



Kingdom of Denmark Green Bond Second Opinion

November 18, 2021

The Kingdom of Denmark (“Denmark”) aims at reducing its carbon emissions by 70% by 2030 from 1990-levels and to achieve climate neutrality by 2050, implemented into law in the Climate Act in 2019. Denmark has achieved a 40% reduction in GHG-emissions and has adopted policies set out to reduce emissions with 57% by 2030, 13 percentage points short of the target. Denmark’s eligible green expenditures aim to contribute to achieving Denmark’s climate commitments, and to be aligned with the EU Taxonomy.

Funds will be allocated to subsidies and tax expenditures to promote renewable energy, investments in the railway systems, and tax exemptions for low carbon vehicles. A majority of funds are allocated to Dark Green activities (renewable energy, electrification of the railways and support to electrical vehicles). Investors should be aware that only 51% of the Danish railway system is currently electrified, and that the framework also allows for expenditures for maintenance and operation of the other 49%. The issuer has confirmed that there are political agreements including financing in place to electrify approximately 80% of Banedanmark’s railway tracks and to introduce charging infrastructure for battery trains and fully battery-powered trains for the remaining 20% of tracks by 2030. The framework also includes tax exemptions for plug-in hybrid vehicles, considered Light Green in the Danish context.

CICERO Green assesses that Denmark’s expenditures are likely aligned with the EU Taxonomy technical mitigation criteria and most DNSH-criteria, except climate change adaptation and transition to a circular economy. Denmark is expected to experience increasingly severe instances of heavy rainfall, wind and extreme weather that could, e.g., impact the railway system. The issuer has assessed climate risks and adaptation solutions for the sectors included in the framework. However, it is unclear whether all assets and investments under the framework will be screened for climate risk and resilience as required by the EU taxonomy. Furthermore, there are gaps related to the circular economy DNSH-criteria. E.g., the issuer cannot confirm that equipment used in solar and wind projects is easy to dismantle and recycle. The Danish government is committed to oversee that business entities respect human rights in its business relationships and seems to have screened investment projects for adherence to the minimum social safeguards. CICERO Green therefore assesses that the issuer is likely aligned with the taxonomy requirements on minimum social safeguards.

The selection of green expenditures is well organized and will be conducted by an inter-ministerial working group (“IMWG”). Relevant impact metrics are provided, and allocation reporting will be externally verified.

Based on an assessment of the framework’s alignment with the Green Bond Principles, the project categories and framework governance, Denmark’s green bond framework receives the overall **CICERO Dark Green** shading and a governance score of **Excellent**. The Dark Green Shading assumes that a majority of proceeds will be allocated to Dark Green activities (electrified railway and vehicles and renewable energy). The issuer could strengthen the government’s work on climate adaptation and circular economy for renewable energy.

SHADES OF GREEN

Based on our review, we rate the Denmark’s green bond framework **CICERO Dark Green**.

Included in the overall shading is an assessment of the governance structure of the green bond framework. CICERO Shades of Green finds the governance procedures in Denmark’s framework to be **Excellent**.



GREEN BOND 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 November 2021. 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 bond 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 Denmark’s green bond framework and related policies

The Kingdom of Denmark (“Denmark”) is the southernmost Scandinavian country and is an archipelagic nation with an area of 42,934 square kilometers. It shares a land border with Germany to the south via the Jutland peninsula. Denmark has a population of 5.8m people and its capital city is Copenhagen. Politically, Denmark is a constitutional monarch and a decentralized unitary state, and a parliamentary representative democracy with 179 members of parliament. Denmark’s government is currently formed by the Social Democratic Party led by Prime Minister Mette Frederiksen.

Environmental Strategies and Policies

Under follows a summary of some of the main sectors contributing to Denmark’s emissions, as well as targets and means of fulfilment. Important sectors not covered in the green bond framework are also included to get a complete picture, examples being bioenergy and buildings.

Denmark’s CO₂ emissions have been declining in the last two decades.¹ Emissions by sector in 2017 are given in Figure 1 below.² Electricity & heat, transport and agriculture represent the highest emitting sectors. The upstream petroleum sector contributes about 3% to the total CO₂-emissions.³ In December 2020, the Danish parliament decided a cancellation of the ongoing 8th licensing round to extract oil and gas and established a final phase-out date of fossil extraction by 2050.

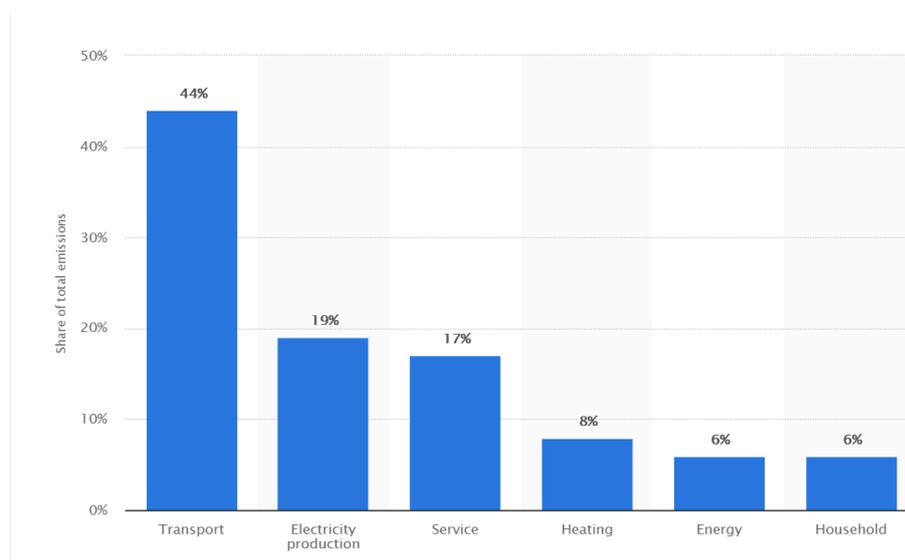


Figure 1: Greenhouse gas emissions by sector in Denmark, 2017⁴.

¹ <https://www.statista.com/statistics/449517/co2-emissions-denmark/>

² [Denmark: share of CO₂ emissions, by sector | Statista](https://www.statista.com/statistics/449517/co2-emissions-denmark/)

³ https://energywatch.eu/EnergyNews/Oil_Gas/article11892481.ece

⁴ [Denmark: share of CO₂ emissions, by sector | Statista](https://www.statista.com/statistics/449517/co2-emissions-denmark/)



Denmark has established an ambitious climate policy framework centering around the Climate Act from 2019. The Climate Act sets out binding targets to reduce Denmark's carbon emissions by 70% by 2030 from 1990-levels and to achieve climate neutrality by 2050. This is more ambitious than the EU 2030 target of 55% emissions reductions. The Climate Act was approved by a majority of the Danish parliament (Folketinget) and will commit current and future climate ministers to the reduction targets.

To facilitate the implementation of the national climate policy, Denmark has established the Danish Council of Climate Change (the "Council"). The Council will provide recommendations on climate change to the government and will carry out an annual assessment on whether the government is on the right path towards the climate change goals. Furthermore, the Minister of Climate, Energy and Utilities must submit a report on Danish climate policy to the Danish parliament, and it is the parliament that will have the final say on whether the planned climate policy is appropriate⁵. The Council has further suggested that Denmark introduces new climate targets every five years. In February 2021, the Council provided its first recommendations under the Climate Act.

To achieve the climate targets set in the Climate Act, Denmark has established a climate programme that was newly published.⁶ In the Climate Programme Denmark is laying down the different policies that must be in place by 2025 to reach the climate target for 2030. The government has established road maps for all sectors, including updated reduction potentials within energy, industry, waste, agriculture and transport. Crosscutting agreements and research will support the efforts to fulfil the targets, and a green research strategy has been launched. A part of the green research strategy is the decision to invest in Power-to-X technologies to develop technologies for storing and converting renewable power into green fuels, also known as electro-fuels, for heavy-duty vehicles, shipping, and aviation. Carbon capture utilization and storage (CCUS) is also expected to contribute to achieving reductions in GHG-emissions, by bringing down fossil emissions and create negative emissions, as well as in reducing emissions within the sectors where it is currently difficult or impossible to bring down emissions. The Danish parliament has also established climate partnerships with the private business sector, recognizing that the private sector must play an important role in achieving the reduction targets.

As a part of the EU, Denmark has established emission reduction targets that comply with international agreements within the EU and the UN, which require emission reductions within both the EU ETS sectors and the non-EU ETS sectors. Emissions from industry and electricity production are regulated by the EU ETS. The EU target for the sectors covered by the EU ETS is a 43% reduction by 2030 from 2005 levels and for non-EU ETS sectors the target is a 30% reduction by 2030.⁷ Denmark's target for the non-EU ETS is a 39% reduction by 2030 from 2005 level (transport, agriculture and buildings). Denmark informed us that a number of agreements were made, e.g., green tax reform, a climate plan for the energy, industry and waste sectors and a climate plan for the transportation sector. The Danish Energy Agency last updated its projection on Denmark's greenhouse gas emissions in April 2021 and in October 2021 a climate plan for agriculture was agreed upon. The update shows that there has been a reduction in Danish GHG-emissions of 40% compared to the 1990 level. The climate plan is expected to bring reductions amounting to a total reduction of 57% in 2030, 13% short of the Climate Act's 70 % target.⁸

In addition to the national ambitions and targets, Denmark also has international climate ambitions and is among others promoting climate measure within the EU, including a climate law, higher climate targets and a ban on petrol and diesel vehicles. To strengthen Denmark's global role in the green transition, the government has appointed its first climate ambassador. The role of the climate ambassador is to make sure that Denmark continues to influence the international climate agenda. The ambassador will work to increase the global climate ambitions in the implementation of the Paris Agreement.

⁵ <https://ens.dk/ansvarsomraader/energi-klimapolitik/fakta-om-dansk-energi-klimapolitik/dansk-klimapolitik>

⁶ [Klimaprogram 2021 \(kefm.dk\)](https://www.kefm.dk/klimaprogram-2021)

⁷ https://ec.europa.eu/clima/policies/ets_en

⁸ [kf21_hovedrapport.pdf \(ens.dk\)](https://ens.dk/kf21_hovedrapport.pdf)



Energy

Denmark is aiming for 55% of total energy consumption to be covered by renewables by 2030, and to reach a low carbon society independent of fossil fuels by 2050. According to the NECP, new capacity is primarily expected to be solar PV and wind, but solid biomass will also play a role in converting the remaining central power plants away from coal. Energy from solar PV and wind will receive financial support through premiums on top of the market price. For the district heating sector, the renewables share is expected to increase from 70.7 % in 2020 to 79.6 % in 2030.

Bioenergy currently represents around 2/3 of Denmark's consumption of renewable energy, and comes in various forms: combustion of solid biomass in combined heat and power (CHP) plants, biogas produced by anaerobic digestion of organic material, thermal gasification of solid biomass, and liquid biofuels (bioethanol and biodiesel) produced from biomass crops and crop residuals.⁹ In October 2020, it was agreed that the required use of advanced biofuels in the transport sector will be 0.3% in 2021. According to the Danish Energy Agency's 2020 biomass analysis, solid biomass in the form of wood, straw and biodegradable waste accounted for 64% of renewable energy (RE) used in Denmark in 2018. More than half of woody biomass used in Denmark is imported from abroad, mainly from Baltic countries (Estonia and Latvia), the US and Russia and other European countries, but also from countries like Brazil¹⁰. Bioenergy in Denmark benefits from financial support through various subsidy rates, feed-in tariffs and feed-in premiums, as well as tax exemptions.¹¹ The use of bioenergy is expected to continue to grow until 2020-2025. After that the consumption is expected to decrease slightly. More than half of the present bioenergy consumption is used for production of district heat and electricity, and the use of bioenergy for these purposes has increased by almost a factor 4 since 2000.

Transport

Within the transportation sector, there are multiple policies and tax exemptions already in place to encourage the increased use of electric vehicles and clean transportation.¹² This includes tax deductions on the registration tax and low ownership tax on zero-emissions vehicles, exemptions on commercial charging and parking fees. There are also programs in place to support municipalities and companies in the purchase of electric cars for fleets. The government has made agreements with 26 municipalities and all 5 regions to electrify bus fleets from varying dates in the coming years. As an example, Copenhagen aims to electrify its entire bus fleet by 2025. To further strengthen these efforts, the NECP incorporates a green mobility plan for the transportation sector that summarizes existing and new initiatives to increase the number of vehicles powered by renewable energy. This includes stopping the sales of new diesel and petrol cars from 2030. With regards to rail bound transportation, train traffic in Denmark accounts for only 2% of total CO₂ emissions in the transport sector. 1,587 km of the state railway network is currently electrified with overhead lines corresponding to 51%. Approximately 80% of Banedanmark's railway tracks will be electrified when the currently decided and funded sections have been rolled out. This will cover 95% of the traffic on the state rail network. With the political agreement of end-June 2021 'Infrastructure Agreement 2035'¹³, all political parties have agreed, that for the remaining 20% of the railway tracks, charging infrastructure for battery trains will be introduced before 2030.

Buildings and energy efficiency

Energy efficiency is a key focus area, specifically within the buildings sector. Today, almost 40% of Denmark's total energy consumption relates to buildings. Denmark is also considered one of the most energy-efficient countries in the world, in large part due to its widespread use of district heating and CHP. Denmark has one of the highest shares (64%) of private households that are connected to district heating in the EU.¹⁴ Improvements in

⁹ <https://ens.dk/en/our-responsibilities/bioenergy/facts-about-bioenergy-denmark>

¹⁰ [biomasseanalyse_final_ren_eng.pdf \(ens.dk\)](https://ens.dk/sites/ens.dk/files/contents/service/file/memo_on_the_danish_support_scheme_for_electricity_generation_based_on_re.pdf)

¹¹ https://ens.dk/sites/ens.dk/files/contents/service/file/memo_on_the_danish_support_scheme_for_electricity_generation_based_on_re.pdf

¹² [Denmark's Recovery and Resilience Plan - accelerating the green transition \(fm.dk\)](https://fm.dk/nyheder/nyhedsarkiv/2021/juni/bred-aftale-om-infrastruktur-for-mere-end-160-mia-kroner-vil-samle-danmark-frem-mod-2035/)

¹³ <https://fm.dk/nyheder/nyhedsarkiv/2021/juni/bred-aftale-om-infrastruktur-for-mere-end-160-mia-kroner-vil-samle-danmark-frem-mod-2035/>

¹⁴ [Fakta om fjernvarme \(danskfjernvarme.dk\)](https://www.danskfjernvarme.dk)



energy efficiency are planned to be achieved mostly through building code regulations that set minimum energy performance standards, as well as building envelope requirements (size, thermal insulation, orientation of windows and glazing), requirements on installations for heating, cooling, lighting (efficiency of boilers, heat pumps, AC), and requirements on overall energy performance. The NECP does not currently have concrete targets set for energy efficiency in buildings, but a subsidy scheme targeting energy efficiency measures in private enterprises and buildings has been established for the period 2021-2026.¹⁵ Furthermore, subsidies are given to phase out the use of oil and gas burners.

Biodiversity

Biodiversity in Denmark is declining in many spheres but there are also some areas in which the speed of decline has slowed, and for some natural habitats and species there are signs of improvements. Main threats to biodiversity are habitats fragmentation from e.g., agricultural developments, eutrophication and land management practices in agriculture and forestry. Many agricultural areas are drained and natural hydrology in wet habitats is lacking in many places.

Climate change is expected to have considerable impacts on food webs, plant and animal compositions in habitats and will in addition impose particular future threats to coastal biodiversity due to sea level rise. Actions are taken in this respect.

The main threats to marine biodiversity in the Danish marine waters are eutrophication, fisheries, and pollution by contaminants. To address this an updated Marine strategy is established¹⁶, as well as international policy instruments.

Denmark has ratified several international conventions concerning nature and biodiversity, e.g., the Convention on Biological Diversity, the Bern Convention the Convention on the Conservation of European Wildlife and Natural Habitats), and the Ramsar Convention on Wetlands. Furthermore, Denmark contributes to the implementation of the EU Birds and Habitats Directives as an EU Member State.

Climate risk and adaptation

Denmark is expected to experience increasingly severe instances of heavy rainfall, wind, higher water levels and more extreme weather events. The Ministry of Environment of Denmark with multiple other relevant ministries including the Ministry of Finance, has set up a platform to access information on climate risks and its consequences for Denmark's key sectors and municipalities.¹⁷ This knowledge is consistently updated and used to inform climate adaptation strategies, both on sector- and municipal levels. For example, the Danish municipality of Hedensted has now incorporated climate change adaptation into its municipal plan for the next 12 years, including improving water management to reduce risk of flooding, avoiding siting projects in locations vulnerable to sea level rise.¹⁸ Similarly, the Danish Road Directorate has published road standards on dealing with drainage, stormwater and seepage basins, and Banedanmark has prepared a climate adaptation strategy to help ensure preparedness for the effects of climate change and identifies relevant adaptive measures where needed. Furthermore, the Danish government has agreed to initiate an investigation to set up a national plan for climate change adaptation, increasing the coordination among authorities on this issue. As part of the work, the planning law's rules for climate adaptation and flood prevention and erosion will also be considered in 2021. According to the issuer, the government expects the inter-ministerial analysis work to be completed in 2022 with a view to political negotiations on a comprehensive national climate adaptation plan first half of 2022.¹⁹

¹⁵ [Tilskud: Læs alt om energitilskuddet 2020-2026 her \(energi.dk\)](https://energitilskuddet2020-2026.energi.dk)

¹⁶ https://mfvm.dk/fileadmin/user_upload/MFVM/Natur/Havstrategi/Danish_Marine_Strategy_II_UK.pdf

¹⁷ <https://en.klimatilpasning.dk/>

¹⁸ <https://en.klimatilpasning.dk/cases/items/hedenstedplansaheadforanewclimate/>

¹⁹ [Comprehensive climate adaptation plan kicks off \(mst.dk\)](https://mst.dk)



Use of proceeds

Green bonds issued in accordance with this framework will seek to finance or refinance expenditures exclusively from central government expenditures. Denmark aims to align the use of proceeds to the EU Taxonomy, and economic activities that are not currently covered by the EU Taxonomy will not be considered.

Denmark plans to allocate proceeds to two Green Bond Principles project categories: Renewable Energy and Clean Transportation. Denmark will issue the first bond in 2022. For the budget year 2021, Denmark assumes that 65% of the proceeds will be allocated to clean transportation, followed by renewable energy (35%). In addition, Denmark expects to allocate approximately 32% to grants and subsidies, 18% to tax expenditures, 16% to OPEX incl. administrative costs and 34% to CAPEX. Eligible expenditures include, but may not be limited to, subsidies, tax expenditures including tax-exemptions, operational expenditures and investment expenditures. To the extent possible, intangible expenditures, such as administrative costs, will only be included if they are deemed relevant and necessary for the realization of tangible real assets.

Eligible green expenditures may include expenditures towards government agencies and institutions, which could potentially issue green bonds themselves following the governance as described in the framework. In these cases, expenditures will be reviewed in detail and the Ministry of Finance (“MoF”) will coordinate with the agencies and institutions in question to avoid double-counting of eligible green expenditures. Only expenses from the year of issuance and the year immediately preceding the issuance will be considered.

Denmark will exclude expenditures directly related to fossil fuel energy. Expenditures aimed at increasing the incentive for buying and using plug-in hybrid-vehicles are included as Denmark considers them being an important intermediate step in the transition to fully electric cars while the charging infrastructure is developed. Operating expenditures related to railway maintenance are included and could in some instances indirectly support diesel-based trains until the remaining railway tracks are either electrified or diesel-based trains are replaced with battery trains.²⁰ Denmark also excludes other expenditures, however not exhaustive, related to the defense and the weapons sector, gambling, alcoholic beverages, and tobacco.

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 responsibility of issuing debt to finance the central government budget resides with Danmarks Nationalbank, which acts on behalf of the government with respect to the green bond issuance. Eligible green expenditures are selected in accordance with Denmark’s overall climate strategy and sustainability priorities of the Danish government and aim to contribute to achieving Denmark’s climate commitments. The selection is managed by the MoF, in its role as coordinator, with support from the respective Ministries in the Inter-Ministerial Working Group (“IMWG”) and other experts. According to the issuer, the IMWG will make decisions based on consensus, with the MoF holding a veto power.

The ministries that have identified possible expenditures are responsible for providing technical support for further identification of eligible expenditures and providing input to the annual reporting. The Debt Management Office (“DMO”) at Danmarks Nationalbank is responsible to issue green bonds on behalf of the MoF and will be an

²⁰ Expected to be implemented by 2030, <https://fm.dk/nyheder/nyhedsarkiv/2021/juni/bred-aftale-om-infrastruktur-for-mere-end-160-mia-kroner-vil-samle-danmark-frem-mod-2035/>.



observer in the IMWG. The IMWG also includes the three ministries with identified green expenditures: Ministry of Transport, Ministry of Climate, Energy and Utilities and Ministry of Taxation.

The overarching eligibility criteria set by the green bond framework are: 1) Alignment to the criteria in the latest applicable version of the EU taxonomy at the time of the assessment. Eligible green expenditures must be assessed to comply with the applicable Technical Screening Criteria (“TSC”), and to a reasonable extent, be assessed to comply with the Do No Significant Harm Criteria (“DNSH”). Further, it is intended that eligible green expenditures will adhere to the EU Taxonomy minimum social safeguards; 2) expenditures must have a concrete and direct link to the stated objective (this, e.g., includes inseparable operational expenditures); and 3) expenditures must be directly financed by the government budget to avoid any risk of double counting. Expenditures that in any way are being financed by dedicated funding, including expenditures from Denmark’s Recovery and Resilience Plan are excluded from the eligible green expenditures. The issuer informed us that for the respective individual expenditures it is not feasible to apply a traditional LCA/technical screening.

The IMWG provides a final list of eligible expenditures to Danmarks Nationalbank to be used for allocation and management of proceeds. The MoF will once a year review the identified possible expenditure list. The IMWG can confirm and/or amend the list accordingly. In addition, the MoF will initiate a process to identify new potential eligible green expenditures. The members of the IMWG may suggest additional appropriation accounts for review that are deemed relevant.

The issuer has established an appendix in the framework providing summaries of each of the categories identified with details on the EU Taxonomy screening considerations, including the associated EU objective, technical screening criteria, Do-No-Significant-Harm criteria, NACE codes and more. The IMWG will have representatives from each of the ministries that have identified eligible expenditures. The different line ministries will be responsible for the EU Taxonomy screening for relevant expenditures under its ministry. The MoF will select new eligible green expenditures in consultation with the IMWG. New expenditures will be subject to review by an external verifier.

Management of proceeds

CICERO Green finds the management of proceeds of Denmark to be in accordance with the Green Bond Principles. Danmarks Nationalbank is in charge of the management of proceeds based on the final list of eligible expenditures provided by the IMWG and with input from the MoF. The eligible expenditures are linked to an appropriation account in the central government annual Budget Act, except for tax expenditures. Through these accounts each sub-category of eligible expenditures can be tracked and managed consistently over time. An amount equal to the proceeds from green bond issuances will be linked to eligible green expenditures, once the national financial annual report is published and the central government’s realized expenses are known. The MoF will determine how proceeds from issuance of the green bonds are allocated towards eligible green expenditures. The allocation of proceeds forms the basis for the allocation and impact reports.

Upon signing of the annual Budget Act, the MoF will inform Danmarks Nationalbank of the amount eligible from the coming year and confirm the remaining amount of unallocated eligible expenditures from the current year.

Danmarks Nationalbank may only issue green bonds corresponding to the amount of identified eligible green expenditures, except for a safety margin, that takes account for the uncertainty about the incurrence of expenses within the current year. The MoF will determine the size of this buffer and inform Danmarks Nationalbank. Proceeds are continuously monitored by Danmarks Nationalbank within the existing debt management setup and mapped up against the amount of eligible green expenditures, to ensure that proceeds do not exceed the amount of eligible green expenditures.



Proceeds from issuance of green bonds form part of Denmark's overall national funding and are managed in line with the regular treasury policy, i.e. proceeds are transferred to the central government's account at Danmarks Nationalbank, where they are held until expenses are incurred. Any remaining amount of eligible green expenditures from the previous year will be confirmed between the MoF and Danmarks Nationalbank and is eligible to be financed by proceeds from green bond issuance in the coming year. Following this confirmation, Danmarks Nationalbank is authorized to issue green bonds up to an amount corresponding to the amount of identified eligible green expenditures in the year of issuance and any remaining eligible green expenditures from the year immediately preceding the issuance. Hence, unallocated proceeds are not used for temporary investments options, such as fossil fuel related assets, but will remain on the central government's account at Danmarks Nationalbank until a withdrawal is made in connection with the expense being incurred.

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.

The investor report will consist of allocation reporting as well as impact reporting. The allocation reporting includes a list of allocated eligible expenditures and a breakdown of expenditures including per type as well as identified eligible expenditures and unallocated proceeds. The issuer informs that there will be an annual allocation report until full allocation of the proceeds.

The IMWG is in charge of collecting impact data and compiling the green bond investor report. The reporting will be published annually, to the extent relevant and feasible. The issuer informs that to the extent possible, the reports will be drawn up using the templates published in the proposal for an EU Green Bond Standard.

The impact report will outline the environmental impact of the use of the bond proceeds. To the extent feasible, the report will include:

- An outline of the environmental objectives targeted with the eligible green expenditures
- Detailed descriptions of selected allocated eligible green expenditures
- An estimation of positive and adverse environmental impacts of the issuance in aggregated form
- Output and environmental impact metrics at expenditure level
- An outline of the methodology and assumptions used to evaluate the impacts of the expenditure

Relevant metrics are suggested. Impact reporting will also be published on an annual basis, to the extent feasible. The issuer will complete a third-party review of the allocation reporting in line with the Green Bond Standard (GBS) proposal, and the results will be available on Danmarks Nationalbank's website.



3 Assessment of Denmark’s green bond framework and policies

The framework and procedures for Denmark’s green bond investments are assessed and its 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 Denmark 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 Denmark’s green bond framework, we rate the framework **CICERO Dark Green**. The overall shading is based on the expected share of proceeds presented in table 1. Proceeds will be allocated to all shades of green investments from Light to Dark green.

Eligible projects under the Denmark’s green bond framework

At a 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 its 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”.

The proceeds of the Green Bond of the Danish government are allocated to certain budget posts under various directorates and agencies. The budget proposition describes the use of these budget posts and hence the criteria for use of proceeds under the framework.

These budget posts have been selected following the selection procedure of the green bond framework. We note the dominance of allocation to renewable energy related projects (mainly wind and solar PV) and clean transportation (mainly rail).

In **Table 1** below, we assign the main expenditures described above to categories as defined by the Green Bond Principles. We assign a separate shade of green to each of them. A more detailed description of the expenditures follows after the table.

Category	Eligible project types	Green Shading
Renewable Energy	Environmental objective: <ul style="list-style-type: none">Expenditures are intended to support the production and development of renewable energy, thereby contributing to climate change mitigation. Expenditure types include subsidies and tax expenditures.	Dark Green





	<p>Examples of expenditures include, but may not be limited to:</p> <ul style="list-style-type: none"> • Subsidies for electricity generation using solar photovoltaic (PV) technology. • Subsidies for electricity generation from small wind turbines used in residential applications. • Subsidies for electricity generation using onshore and offshore wind power. • Taxation of electricity (Exemption for own consumption of electricity from solar energy) <p>EU Taxonomy activities include, but may not be limited to:</p> <ul style="list-style-type: none"> • 4.1. Electricity generation using solar photovoltaic technology • 4.3. Electricity generation from wind power 	
<p>Clean Transportation</p>  	<p>Environmental objective:</p> <ul style="list-style-type: none"> • Expenditures are intended to support the development and maintenance of infrastructure needed for sustainable modes of personal and mass public transportation. Expenditure types include operating expenditures, capital expenditures, and tax expenditures. <p>Examples of expenditures include, but may not be limited to:</p> <ul style="list-style-type: none"> • Rail infrastructure operation, renovation and maintenance. • Rail infrastructure investment projects (including electrification of the railway network). • Registration tax (Reduced registration tax for low emission and zero-emission vehicles) <p>EU Taxonomy activities include, but may not be limited to:</p> <ul style="list-style-type: none"> • 6.5. Transport by motorbikes, passenger cars and light commercial vehicles • 6.14. Infrastructure for rail transports 	Dark to Medium Green

Table 1. Eligible project categories

The expenditures presented in the table above are described in more details below in an abridged, and hence slightly incomplete and simplified form. The percentages refer to share of total green bond funding for the first two budget years.

Renewable energy (35 %, Dark Green)

PSO-expenditures and subsidies to renewable energy production (30%)²¹: The aim of these expenditures is to promote renewable energy production. The subsidies increase the competitiveness of various renewable energy sources against fossil fuel energy and makes some higher cost energy sources more feasible. The Energy Agency pays the subsidies to producers of renewable energy to the electricity grid. The majority of subsidies are planned

²¹ PSO stands for public service obligation and was originally a tariff program on utility bills. Utility users would pay a tariff based on power consumption, and the revenue would be diverted to clean energy producers in the electricity grid. The agreement was made in 2016 ([Publikation \(kefm.dk\)](http://kefm.dk)) and the start of the phasing out period started in 2017. From 2018 a government act reformed the system, wherein the tariff would be gradually phased out while keeping the subsidy element intact, so that it will be financed by the general government budget. In 2021 the tariff will be completely phased out and the subsidy will be completely government financed for the first time.



to support offshore wind. Onshore wind and other wind related costs also represent a significant portion of planned subsidies. In order to establish the projects, and thereby receive the subsidies, it is required to conduct an Environmental Impact Assessment (EIA).

Renewable energy related subsidies (3%, Dark Green): The programs are dedicated to subsidies to private persons or companies to generate renewable energy, focusing on solar PV. According to the issuer bioenergy is excluded from the green framework.

Renewable Energy tax expenditures (3%, Dark Green): The tax expenditures cover various exemptions in the tax code that give an implicit subsidy to end consumers. The main renewable energy related tax expenditure is the tax exemption of renewable energy, that promotes the use of renewable energy sources. The specific exemptions include electricity from among others owned solar panels and a reduced fee for dwellings registered as heated by electricity.

Clean Transportation (65 %, mostly Dark Green, but also some Medium and Light Green elements)

Investments in railroad projects, operation, maintenance and renovation (49%, Dark to Medium Green):

This covers investment projects related to improving existing railroad service or expanding the railroad service to new areas. Regarding the activity for investment in railroad projects around 45% of the proceeds for 2021 related to railroads are dedicated to electrification of the railways, while 50% are primarily dedicated to the ERTMS²² and to a lesser degree building new line tracks and increasing speed/capacity on existing line tracks (5%). According to information from the issuer, full deployment of the ERTMS is essential to enable the rail sector to meet the European Green Deal's ambitious targets and the milestones set by the Sustainable and smart mobility strategy for 2030 and 2050. However, the ERTMS can also be installed in non-electric tracks/trains.

1,587 km of the state railway network is currently electrified with overhead lines corresponding to 51%. Cargo rail transport is already almost exclusively done by electrical locomotives and the passenger rail transport infrastructure is undergoing intensive electrification. Approximately 80% of Banedanmark's railway tracks will be electrified when the currently decided and funded sections have been rolled out. This will cover 95% of the traffic on the state rail network. With the political agreement of end-June 2021 'Infrastructure Agreement 2035'²³, all political parties have agreed, that for the remaining 20% of the railway tracks, charging infrastructure for battery trains will be introduced before 2030.

Today the train traffic in Denmark accounts for only 2% of total CO₂ emissions in the transport sector, or approximately 0.2 million tonnes of CO₂.²⁴ The electrification and battery train operation combined is planned to reduce the current CO₂ footprint with the correspondent amount of CO₂ and make the train traffic CO₂ free.

The maintenance and upgrade programs of Banedanmark (CAPEX and OPEX) cover expenditures to keep existing railroad service intact for use throughout the year. The expenditures are divided into a component for operational expenditures reflecting spare parts and salaries for the maintenance workers as well as capital expenditures into replacement parts. Equipment for maintenance of rail infrastructure will for the foreseeable future remain powered by fossil fuelled combustion engines, as few or no electrified alternatives exist within this space of heavy machinery and equipment. Furthermore, the infrastructure can in principle be used by fossil fuel powered trains. The issuer informs us that 51% of the state railways are electrified today, and that these lines also are the busiest lines. Taking the future total need for renewal and maintenance into consideration, while adjusting for new economic priorities in the political agreement 'Infrastructure Agreement 2035' the issuer assumes that

²² European Rail Traffic Management System, [European Rail Traffic Management System \(ERTMS\) | ERA \(europa.eu\)](https://era.europa.eu/era/)

²³ <https://fm.dk/nyheder/nyhedsarkiv/2021/juni/bred-aftale-om-infrastruktur-for-mere-end-160-mia-kroner-vil-samle-danmark-frem-mod-2035/>

²⁴ <https://www.ttm.dk/publikationer/2020/serviceeftersyn-af-jernbanen/>



approximately 70% or more of future funds allocated to renewal and maintenance activities will relate to electrified infrastructure, while the case will be somewhere close to 70% for 2021. These funds are allocated a Dark Green shading. Remaining expenditures related to maintenance and operation will be associated with diesel operated systems and equipment and be shaded Medium Green.

According to the issuer, the financing under the green bond framework is not dedicated to fossil fuel transportation. However, the investors should be aware that the issuer cannot guarantee that fossil fuels cannot be transported and stored using Danish rail transport infrastructure.

Clean transportation tax expenditures (15%, Light to Dark Green): The tax expenditures cover various exemptions in the tax code that give an implicit subsidy to end consumers of electric vehicles and plug-in hybrid vehicles. The current structure entails that the registration tax on zero-emission vehicles is discounted to 40% of the full tax, and then subtracted a flat fee of up to 170.000 DKK in 2021. The current tax expenditure includes low-emission vehicles, such as plug-in hybrids, with emissions up to 50g CO₂/km. The registration tax on low-emission vehicles is discounted to 45% of the full tax, and then subtracted a flat fee of up to 50.000 DKK in 2021. Plug-in hybrid vehicles can run on gasoline and will not be a part of an emissions free transport system. However, they may play a role in reducing emissions while the charging infrastructure is developing. While the support of zero-emission vehicles constitutes a Dark Green solution, tax exemptions for plug-in hybrids with a short range can only be seen as Light Green in the Danish context. In other countries with no or nearly no electric charging infrastructure and a shortage of electricity this might be shaded Medium Green.

EU Taxonomy assessment

The EU Taxonomy, first introduced in 2020, seeks to set out common classification systems to determine the environmental sustainability of activities. The EU-taxonomy regulation²⁵ defines six environmental objectives. To be considered environmentally sustainable, an activity must substantially contribute to one or more of the six objectives, not significantly harm any of the other six objectives (Do-No-Significant-Harm - DNSH) and comply with the technical screening criteria (TSC). In June 2021, EU published its delegated acts outlining the TSC for climate adaptation and mitigation objectives, respectively, which it was tasked to develop after the Taxonomy Regulation entered into law in July 2020.

CICERO Green has assessed eligible expenditures in Denmark's green bond framework against the mitigation thresholds and the DNSH criteria in the Annex 1 (mitigation) to the delegated act published in April 2021²⁶. CICERO Green has in addition conducted a light touch assessment of the minimum safeguards (social aspects) of the EU Taxonomy.

Relevant EU-Taxonomy activities are:

- Electricity generation using solar photovoltaic technology (4.1)
- Electricity generation from wind power (4.3)
- Transport by motorbikes, passenger cars and light commercial vehicles (6.5)
- Infrastructure for rail transport (6.14)

Comments on alignment are given below, and detailed thresholds, NACE-codes and likely alignment with DNSH criteria are given in Appendix 2. Where information was not provided by the issuer, and information was not easily accessible through searching other publicly available sources, CICERO Green has not been able to assess alignment.

²⁵ EU-Taxonomy regulation (2020/852), <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32020R0852&from=EN>

²⁶ [taxonomy-regulation-delegated-act-2021-2800-annex-1_en.pdf](https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32021D2800-annex-1_en.pdf) (europa.eu)



Alignment with mitigation criteria

CICERO Green assesses that the green expenditures are likely aligned with the mitigation criteria in the EU Taxonomy:

- ✓ Electricity generation using solar PV technology and wind power is assumed to contribute to climate change mitigation.
- ✓ The eligibility criteria given for transport by motorbikes, passenger cars and light commercial vehicles is to be lower than 50gCO₂/km and is aligned with the taxonomy criteria.
- ✓ The EU Taxonomy requirement for Infrastructure for rail transport is i.a. a plan for electrification within 10 years from the beginning of the activity. The issuer confirms that there are plans for its railway trackside infrastructure and associated subsystems to be either electrified or readied for battery train operation by 2030, with electrified line tracks taking up approximately 80% of the network length and line tracks with charging infrastructure for battery trains taking up the remaining 20%.
- ✓ The issuer confirms that no part of the infrastructure is dedicated to the transport or storage of fossil fuels. However, the investors should be aware that the issuer cannot guarantee that fossil fuels cannot be transported and stored using Danish rail transport infrastructure.

Alignment with minimum social safeguards

Denmark has a strong protection of its citizens' human rights and is involved in many international human rights initiatives and has ratified all main human rights conventions and ILO core conventions. Denmark has established an OECD contact point that handles complaints against companies for non-compliance of the OECD guidelines. Since 2013, Denmark has reporting requirements stating that the largest Danish companies expressly must state in its reporting what measures they are taking to respect human rights and to reduce its impact on the climate. If the company does not have policies for human rights or climate issues, this must also be disclosed. The purpose is to further strengthen Danish companies' activities in relation to human rights and climate change.²⁷

The sectors covered by the framework have inherent risks for human rights violations both in the supply chain and in the construction phase. This is particularly relevant where direct investments are supported, like for the railway expenditures. Where states themselves own or control companies such as those that receive substantial support and services from state agencies, states are under the United Nations Guiding Principles on Business and Human Rights (UNGPs) expected to take additional steps to ensure these do not cause or contribute to human rights abuses.²⁸ The green bond framework refers to the relevant social safeguards and confirms that the Danish government is committed to oversee that Danish business entities respect international human rights in its operations and in its business relationships, both at home and abroad. The issuer has furthermore included in the selection process an intention that all eligible green expenditures will adhere to the minimum social safeguards. The issuer also informs that all contracts and framework agreements in Banedanmark with a total estimated value of more than DKK 1 million have a CSR-appendix enclosed. Here the contractor ensures that its own workers and the workers of any subcontractors, are subject to the worker's rights conditions of the same character as in the trade or industry concerned. Furthermore, Banedanmarks projects have since 2020 been subject to systematic and risk-based controls by a central control unit established to make sure contractors adhere to social safeguard clauses set out in the contracts. Investment projects selected for the framework therefore seem to have been screened for adherence to minimal social safeguards. CICERO Green assesses that the issuer is likely aligned to the Taxonomy requirement on social safeguards.

Alignment with DNSH-criteria

Denmark appears to be likely aligned to several of the DNSH-criteria (see appendix 2).

²⁷ <https://globalnaps.org/country-ungp/denmark-3/>

²⁸ https://www.ohchr.org/Documents/Publications/GuidingPrinciplesBusinessHR_EN.pdf page 6



Main gaps

Climate change adaptation. The issuer seems to have assessed climate risk for the activities included in the green bond framework. More extreme weather may lead to a need to secure facilities against changing weather conditions, but the issuer has assessed that those consequences are limited for renewable energy in Denmark.²⁹ The issuer informs that the energy sector to a great extent is considered to be equipped for the changing climatic conditions, among others because vulnerable power supply network is largely made up of underground cables. Banedanmark has prepared a climate adaptation strategy focusing on heavy and / or persistent rainfall, storm surges, temperature fluctuations and extremes and storm and winds. The strategy aims to help ensure preparedness for the effects of climate change and identifies relevant adaptive measures where needed. Similarly, the Danish Road Directorate has published road standards on dealing with drainage, stormwater and seepage basins.

However, it is unclear whether all assets and investments under the framework will be screened for climate risk and resilience as required by the EU taxonomy. CICERO Green encourages the issuer to include climate risk assessments in the requirements related to the subsidy schemes and/or the tendering for new projects.

Transition to a circular economy. The issuer is only partly aligned with the DNSH-requirement related to Transition to a circular economy for the activities:

- Electricity generation using solar PV technology and Electricity generation from wind power. The issuer informs that it is likely that the activity related to PV technology will use equipment and components of high recyclability, however, this cannot be confirmed. Furthermore, only 56 % of WEEE³⁰ was separately collected in Denmark in 2019. The issuer further informs that it is currently limited recycling options for the composite materials in the wind turbine blades, that are either incinerated, co-incinerated with cement or also buried in landfills. The European wind turbine industry is committed to end the latter practice by 2030. Even though the expenditures related to solar PV and wind focuses on expenditures and subsidies and not on production of solar PV-panels or wind turbines, the amount of waste – including non-recyclable waste - from end of life from renewable energy will increase and the existing waste system must be adapted to handle this increase.
- For the activity Transport by motorbikes, passenger cars and light commercial vehicles the issuer does not possess sufficient information to conclude on alignment with the criteria related to reuse and recyclability criteria.

Governance Assessment

Four aspects are studied when assessing the governance procedures of Denmark's green bond framework: 1) the policies and goals of relevance to the green bond 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.

Denmark has ambitious binding targets to reduce carbon emissions and has introduced sectoral reduction targets and focus areas to achieve the targets. It is commendable that the Danish parliament has decided to cancel the ongoing 8th licensing round to extract oil and gas and established a final phase-out date of fossil extraction by 2050.

The selection of green expenditures is well organized and will be conducted by an inter-ministerial working group ("IMWG") coordinated by the MoF, with individual ministries being able to submit projects to the IMWG. Selection will be based on consensus with the MoF holding a veto power. Proceeds and expenditures are linked to dedicated government accounts and can be tracked and managed, and there will likely not be unallocated proceeds. Reporting will consist of allocation reporting as well as impact reporting, and relevant impact metrics are provided.

²⁹ [Climate change impact on energy \(klimatilpasning.dk\)](https://www.klimatilpasning.dk)

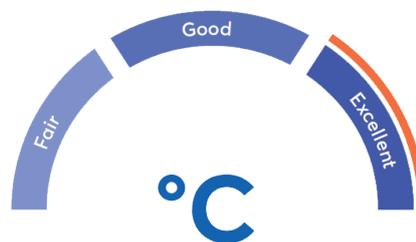
³⁰ Waste from Electrical and Electronic Equipment (WEEE).



The issuer confirms that allocation reporting will be externally verified. CICERO Green encourages the issuer to introduce external verification also of the impact reporting.

Some ministries/municipalities have mapped climate risks, and this is informing climate adaptation strategies or projects. However, it is unclear whether all assets and investments under the framework will be screened for climate risk and resilience.

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



Strengths

Denmark has ambitious climate and environmental targets and is focusing investments under this framework on its two most emitting sectors, energy and transport. Under these categories, the issuer is focusing on solar PV and wind power related expenditures as well as rail-based transportation. It is commendable that the Danish parliament has decided to cancel the ongoing 8th licensing round to extract oil and gas and established a final phase-out date of fossil extraction by 2050.

It is a strength that Denmark is seeking to align its framework with the EU taxonomy. This provides guidance to investors and includes elements of additional screening for projects financed under this framework.

It is a strength that Denmark excludes financing of intangible expenditures, such as administrative costs, which will only be included if they are deemed relevant and necessary for the realization of tangible real assets, such as transportation infrastructure.

Weaknesses

CICERO Green finds no material weaknesses in Denmark's green bond framework.

Pitfalls

We note the inclusion of fossil fuel elements in the clean transportation category, e.g., for tax exemptions for plug-in hybrid vehicles. While plug-in hybrids may play a role in reducing emissions while the charging infrastructure is developing these vehicles can be run on gasoline alone. In addition, there may also be elements of fossil fuel use in the investments and maintenance of railway networks (only 51% of Denmark's railway network is currently electrified). Furthermore, the issuer cannot guarantee that fossil fuels might be transported and stored using Danish rail transport infrastructure. We encourage the government to apply the highest standards for all its activities such as supporting zero emission vehicles where feasible and apply strict environmental requirements in the supply chains.

Denmark is expected to experience increasingly severe instances of heavy rainfall, wind, higher water levels and more extreme weather events. Climate risk can be high for infrastructure like railways, as well as for the energy sector, sectors included in this framework. However, it is unclear whether all assets and investments under the framework will be screened for climate risk and resilience as required in the EU Taxonomy. CICERO Green encourages the issuer to include climate risk assessments in the requirements related to the subsidy schemes and/or the tendering for new projects.



Denmark's plans for its railways to be 100% either electrified or readied for battery train operation within the coming 10 years are agreed upon in the political agreement 'Infrastructure Agreement 2035'.³¹

While administrative costs are excluded where possible under this framework, there are nevertheless some necessary administrative costs and operating expenditures included. The impact of these costs may be difficult to assess. Furthermore, impact reporting might be challenging due to the breadth of investments, including maintenance. We encourage the issuer to introduce external verification of the impact reporting.

³¹ <https://fm.dk/nyheder/nyhedsarkiv/2021/juni/bred-aftale-om-infrastruktur-for-mere-end-160-mia-kroner-vil-samle-danmark-frem-mod-2035/>



Appendix 1: Referenced Documents List

Document Number	Document Name	Description
1	Green Bond Framework, dated November 2021.	Green Bond Framework
2	Overview of projects, dated August 2021.	Excel file with budget overview for eligible projects.
3	Statistics on Denmark https://www.dst.dk/Site/Dst/Udgivelser/GetPubFile.aspx?id=28923&sid=denmark2018	
4	Mapping Climate Change, Task force on Climate change Adaptation, Danish Nature Agency, dated May 2012.	Giving input on adaptation climate change and strategies in Denmark. Mapping climate change (klimatilpasning.dk)
5	How to manage cloudburst and rainwater, Action plan for a climate-proof Denmark, dated December 2012.	Giving input to climate change adaptation solutions.
6	Various taxonomy screenings provided by the relevant ministries.	
7	Elektrificeringsprogrammet.	Electrification programme overview document.
8	One pager documents on various programmes and projects financed, e.g., on railways, national parks, energy etc.	
9	Various documents on Denmark's science programmes.	
10	Biomass analysis, May 2020. biomasseanalyse_final_ren_eng.pdf (ens.dk)	A study by the Danish Energy Agency on biomass in Denmark
11	Overview of biomass types used	Excel document with a break out of various biomass types in Denmark



Appendix 2: 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/2021/2800/annex_1_en.pdf)

Electricity generation using solar photovoltaic (PV) technology

Framework activity	Renewable energy		
Taxonomy activity	4.1 Electricity generation using solar photovoltaic technology (NACE Code D35.11)		
	EU Technical mitigation criteria	Comments on alignment	Alignment
Mitigation criteria	<ul style="list-style-type: none"> Substantial contribution to climate change mitigation. The activity generates electricity using solar PV technology. 	<p>Taxonomy description of the activity:</p> <ul style="list-style-type: none"> Construction or operation of electricity generation facilities that produce electricity using solar photovoltaic (PV) technology. Solar PV is assumed to contribute substantially to climate change mitigation. <p>Information provided by the issuer: The main portion of eligible expenditures are:</p> <ul style="list-style-type: none"> Subsidy aimed at supporting the production of electricity from small-scale solar photovoltaic (PV) systems to increase the competitiveness against fossil fuel-based energy. Producers of electricity from solar PV will receive financial support through premiums on top of the market price. Tax exemption for electricity generation from solar energy for own consumption. Aims to promote the use and exploitation of renewable energy. 	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 steps³²:</p> <p>(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;</p>	<p>Contextual information:</p> <ul style="list-style-type: none"> Renewable energy (such as wind and solar PV systems) will be exposed to climate risks giving increased wear/breakage of equipment (from e.g. storms, snow loads and hail) that will lead to a disruption in the energy generation. 	Likely partly aligned.

³² The Taxonomy is referring to Appendix A in the Taxonomy Annex 1.



	<p>(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;</p> <p>(c) an assessment of adaptation solutions that can reduce the identified physical climate risk.</p> <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 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>Information provided by the issuer:</p> <ul style="list-style-type: none"> Denmark is expected to experience increasingly severe instances of heavy rainfall, wind, higher water levels and more extreme weather events. The Ministry of Environment of Denmark with multiple other relevant ministries including the Ministry of Finance, has set up a platform to access information on climate risks and its consequences for Denmark's key sectors and municipalities.³³ Information is regularly updated and used to inform climate adaptation strategies, both on sector- and municipal levels. The energy sector is to a great extent considered to be equipped for the changing climatic conditions. More extreme weather, e.g. with stronger winds, changing precipitation (hail/ice/snow), may lead to a need to secure facilities against changed weather conditions. However, the issuer has assessed that those consequences are to be limited for renewable energy in Denmark³⁴. Furthermore, the vulnerable power supply network is largely made up of underground cables. It is unclear whether all assets and investments under the framework will be screened for climate risk and resilience as required in the EU taxonomy. 	
Sustainable use and protection of water and marine resources	N/A	N/A	N/A

³³ <https://en.klimatilpasning.dk/>

³⁴ [Climate change impact on energy \(klimatilpasning.dk\)](#)



Transition to a circular economy	<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 informs that</p> <ul style="list-style-type: none"> the activity does not assess the availability of equipment and components of high durability and recyclability and that are easy to dismantle and refurbish. There is insufficient information on the use of equipment and components of high durability that are easy to dismantle and refurbish. However, it is likely that the activity will use equipment and components of high recyclability. The WEEE³⁵ Directive requires that a minimum of 80 % of separately collected waste from photovoltaic panels shall be prepared for re-use and recycled. Only 56 % of WEEE was separately collected in Denmark in 2019. Currently, PV waste is still very limited in Denmark due to the fact that Denmark is still a relatively new market for PV installations and, thus, end-of-life panels.³⁶ Even though the expenditures related to solar PV focus on expenditures and subsidies and not on production of solar PV-panels, the amount of waste – including non-recyclable waste - from end of life from renewable energy will increase and the existing waste system must be adapted to handle this waste. 	Likely partly aligned.
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 screening³⁷ should be completed in accordance with national provisions³⁸. 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, 	<ul style="list-style-type: none"> Not applicable for roof top solar systems. <p>Relevant contextual information</p> <ul style="list-style-type: none"> The Danish Act of Environmental Assessment (EAA) transposes the EIA Directive⁴⁰ and the SEA Directive⁴¹. For projects on either annex 1 or 2 of EAA an EIA or a screening must be completed, before the developer commences the work The 	Likely aligned.

³⁵ Waste from Electrical and Electronic Equipment (WEEE), [EUR-Lex - 02012L0019-20180704 - EN - EUR-Lex \(europa.eu\)](#)

³⁶ <https://mim.dk/media/223007/handlingsplan-for-cirkulaer-oekonomi.pdf>

³⁷ The procedure through which the competent authority determines whether projects listed in Annex II to Directive 2011/92/EU is to be made subject to an environmental impact assessment (as referred to in Article 4(2) of that Directive).

³⁸ Or with the EU Directive 2011/92/EU

⁴⁰ [EU Directive 2011/92/EU as amended by the EU Directive 2014/52/EU](#)

⁴¹ EU Directive 2001/42/EU.



	<p>UNESCO World Heritage sites and Key Biodiversity Areas, as well as other protected areas), an appropriate assessment³⁹, where applicable, has been conducted and based on its conclusions the necessary mitigation measures are implemented.</p>	<p>development consent must describe any features of the project and/or measures envisaged either by the developer or as an obligatory result of other assessments to avoid, prevent or reduce and, if possible, offset significant adverse effects on the environment as well as, where appropriate, monitoring measures. The development consent must also describe how these measures are implemented by the developer, and shall determine the procedures regarding the monitoring of significant adverse effects on the environment. The type of parameters to be monitored and the duration of the monitoring shall be proportionate to the nature, location and size of the project and the significance of its effects on the environment.</p> <ul style="list-style-type: none"> • The Directive 2011/92/EU of the European Parliament and of the Council of 13 December 2011 on the assessment of the effects of certain public and private projects on the environment as amended was transposed by the Act 425/2016 on Environmental Assessment of plans and programs and of projects. The most recent consolidated version is Act 1976/2021. The Ministry of Transport and Building has transposed separate legislation concerning major road-, bridges- and railway projects and the Ministry of Food, Agriculture and Fisheries has transposed separate legislation concerning intensive livestock breeding projects • The EU Birds and Habitats directives are implemented in Denmark, and through the latest update of the Biodiversity strategy the Natura 2000 is considered to be fully implemented. If activities are located in areas that are especially environmentally vulnerable or contain special natural assets that need protection a full EIA will normally be required⁴². Denmark has per 2019 10 world heritage sites⁴³. 	
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³⁹ In accordance with Directives 2009/147/EC and 92/43/EEC.

⁴² [report_dk_en.pdf \(europa.eu\)](#)

⁴³ [World Heritage Sites in Denmark - World Heritage Journey](#)



Electricity generation from wind power

Framework activity	Renewable energy		
Taxonomy activity	4.3 Electricity generation from wind power (NACE code D35.11)		
	EU Technical mitigation criteria	Comments on alignment	Alignment
Mitigation criteria	<ul style="list-style-type: none"> Substantial contribution to climate change mitigation. The activity generates electricity from wind power. 	<p>Taxonomy description of the activity:</p> <ul style="list-style-type: none"> Construction or operation of electricity generation facilities that produce electricity from wind power. Wind power is assumed to contribute substantially to climate change mitigation. <p>Information provided by the issuer: The main portion of eligible expenditures are</p> <ul style="list-style-type: none"> Subsidy aimed at supporting the production and development of electricity from small scale onshore wind turbines. Subsidy aimed at supporting the production of electricity from wind power to increase the competitiveness against fossil fuel-based energy. Producers of electricity from wind turbines receive financial support through premiums on top of the market price to increase the competitiveness against fossil fuel-based energy. Subsidy is granted to producers of electricity using wind power from onshore and offshore wind farms. 	Likely aligned.
	EU Taxonomy DNSH-criteria	Comments on alignment	Alignment
Climate change adaptation	Please see under Energy generation using solar PV.	<p>Information provided by the issuer:</p> <ul style="list-style-type: none"> The energy sector is to a great extent considered to be well equipped for the changing climatic conditions. More extreme weather with stronger wind may lead to a need to secure facilities against changing weather conditions. However, the consequences are assessed to be limited, as the wind turbines are secured against high wind speeds. In case of storm and high wind speeds, the wind turbines will shut down, whereby electricity production ceases. Further, the vulnerable power supply network is largely made up of underground cables. The safety of windmills is regulated in Executive Order no. 1773 of 30 November 2020 on technical certification and servicing of wind turbines. The Executive Order is pursuant to section 33, section 58b(1), section 60 and section 73(1) of the Act on promotion of renewable energy, cf. Consolidating Act no. 1791 of 2 September 	Likely partly aligned.



		<p>2021. The Executive Order has been notified in draft form in accordance with European Parliament and Council Directive 98/34/EC (the Information procedure directive), as amended in Directive 98/48/EC. The purpose of the Executive Order is to ensure wind turbines that are constructed on land, in territorial water, and in the exclusive economic zone, and which are used for the production of electrical energy, do not carry a risk to the safety and health of persons and livestock, as well as the security of property, when wind turbines are installed, maintained, or used. The Executive Order is amended periodically to ensure the continued safety of wind turbines.</p> <p>Please also see under Electricity generation using Solar PV.</p>	
Sustainable use and protection of water and marine resources	<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 EU Marine Strategy Framework Directive (2008/56/EC) 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) 2017/848 in relation to the relevant criteria and methodological standards for that descriptor. 	<p>Relevant contextual information:</p> <ul style="list-style-type: none"> The EU EIA-directive (Directive 2014/52/EU) is implemented in Denmark. The directive requires an EIA for wind farms. See PV systems criteria on Protection and restoration of biodiversity and ecosystems for information on EU EIA. During the tendering process of a wind farm in Denmark, an exhaustive Environmental Impact Assessment (EIA) of the designated area, export cable route, and grid connection is completed by the Danish Transmission System Operator (TSO), Energinet, and fully consented before the bidding date.⁴⁴ 	Likely aligned.
Transition to a circular economy	<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> <ul style="list-style-type: none"> The activity does not assess the availability of equipment and components of high durability and recyclability and that are easy to dismantle and refurbish. There are very limited recycling and refurbishing options for the composite materials that make up a large part of the wind turbine blades. The rest of the wind turbine has a high recyclability and is easy to dismantle. The blades are either incinerated, co-incinerated in a cement kiln or more likely buried in landfills. The European wind turbine industry is committed to end the landfilling of wind turbine blades and to reuse, recycle or incinerate all the blades from 2030. The industry is currently developing and commercializing technologies to make wind turbine blades recyclable in the future. 	Likely partly aligned.

⁴⁴ https://ens.dk/sites/ens.dk/files/Globalcooperation/Short_materials/environmental_impacts_of_offshore_wind_farms.pdf



Pollution prevention and control	N/A	N/A	N/A
Protection and restoration of biodiversity and ecosystems	<ul style="list-style-type: none"> • Please see under Energy generation using Solar PV. • 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. 	<ul style="list-style-type: none"> • The EU EIA-directive (Directive 2014/52/EU) is implemented in Denmark. The directive requires an EIA for wind farms. • The directive is not applicable for single turbines with a height less than 25 meters. • See Electricity generation from solar PV for information EU EIA. 	Likely aligned.



Transport by motorbikes, passenger cars and light commercial vehicles

Framework activity	Clean transportation		
Taxonomy activity	6.5 Transport by motorbikes, passenger cars and light commercial vehicles (NACE Code H49.3)		
	EU Technical mitigation criteria	Comments on alignment	Alignment
Mitigation criteria	<ul style="list-style-type: none"> Substantial contribution to climate change mitigation <p>The activity complies with the following criteria:</p> <p>(a) for vehicles of category M1 and N1⁴⁵, both falling under the scope of Regulation (EC) No 715/2007: (i) until 31 December 2025, specific emissions of CO₂, as defined in Article 3(1), point (h), of Regulation (EU) 2019/631, are lower than 50gCO₂/km (low- and zero-emission light-duty vehicles); (ii) from 1 January 2026, specific emissions of CO₂, as defined in Article 3(1), point (h), of Regulation (EU) 2019/631, are zero.</p> <p>(b) for vehicles of category L⁴⁶, the tailpipe CO₂ emissions equal to 0g CO₂/km calculated in accordance with the emission test laid down in Regulation (EU) 168/2013.</p>	<p>Taxonomy description of the activity:</p> <ul style="list-style-type: none"> Purchase, financing, renting, leasing and operation of vehicles designated as category M1, N1, both falling under the scope of Regulation (EC) No 715/2007 of the European Parliament and of the Council, or L (2- and 3-wheel vehicles and quadricycles). <p>Information provided by the issuer:</p> <ul style="list-style-type: none"> The main portion of eligible expenditures are tax exemption for zero- and low emission vehicles aimed at promoting the purchase of these types of vehicles. <p>The re-prioritization of the registration tax for green cars includes:</p> <ol style="list-style-type: none"> zero emission vehicles vehicles with emissions up to 50gCO₂/km. 	Likely aligned.
	EU Taxonomy DNSH-criteria	Comments on alignment	Alignment
Climate change adaptation	Please see under Generation of electricity using solar PV technology.	<p>Relevant contextual information:</p> <ul style="list-style-type: none"> Transportation will be exposed to heavy rain(snow)fall/ flooding/ landslides that may damage tracks and roads, and increased temperatures that may affect tracks and roads and increase the risk of wildfires. Increase sea level/storm surges may damage low lying tracks and roads. The Danish Road Directorate has published road standards on dealing with drainage, stormwater and seepage basins and the Ministry of Transport developed in 2010 an adaptation strategy for the transport sector in Denmark.⁴⁷ 	Likely partly aligned.

⁴⁵ M1: Passenger cars, N1: Light goods vehicles (up to 3,500 kgs)

⁴⁶ L-category: Two-wheel vehicles with a maximum design speed of not more than 45 km/h and characterized by an engine whose: cylinder capacity does not exceed 50 cm³ in the case of the internal combustion type, or. maximum continuous rated power is no more than 4 kW in the case of an electric motor.

⁴⁷ [Microsoft Word - Klimatilpasningsstrategi - 18. januar {F2#186996#4#186994#9}.doc](#)



		<ul style="list-style-type: none"> It is unclear whether all assets and investments under the framework will be screened for climate risk and resilience as required in the EU taxonomy. 	
Sustainable use and protection of water and marine resources	N/A	<ul style="list-style-type: none"> N/A 	N/A
Transition to circular economy	<p>Vehicles of categories M1 and N1 are both of the following:</p> <p>(a) reusable or recyclable to a minimum of 85% by weight;</p> <p>(b) reusable or recoverable to a minimum of 95% by weight.</p> <p>Measures are in place to manage waste both in the use phase (maintenance) and the end-of-life of the fleet, including through reuse and recycling of batteries and electronics (in particular critical raw materials therein), in accordance with the waste hierarchy.</p>	<p>Information provided by the issuer</p> <p>(a) The Ministry of Environment in Denmark does not possess data on the reusability or recyclability on vehicles of categories M1 and N1 specifically. However, due to the weight and slightly lower recyclability of batteries, it is likely that the vehicles of category M1 and N1 will be slightly less recyclable than other vehicles.</p> <p>(b) The Ministry of Environment in Denmark does not possess data on the reusability or recoverability on vehicles of categories M1 and N1 specifically. However, it is likely that the vehicles of category M1 and N1 will have the same level of recoverability as other vehicles.</p> <ul style="list-style-type: none"> In Denmark, it is a requirement that end-of-life vehicles must be handled by approved auto scrapers. Despite this, it is estimated that the illegal market for car scrapping (including illegal exports etc.) accounts for 20-25 percent of all scraps in Denmark. Measures are however in place to ensure that end-of-life vehicles are handled by approved auto scrapers: A scrapping allowance scheme, where car owners can receive a scrapping allowance, when the scrapped car is handed over to an approved and registered car wrecker. The reduced registration tax for low-emission and zero-emission vehicles might lead to an increased number of vehicles instead of more efficient use of a reduced number of vehicles. 	Likely partly aligned.
Pollution prevention and control	<ul style="list-style-type: none"> Vehicles comply with the requirements of the most recent applicable stage of the Euro 6 light-duty emission type-approval set out in accordance with Regulation (EC) No. 715/2007. Vehicles comply with the emission thresholds for clean light-duty vehicles set out in Table 2 of the Annex to Directive 2009/33/EC of the European Parliament and of the Council. For road vehicles of categories M and N, tyres comply with external rolling noise requirements in the highest 	<p>Relevant contextual information:</p> <ul style="list-style-type: none"> Regulation (EC) No. 715/2007 is implemented in Denmark. Directive 2009/33/EC and Regulation (EU) No 540/2014 are transposed in Danish legislation. Regulation (EU) 2020/740 related to tires is implemented in Denmark, and tire suppliers and distributors must comply with the requirements laid out in the regulation, i.a. related to labeling and testing of tires. 	Likely aligned.



	<p>populated class and with Rolling Resistance Coefficient (influencing the vehicle energy efficiency) in the two highest populated classes as set out in Regulation (EU) 2020/740 and as can be verified from the European Product Registry for Energy Labelling (EPREL).</p> <ul style="list-style-type: none"> • Vehicles comply with Regulation (EU) No 540/2014 of the European Parliament and of the Council. 	<ul style="list-style-type: none"> • Regulation (EU) 2020/740 related to tires is implemented in Denmark, and tire suppliers and distributors must comply with the requirements laid out in the regulation, i.a. related to labelling and testing of tires. 	
Protection and restoration of biodiversity and ecosystems	N/A	N/A	N/A



Framework activity	Clean transportation		
Taxonomy activity	6.14 Infrastructure for rail transport (NACE Codes F42.1.2, F43.2.1, and H52.21)		
	EU Technical mitigation criteria	Comments on alignment	Alignment
Mitigation criteria	<ul style="list-style-type: none"> Substantial contribution to climate change mitigation. <p>1. The activity complies with one of the following criteria:</p> <p>(a) the infrastructure (as defined in Annex II.2 to Directive (EU) 2016/797 of the European Parliament and of the Council) is either:</p> <ul style="list-style-type: none"> (i) electrified trackside infrastructure and associated subsystems: infrastructure, energy, on-board control-command and signaling, and trackside control-command and signaling subsystems as defined in Annex II.2 to Directive (EU)2016/797; (ii) new and existing trackside infrastructure and associated subsystems where there is a plan for electrification as regards line tracks, and, to the extent necessary for electric train operations, as regards sidings, or where the infrastructure will be fit for use by zero tailpipe CO₂ emission trains within 10 years from the beginning of the activity: infrastructure, energy, on-board control-command and signaling, and trackside control-command and signaling subsystems as defined in Annex II.2 to Directive (EU)2016/797; (iii) until 2030, existing trackside infrastructure and associated subsystems that are not part of the TEN-T network and its indicative extensions to third countries, nor any nationally, supranationally or internationally defined network of major rail lines: infrastructure, energy, on-board control-command and signaling, and trackside control-command and signaling subsystems as defined in Annex II.2 to Directive (EU) 2016/797; <p>(b) the infrastructure and installations are dedicated to transshipping freight between the modes: terminal</p>	<p>Description of activity:</p> <ul style="list-style-type: none"> Construction, modernization, operation and maintenance of railways and subways as well as bridges and tunnels, stations, terminals, rail service facilities, safety and traffic management systems including the provision of architectural services, engineering services, drafting services, building inspection services and surveying and mapping services and the like as well as the performance of physical, chemical and other analytical testing of all types of materials and products. <p>Information provided by the issuer:</p> <ul style="list-style-type: none"> Expenditures are dedicated to activities such as construction, operation, renewal, and maintenance of railway infrastructure, as well as promotion activities of mass public transportation Maintenance equipment is run on fossil fuels. New electric maintenance equipment is currently being developed by the suppliers but will take time. There is a plan for electrification of the supported rail system. 51% of Denmark's current railway network is electrified. Cargo rail transport is already almost exclusively done by electrical locomotives and the passenger rail transport infrastructure is undergoing intensive electrification. The issuer confirms that there are plans and financing to support that by 2030 the Kingdom of Denmark's railway trackside infrastructure and associated subsystems will be either electrified or readied for battery train operation, with electrified line tracks taking up approximately 80% of the network length and battery-operated line tracks taking up the remaining 20%. Of all renewal and maintenance costs, approximately 70% are estimated to benefit railway lines that will be electrified before 2030, while 30% of costs are estimated to benefit non-electrified lines that will be operated by battery trains by 2030. 	Likely aligned.



	<p>infrastructure and superstructures for loading, unloading and transshipment of goods; (c) infrastructure and installations are dedicated to the transfer of passengers from rail to rail or from other modes to rail.</p> <p>2. The infrastructure is not dedicated to the transport or storage of fossil fuels.</p>	<ul style="list-style-type: none"> No part of the infrastructure is dedicated to the transport or storage of fossil fuels, and none of the expenditures are aimed at promoting such activities. However, the issuer cannot fully exclude that the infrastructure cannot be used for transport and/or storage of fossil fuels. Approximately 94% (2019-number) of the total transportation on railways is related to transport of passengers. 	
	EU Taxonomy DNSH-criteria	Comments on alignment	Alignment
Climate change adaptation	Please see under Generation of electricity using solar PV technology.	<p>Information provided by the issuer:</p> <ul style="list-style-type: none"> Banedanmark has prepared a climate adaptation strategy focusing on heavy and / or persistent rainfall, storm surges, temperature fluctuations and extremes and storm and winds. The strategy aims to help ensure preparedness for the effects of climate change, and identifies relevant adaptive measures where needed. It is unclear whether all assets and investments under the framework will be screened for climate risk and resilience as required in the EU taxonomy. 	Likely partly aligned.
Sustainable use and protection of water and marine resources	<ul style="list-style-type: none"> Environmental degradation risks related to preserving water quality and avoiding water stress are identified and addressed with the aim of achieving good water status and good ecological potential as defined in Article 2, points (22) and (23), of Regulation (EU) 2020/852, in accordance with Directive 2000/60/EC of the European Parliament and of the Council and a water use and protection management plan, developed thereunder for the potentially affected water body or bodies, in consultation with relevant stakeholders. Where an Environmental Impact Assessment is carried out in accordance with Directive 2011/92/EU of the European Parliament and of the Council and includes an assessment of the impact on water in accordance with Directive 2000/60/EC, no additional assessment of impact on water is required, provided the risks identified have been addressed. 	<p>Relevant contextual information:</p> <ul style="list-style-type: none"> The EU EIA-directive (Directive 2014/52/EU) is implemented in Denmark. The directive requires an EIA for long distance railway traffic. <p>Information provided by the issuer:</p> <ul style="list-style-type: none"> The Danish railway holds approximately 1200 km of water-bearing ditches that attract birds and mammals such as otters and foxes and at the same time help plants, amphibians, and fish to spread to other natural areas. To compensate for the barriers that a new railway creates, fauna passages are established, allowing animals' safe passage across the tracks. On the new 56 km railway line between Copenhagen and Ringsted, 42 dry and 32 wet fauna passages have been constructed. The Nature Conservation Act (LBK no. 240 of 13/03/2019) preserves certain natural habitats such as (but not limited to) meadows, bogs, and ponds. In the case of the new railway line between Copenhagen and Ringsted, 26 lakes and water holes were affected and replaced in the ratio 1:2, so that now there are 62 lakes and water holes instead. 	Likely aligned.



<p>Transition to a circular economy</p>	<ul style="list-style-type: none"> At least 70% (by weight) of the non-hazardous construction and demolition waste (excluding naturally occurring material defined in category 17 05 04 in the European List of Waste established by Decision 2000/532/EC) generated on the construction site is prepared for reuse, recycling and other material recovery, including backfilling operations using waste to substitute other materials, in accordance with the waste hierarchy and the EU Construction and Demolition Waste Management Protocol. Operators limit waste generation in processes related construction and demolition, in accordance with the EU Construction and Demolition Waste Management Protocol and taking into account best available techniques and using selective demolition to enable removal and safe handling of hazardous substances and facilitate reuse and high-quality recycling by selective removal of materials, using available sorting systems for construction and demolition waste. 	<p>Information provided by the issuer:</p> <ul style="list-style-type: none"> The path to a circular economy is secured through the best available techniques within optimization, selection, and substitution of materials; resale of surplus goods; waste management, handling of hazardous substances and high-quality recycling by selective removal of materials, using available sorting systems. This DNSH-criterion states that at least 70% of the non-hazardous construction and demolition waste must be prepared for reuse, recycling, or other material recovery, but Banedanmark, however, recycles more than 99% of its total waste volumes. To be specific, in 2020, 99,5% was recycled, 0,1% was incinerated, and 0,4% ended in landfills. In 2019, 99,7% was recycled, 0,1% incinerated, and 0,2% ended in land-fills. Construction and demolition activities related to the Danish railways, adhere to the EU Construction and Demolition Waste Management Protocol & Guidelines. Banedanmark is currently developing a process to perform systematic screenings of environmental impact of its procurement. These efforts are closely linked to national guidelines, rules, and regulations as well as transposed EU law. 	<p>Likely aligned.</p>
<p>Pollution prevention and control.</p>	<ul style="list-style-type: none"> Where appropriate, given the sensitivity of the area affected, in particular in terms of the size of population affected, noise and vibrations from use of infrastructure are mitigated by introducing open trenches, wall barriers, or other measures and comply with Directive 2002/49/EC of the European Parliament and of the Council. Measures are taken to reduce noise, dust and pollutant emissions during construction or maintenance works. 	<p>Relevant contextual information:</p> <ul style="list-style-type: none"> Directive 2002/49/EC on noise is implemented in Danish law, while measures to reduce noise, dust, and emissions during construction or maintenance are included in the EIA-process. More than 99% of Banedanmark's total waste volumes is recycled. To be specific, in 2020, 99,5% was recycled, 0,1% was incinerated, and 0,4% ended in landfills. In 2019, 99,7% was recycled, 0,1% incinerated, and 0,2% ended in landfills. 	<p>Likely aligned.</p>
<p>Protection and restoration of biodiversity and ecosystems</p>	<ul style="list-style-type: none"> Please see under Generation of electricity using solar PV technology. 	<p>Relevant contextual information:</p> <ul style="list-style-type: none"> The EU EIA-directive (Directive 2014/52/EU) is implemented in Denmark. The directive requires an EIA for long distance railway traffic. <p>Information provided by the issuer:</p> <p>Protection and restoration activities along the Danish railway</p> <ul style="list-style-type: none"> The Danish railway has 4.500 hectares of nature that provide habitats to more than 250 particularly endangered animals and plants, the so-called red list species. In a 2021 biodiversity analysis performed by Banedanmark, six different types of natural areas along the railway were selected and 	<p>Likely aligned.</p>



		<p>prioritized, as they showed special significance for biodiversity if given the appropriate care and effort. Later that same year, a broad coalition of political parties agreed to the "Infrastructure Agreement 2035", in which DKK 150 million were allocated to promote biodiversity along railways and roads in the period 2022-2035.</p> <p>On top of this political and financial commitment, Banedanmark contributes to the protection and restoration of biodiversity and ecosystems by complying with the following regulation.</p> <ul style="list-style-type: none"> • EIA Directive. The EIA-directive (Directive 2014/52/EU) is implemented in Denmark. The Directive requires an EIA for long distance railway traffic. • Natura 2000 areas. Natura 2000 areas are protected areas subject to the Birds Directive and the Habitats Directive. Activities in these areas are subject to extra strict requirements. • Annex IV of the Habitats Directive. The Habitats Directive obliges EU countries to protect endangered, vulnerable and often rare animal species and their habitats, even if they live outside the special protection areas. These species are listed in Annex IV of the Habitats Directive. • To compensate for the barriers that a new railway creates, fauna passages are established, allowing animals safe passage across the tracks. On the new 56 km railway line between Copenhagen and Ringsted, 42 dry and 32 wet fauna passages have been constructed. • The Nature Conservation Act. The Nature Conservation Act (LBK no. 240 of 13/03/2019) preserves certain natural habitats such as (but not limited to) meadows, bogs, and ponds. In the case of the new 56 km railway line between Copenhagen and Ringsted, 26 lakes and water holes were affected and replaced in the ratio 1:2, so that there now are 62 lakes and water holes instead. • The forest act. Almost all Danish forests are forest reserves, and according to the Forest Act, forest reserves must be compensated, if affected. The compensation area must be between 110 and 200 per cent of the area where trees were cut down.⁴⁸ 	
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⁴⁸ [Naturen langs med Den nye bane | Banedanmark](#)



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 and the International Institute for Sustainable Development (IISD).

