will be made publicly available on Ørsted's website.

The report will include:

- Allocation reporting
 - A list of green financing and allocated amounts
 - Listing the eligible projects financed, including project descriptions and allocated amounts
 - Information about the allocation of proceeds between new projects
 - Unallocated balance of the dedicated green account at year-end if any
- Impact reporting
 - Total capacity of renewable energy production [MW]
 - Annual renewable energy generation [MWh]
 - Annual greenhouse gas emissions avoided [tonnes CO₂e]

The issuer seeks to align the reporting with emerging standards for impact reporting, such as the EU Green Bond Standard. The issuer will use the same methodology for calculating impacts that it has been using in its green finance reports to date. When reporting on avoided emissions, it is calculated with the emissions factor in the country where a specific project is located where it assumes that the generation from wind farms replaces an equal quantity of electricity generated using fossil fuels.

According to the framework, Ørsted's external auditor will on an annual basis provide limited assurance on the allocation, impact reporting, and internal tracking method of the proceeds from green financing. The annual assurance report for green financing will be provided in connection with the green financing report and be made available online. Ørsted's internal auditor will review and report on the allocation of proceeds and internal tracking methods of the proceeds from green financing instruments.

Under its previous framework, Ørsted has published green bond impact reports, the first published in 2017 when it was named "green bond investor letter." The most updated report was published in 2021 and is available on Ørsted's website.



3 Assessment of Ørsted’s Green Finance Framework and policies

The framework and procedures for Ørsted’s green bond and loan 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 Ørsted 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 Ørsted’s framework, we rate the framework **CICERO Dark Green**.

Eligible projects under the Ørsted’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 bonds 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 	Investment activities must be related to the development, construction, or installation of offshore wind, onshore wind, and solar power generation facilities including an integrated power storage units. Specifically, investments can be related to wind turbines, blades, solar panels, foundations, cables, transformers, transmission assets, engineering, and any other element being part of the completion of offshore wind, onshore wind, or solar project.	Dark green <ul style="list-style-type: none">✓ Renewable energy, including wind and solar power, plays a vital role on the path to a low carbon transition.✓ Ørsted estimates that allocated proceeds will predominately go to wind projects. The issuer informs us that historically it has focused on large-scale offshore projects, and these are expected to continue to be prioritised.



- ✓ For both wind and solar power end-of-life handling should be important consideration. The issuer's policy on resource management led to its ban on landfilling blade waste and has also led to a focus on how to reduce and improve steel use.
- ✓ The issuer informed us that it has performed a full-scale life cycle assessment of an offshore wind project in Taiwan, to get an updated overview of the environmental footprint across all components of an Ørsted offshore wind farm. The results will form the basis of an in-house tool to support its strategy on resource use for future projects. We are encouraged to see that life cycle assessments are actively being used to improve resource use.
- ✓ The issuer works to improve its supply chain emissions through its supply chain decarbonisation strategy and has already seen an improvement in emission reporting from its suppliers.
- ✓ Wind projects can have an environmental impact on local communities and can be linked to resistance from locals. Ørsted has routines to engage with affected stakeholders and communities in all projects to manage local concerns.
- ✓ Renewable energy projects carry biodiversity risks. The issuer has set a goal to have a net-zero biodiversity impact, however, the methodology on



how to achieve this is not yet defined. The issuer has informed us that it has a close dialogue with stakeholders both at the governmental level, and with relevant NGOs like WWF, to ensure that it has the “best practice” biodiversity policies and procedures.

- ✓ Ørsted has confirmed that proceeds will not be used for fossil fuel machinery or the acquiring, maintenance, or operation of vessels.

Table 1. Eligible project categories



Background

Global electricity demand increased 6% in 2021, the highest growth since 2010.¹ Consequently, this propelled an exceptional demand where coal's cost competitiveness generated an increase of around 9% in coal-fired electricity. Low-carbon generation increased by 5.5% in 2021, with 83% of it being renewable. Despite unfavorable weather conditions, absolute growth in renewable electricity generation was the highest ever in absolute terms with a growth of 6%. Nevertheless, with the increase in both demand and coal-fired electricity, CO₂ emissions from electricity rose by close to 7% in 2021 to a record high.¹

Data from 2021, shows that electricity derived from renewable energy in Denmark reached 67 percent of the electricity supply, where wind energy contributed 46.8 percent and biomass contributed 11.2 percent.² The Danish Government has placed the green transition at the heart of its policy with, among other things, a national climate goal to reduce greenhouse gases by 70% by 2030, relative to 1990 levels. With the adoption of a national Climate Act in December 2019, the target has become binding. The climate ambitions of the regional authorities are high too with an overarching climate goal to reduce CO₂ emissions by 75% by 2030. In addition, the municipalities have committed to indicate how they plan to adapt and improve resilience towards climate change based on expected climate scenarios in short, medium, and long-term using as a minimum an IPCC's medium scenario for emissions.

EU Taxonomy

The EU Taxonomy is a classification system establishing a list of environmentally sustainable economic activities.³ The regulation defines six environmental objectives. To be considered sustainable, an activity must substantially contribute to at least one of the six environmental objectives without harming the other objectives ("Do No Significant Harm"), while complying with minimum social safeguards. So far, the EU has adopted delegated acts under the regulation that set out the technical screening criteria for the climate mitigation and adaptation objectives, respectively. The DNSH-criteria are developed to make sure that progress against some objectives is not made at the expense of others and recognises the relationships between different environmental objectives. Relevant EU-Taxonomy activities for Ørsted are listed below. This review does not consider contexts outside of the EU where Ørsted currently operates.

CICERO Green has assessed eligible projects for Ørsted's framework against the mitigation thresholds, the DNSH criteria for relevant activities in the delegated act adopted in June 2021 (Annex 1) and the minimum social safeguards.

Relevant EU-Taxonomy activities are:

- Electricity generation from solar photovoltaic technology
- Electricity generation from wind power

Detailed comments on alignment as well as thresholds and NACE codes are given in Appendix 1.

¹ [Electricity Market Report - January 2022 – Analysis - IEA](#)

² [Denmark - Renewable Energy Products \(trade.gov\)](#)

³ Regulation EU 2020/852 <https://eur-lex.europa.eu/legalcontent/EN/TXT/PDF/?uri=CELEX:32020R0852&from=EN>



CICERO Green assesses that all project categories are likely aligned with the mitigation criteria in the EU Taxonomy, with electricity generation from wind and solar PV technology substantially contributing to climate change mitigation. Ørsted also appears to be likely aligned with all the DNSH-criteria. Transition to a circular economy is a particular challenge for the wind and solar industry. Ørsted considers that no scalable solution for the use of highly durable and recyclable components currently exists, however its assessment of these issues and its demonstrable ambition to seek and collaborate in developing solutions suggest it is likely aligned.

Alignment with minimum social safeguards

To qualify as a sustainable activity under the EU regulation certain minimum social safeguards must be complied with. CICERO Green has assessed the issuer's policies and processes with a focus on human and labour rights. We take the sectoral, regional, and judicial context into account and, based on information received from the company, focus on the risks likely to be the most material social risks.

Ørsted appears to fulfil the minimum social safeguards. The issuer has several policies in place to ensure responsible business conduct and has integrated the OECD social risk due diligence process. Ørsted has processes in place to identify their most material human rights risks, performs risk screening of potential suppliers, and maps and identifies potential high-risk suppliers where on-site assessments can be carried out. Ørsted also has a whistle-blowing mechanism available to all stakeholders, where anonymous reporting is possible. Notwithstanding the impressive systems Ørsted appears to have in place, risks will remain given its operations include e.g. certain high-risk supply chains, including solar panel production. It is therefore crucial it continues to further develop its mechanisms to map and handle social risk.

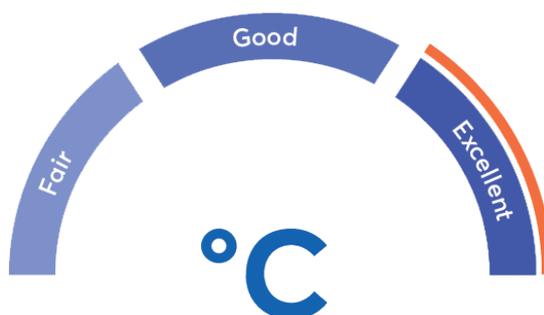
Governance Assessment

Four aspects are studied when assessing the Ørsted'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, and 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.

Ørsted has a clear strategy that is supported by strong targets that could point towards the successful realisation of the framework. One example is that it targets 50GW installed renewable energy production capacity by 2030. The issuer shows considerations of wider climate and environmental impacts associated with renewable energy by having net-zero targets, its resource management program, and looking to become net biodiversity positive. The issuer also performs assessments to see if its projects can withstand the worst-case climate scenario as projected by the IPCC. All projects have an Environmental Impact Assessment (EIA) process, where risks are identified, consulted on, and managed.

Ørsted's selection process is clear and involves personal with environmental competence. Risks are considered in the selection process, for example, physical risks, biodiversity risks, and local impacts. The issuer also has an extensive screening process for suppliers. Suppliers are encouraged to report emissions to the CDP and the issuer engages with key suppliers quarterly.

Ørsted commits to publishing an annual public report. Allocations are reported by the project and





avoided emissions potential is reported for each financial instrument. Avoided emissions are reviewed by an external consultant. The issuer is transparent with its methodology and chosen baselines.

The overall assessment of Ørsted's governance structure and processes gives it a rating of **Excellent**.

Strengths

It is a strength that the framework focuses exclusively on renewable energy. Ørsted has defined clear climate targets and has strong policies that contribute to the path towards a low carbon future. One example is its resource management program, which has contributed to its ban on landfilling wind turbine blades and its improved steel use.

We also consider it to be a strength that the issuer has developed on ambitions that were mentioned in its earlier framework, for example, that it now follows recommendations made by the TCFD, has strengthened its scope 3 emission reporting, and its work toward the supply chain.

We are encouraged by Ørsted's work towards supplier emissions through its supply chain decarbonisation program. We welcome Ørsted's ambition for its renewable projects to deliver a net-positive impact from 2030, although definitions and methodology remain under development. Using results from life cycle assessments to form the basis of an in-house tool to improve resource use is also encouraging to hear.

Weaknesses

We find no material weaknesses in Ørsted's framework.

Pitfalls

All wind projects, especially offshore wind projects, require large amounts of materials such as steel and concrete for foundations or towers. Renewable energy technologies often contain materials where end-of-life is challenging, for example, complex materials such as components in solar panels or wind turbine blades. Although we are encouraged by Ørsted's initiatives on the matter, for example, to stop landfilling wind turbine blades and work with partners on how to handle end-of-life for complex components, dismantling and recycling complex materials remains a pressing challenge for the industry.

Renewable energy projects can cause local opposition for a variety of reasons. Such risks can increase in the case of large projects. Opposition can to some extent be mitigated via stakeholder engagement, though engagement has its limits. For example, in the Nordic context risks remain around the interference of wind farms with indigenous rights, in particular with regard to reindeer herding: in 2021, the Norwegian Supreme Court stripped two Norwegian wind farms off their licenses given the interference with the rights of the indigenous Sami people,⁴ with similar decisions possible in other Nordic jurisdictions.

The construction and maintenance of offshore wind farms include employing large vessels. Vessels are used for transport, groundwork, construction, or dredging, and their employment can stretch over several years. These vessels are a considerable source of carbon emissions. The issuer informed us that it has looked at options like optimising sailing routes and sailing at fuel-saving speeds to lower energy use and emissions, but in general, there are currently limited possibilities to reduce the footprint. The issuer informed us that no proceeds will be used for vessels.

⁴ [Naturvernorganisasjoner og samiske interesser har gått sammen for å stanse Øyfjellet Wind i Vefsen – NRK Nordland](#)



Appendix 1: EU Taxonomy criteria and alignment

Complete details of the EU Taxonomy criteria are given in [taxonomy-regulation-delegated-act-2021-2800-annex-1 en.pdf \(europa.eu\)](https://eur-lex.europa.eu/eli/reg/2021/1023/oj/annex-1)

Electricity generation from wind power

Framework activity	Renewable energy		
Taxonomy activity	Electricity generation from wind power (NACE codes D.35.1.1 and F 42.22)		
	EU Technical mitigation criteria	Comments on alignment	CICERO Green's comments on alignment
Mitigation criteria	<ul style="list-style-type: none"> Substantial contribution to climate change mitigation. The activity generates electricity from wind power. 	<p>Relevant contextual information</p> <ul style="list-style-type: none"> Wind power is assumed to contribute substantially to climate change mitigation. 	Likely aligned
	EU Taxonomy DNSH-criteria	Comments on alignment	Alignment
Climate change adaptation	<p>The physical climate risks that are material to the activity have been identified (chronic and acute, related to temperature, wind, water, and soil) by performing a robust climate risk and vulnerability assessment with the following steps⁵:</p> <ul style="list-style-type: none"> (a) screening of the activity to identify which physical climate risks from the list in Section II of this Appendix may affect the performance of the economic activity during its expected lifetime; (b) where the activity is assessed to be exposed to physical climate risks, a climate risk, and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity; (c) an assessment of adaptation solutions that can reduce the identified physical climate risk. <p>The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports, scientific peer-reviewed publications, and open source or paying models.</p>	<p>Information provided by the issuer</p> <p>The issuer has conducted an analysis with subject matter experts on engineering design processes to create an assessment process that is tailored to meet the climate change adaptation criterion. Ørsted has assessed and documented how asset resilience towards different chronic and extreme climate hazards and their future development is an integrated part of Ørsted's onshore and offshore project development. This includes screening of climate hazards, asset vulnerability assessment, and developing adaptation solutions in their engineering processes. Ørsted has confirmed that its assets are resilient and able to withstand projected climate changes during their lifetime. To do so, they have extracted the most recent climate data from the IPCC Interactive Atlas. Afterwards, The IPCC data was mapped to the list of relevant climate hazards and provided to subject matter experts, who assessed whether Ørsted's current processes cover future</p>	Likely aligned

⁵ The Taxonomy is referring to Appendix A in the Taxonomy Annex 1.



	<p>For existing activities and new activities using existing physical assets, the economic operator implements physical and non-physical solutions ('adaptation solutions'), over a period of time of up to five years, that reduce the most important identified physical climate risks that are material to that activity. An adaptation plan for the implementation of those solutions is drawn up accordingly.</p> <p>For new activities and existing activities using newly built physical assets, the economic operator integrates the adaptation solutions that reduce the most important identified physical climate risks that are material to that activity at the time of design and construction and has implemented them before the start of operations.</p> <p>The adaptation solutions implemented do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities; are consistent with local, sectoral, regional or national adaptation strategies and plans; and consider the use of nature-based solutions or rely on blue or green infrastructure to the extent possible.</p>		
<p>Sustainable use and protection of water and marine resources</p>	<ul style="list-style-type: none"> In case of construction of offshore wind, the activity does not hamper the achievement of good environmental status as set out in Directive 2008/56/EC⁶ of the European Parliament and of the Council, requiring that the appropriate measures are taken to prevent or mitigate impacts in relation to that Directive's Descriptor 11 (Noise/Energy), laid down in Annex I to that Directive, and as set out in Commission Decision (EU) 2017/848159 in relation to the relevant criteria and methodological standards for that descriptor. 	<p>Information provided by the issuer</p> <p>An Environmental Impact Assessment (EIA) is always conducted as part of any project to ensure that potential impacts on water and marine resources are avoided, mitigated, and addressed appropriately. The issuers policies on water and biodiversity further set out their approach.</p> <p>Noise is one of the impacts assessed in the EIA, and relevant mitigation is identified, consulted on and applied as part of that process. In general terms this involves determining the noise sensitive receptors in the receiving environment, modelling noise introduced into the receiving environment due to piling or other relevant activities, and refining projects parameters and/ or implementing appropriate mitigation where required to bring noise impacts within permitted thresholds.</p>	<p>Likely aligned</p>
<p>Transition to a circular economy</p>	<ul style="list-style-type: none"> The activity assesses availability of and, where feasible, uses equipment and components of high durability and recyclability and that are easy to dismantle and refurbish. 	<p>Information provided by the issuer</p> <p>The issuer's 'Resource management policy' sets out their commitment to sustainable consumption and production. They work strategically with circular initiatives to recycle materials at the end of life and optimise resource use through their sustainability program called "Circular resource use" where they strive to minimize consumption of resources in their operations and supply chain through action plans and sub-targets.</p>	<p>Likely aligned.</p> <p>Ørsted considers that no scalable solution for the use of highly durable and recyclable components currently exist, however</p>

⁶ The EU-Directive establishing a framework for community action in the field of marine environmental policy. [EUR-Lex - 32008L0056 - EN - EUR-Lex \(europa.eu\)](#)



		<p>In 2021, they announced a ban on the landfilling of wind turbine blades taking effect immediately. Any decommissioned blades will be sustainably reused or recycled.</p> <p>All Ørsted fully operational offshore and onshore windfarm sites operate in accordance with the ISO 14001 standard</p>	<p>its assessment of these issues and its demonstrable ambition to developing solutions suggests it is likely aligned.</p>
<p>Protection and restoration of biodiversity and ecosystems</p>	<ul style="list-style-type: none"> Please see under Transmission and distribution of electricity. <p>In case of offshore wind, the activity does not hamper the achievement of good environmental status as set out in Directive 2008/56/EC, requiring that the appropriate measures are taken to prevent or mitigate impacts in relation to that Directive’s Descriptors 1 (biodiversity) and 6 (seabed integrity), laid down in Annex I to that Directive, and as set out in Decision (EU) 2017/848 in relation to the relevant criteria and methodological standards for those descriptors.</p>	<p>The issuer has set the ambition to deliver a net-positive biodiversity impact from all new renewable energy projects commissioned from 2030 at the latest. They have joined the Science Based Targets Network Corporate Engagement Program to help develop nature science-based targets and advance long-term development of tools and guidance to measure its impact and dependencies on biodiversity, land, water and oceans. Ørsted works to build experience on how they can deliver projects that have a net-positive impact on biodiversity.</p> <p>All Ørsted’s wind projects have conducted EIAs in compliance with legal requirements. As part of this, they take the necessary steps to avoid, mitigate, or address potential impacts on biodiversity and ecosystems for all projects. Ørsted has a biodiversity policy for offshore wind that outlines its principles and governance for protecting biodiversity.</p>	<p>Likely aligned</p>

Electricity generation from solar photovoltaic technology

Framework activity	Renewable energy		
Taxonomy activity	Electricity generation using solar photovoltaic technology (NACE Code D.35.1.1, F42.2.2)		
Taxonomy version	EU Technical mitigation criteria	Comments on alignment	CICERO Green’s comments on alignment
Mitigation criteria	The activity generates electricity from solar PV technology.	Solar power is assumed to contribute substantially to climate change mitigation.	Likely aligned



	EU Taxonomy DNSH-criteria	Comments on alignment	Alignment
Climate change adaptation	<p>The physical climate risks that are material to the activity have been identified (chronic and acute, related to temperature, wind, water, and soil) by performing a robust climate risk and vulnerability assessment with the following steps:⁸</p> <ul style="list-style-type: none"> a. screening of the activity to identify which physical climate risks from the list in Section II of this Appendix may affect the performance of the economic activity during its expected lifetime; b. where the activity is assessed to be exposed to physical climate risks, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity; c. an assessment of adaptation solutions that can reduce the identified physical climate risk. <p>The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan, such that:</p> <ul style="list-style-type: none"> a. for activities with an expected lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale; b. for all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios consistent with the expected lifetime of the activity, including, at least, 10 to 30 year climate projections scenarios for major investments. <p>The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports, scientific peer-reviewed publications, and open source or paying models.</p> <p>For existing activities and new activities using existing physical assets, the economic operator implements physical and non-physical solutions ('adaptation solutions'), over a period of time of up to five years, that reduce the most important identified physical climate risks that are</p>	<p><u>Information provided by the issuer</u></p> <p>The issuer has conducted an analysis with subject matter experts on engineering design processes to create a process that is tailored to meet the climate change adaptation criterium. Ørsted has assessed and documented how asset resilience towards different chronic and extreme climate hazards and their future development is an integrated part of Ørsted's solar asset development. This includes screening of climate hazards, a vulnerability assessment, and developing adaptation solutions in their engineering processes. Ørsted has confirmed that their assets are resilient and able to withstand projected climate changes during their lifetime. To do so, they have extracted the most recent climate data from the IPCC Interactive Atlas. Afterwards, The IPCC data was mapped to the list of relevant climate hazards and provided to subject matter experts, who assessed whether Ørsted's current processes cover future</p>	Likely aligned



	<p>material to that activity. An adaptation plan for the implementation of those solutions is drawn up accordingly.</p> <p>For new activities and existing activities using newly built physical assets, the economic operator integrates the adaptation solutions that reduce the most important identified physical climate risks that are material to that activity at the time of design and construction and has implemented them before the start of operations.</p> <p>The adaptation solutions implemented do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities; are consistent with local, sectoral, regional or national adaptation strategies and plans; and consider the use of nature-based solutions or rely on blue or green infrastructure to the extent possible.</p>		
Sustainable use and protection of water and marine resources	N/A	N/A	N/A
Transition to a circular economy	The activity assesses availability of and, where feasible, uses equipment and components of high durability and recyclability and that are easy to dismantle and refurbish.	<p>Information provided by the issuer</p> <p>The issuer's 'Resource management policy' sets out their commitment to sustainable consumption and production. They work strategically with circular initiatives to recycle materials at the end of life and optimise resource use through their sustainability program called "Circular resource use" where they strive to minimize consumption of resources in their operations and supply chain through action plans and sub-targets.</p> <p>All Ørsted fully operational solar sites operate in accordance with the ISO 14001 standard</p>	<p>Likely aligned</p> <p>Ørsted considers that solar power projects present the same challenge as wind projects and that there is currently no scalable solution for some elements. However, for solar power projects, we also consider that the issuer's assessment of these issues and demonstrated ambition to develop solutions suggests it is likely aligned.</p>
Pollution prevention and control.	N/A	N/A	N/A
Protection and restoration of biodiversity and ecosystems	<ul style="list-style-type: none"> • An Environmental Impact Assessment (EIA) or screening has been completed in accordance with Directive 2011/92/EU,⁹ or in accordance with national provisions. • Where an EIA has been carried out, the required mitigation and compensation measures for protecting the environment are implemented. • For sites/operations located in or near biodiversity-sensitive areas (including the Natura 2000 network of protected areas, UNESCO World Heritage sites and Key 	<p>Information provided by the issuer</p> <p>The issuer has set the ambition to deliver a net-positive biodiversity impact from all new renewable energy projects commissioned from 2030 at the latest. They have joined the Science Based Targets Network Corporate Engagement Program to help develop nature science-based targets and advance long-term development of tools and guidance to measure its impact and dependencies on biodiversity, land, water and oceans. Ørsted works to</p>	Likely aligned



	<p>Biodiversity Areas, as well as other protected areas), an appropriate assessment, where applicable, has been conducted and based on its conclusions the necessary mitigation measures are implemented.</p>	<p>build experience on how they can deliver projects that have a net-positive impact on biodiversity.</p> <p>All Ørsted's wind projects have conducted EIAs in compliance with legal requirements. As part of this, they take the necessary steps to avoid, mitigate, or address potential impacts on biodiversity and ecosystems for all projects</p>	
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Appendix 2: Referenced Documents List

Document Number	Document Name	Description
1	Green Finance Framework (May 2022)	
2	Ørsted ESG Performance report (2021)	
3	Green Bond Impact report (2021)	
4	Annual report (2021)	
5	Minimum safeguards	Screening performed by Ørsted, it evaluates if its company is aligned with the EU Taxonomy minimum safeguards criteria.
6	Offshore wind DNSH	Screening performed by Ørsted, it evaluates if its business area offshore wind is aligned with the EU Taxonomy Do No Significant Harm (DNSH) criteria.
7	Onshore wind DNSH	Screening performed by Ørsted, it evaluates if its business area onshore wind is aligned with the EU Taxonomy Do No Significant Harm (DNSH) criteria.
8	Solar PV DNSH	Screening performed by Ørsted, it evaluates if its business area Solar PV is aligned with the EU Taxonomy Do No Significant Harm (DNSH) criteria.
9	Modern slavery and human trafficking statement (2020)	



Appendix 3: 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 bond investments. CICERO Green is internationally recognized as a leading provider of independent reviews of green bonds, since the market's inception in 2008. CICERO Green is independent of the entity issuing the bond, 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, the International Institute for Sustainable Development (IISD) and the School for Environment and Sustainability (SEAS) at the University of Michigan.

