

Climate and TCFD progress update

June 2021

Danske Bank



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1. Introduction and scope

Climate change is one of the key risks affecting our societies. At the same time, climate change mitigation efforts will require fundamental transformations within almost all business sectors. The purpose of this report is to show our progress so far, both in terms of how our lending activities impact the climate and how climate change will impact our lending book. By continuously sharing our progress, we hope to support the road towards more transparency as well continue to help mature the different climate methodologies.

Climate-related risks are often divided into two main categories: transition risks, i.e. the potential disruptive risks when moving to a low-carbon economy, and physical risks, i.e. an increase in weather-related hazards. Both types of climate risk can have an impact on the Group through either our financial risks or our non-financial risks, and assessing the full range of climate-related risks that stem from physical consequences of changing climate and assessing impacts of the on-going societal transition are both key to ensuring future strategic resilience. In this report, we present transition risk assessments that we have conducted by using a mix of climate scenario analyses to uncover, for example, potential future changes in demand or carbon costs. The report also shows progress on carbon mapping for several sectors – a necessary first step to enable us to work actively with supporting the transitioning efforts of society. For physical risk assessments, we are aiming to use geographically specific climate data covering the Nordic countries and we have included an example of using such data to conduct a flooding risk analysis.

At Danske Bank, climate-related risks are considered to be crosscutting in nature, and they have an impact on many of the existing risk categories already being managed today. It is therefore key that climate risk management becomes an integral part of existing risk processes and that it is treated and taken into consideration by the relevant risk specialists. To support the crosscutting nature of climate-related risks, a central team was recently established in Group Risk Management to ensure alignment and coherency in risk assessments, prioritisation and regulatory engagement across the organisation.

The mapping of our corporate customers' greenhouse gas (GHG) emissions is conducted as a joint project between Sustainable Finance and Capital & Credit Portfolio Management in our Large Corporates and Institutions business unit. This joint-project approach has been adopted because combined expertise is required to conduct this exercise and it supports our aim of integrating the climate target setting process into the business from the outset. Because the field of climate risk is rapidly evolving in terms of methodology, disclosure requirements and management expectations, it is important for Danske Bank to stay close to the developments and to continuously improve and contribute to maturing climate risk management.

While this report presents our approach to analysing our climate exposure and impact, a key part of our climate action is of course also to facilitate more financing to the low-carbon transition and to help our customers with their sustainable investments. We support our customers' transition efforts through lending from our own balance sheet in the form of green loans and by arranging sustainable bonds for our customers. In 2020, we published a target of providing well above DKK 100 billion in sustainable financing by 2023.

Scope of report

This report presents several sectoral case studies of climate scenario analysis and carbon mapping. The sectors included here have been chosen either due to the ready availability of data/methodologies in these sectors that enable the disclosure of more robust and sound analysis or because the Group's climate risk heat map indicates that the sector is either in a medium- or high-risk category. For both climate scenario analysis and carbon mapping, the aim is to cover the full lending book over time, thereby prioritising the sectors that are most material for Danske Bank.

Key results from the analyses presented in this report

Key results	
Climate scenario analysis – oil and gas sector	By using a range of climate scenarios with different future assumptions on how to reach a low-carbon economy, we find that the share of customers with weak financial conditions will increase in all scenarios except a hot house world scenario. Transition risks for the industry are highest in a scenario with the harshest conditions of low availability of emissions technology and immediate transition efforts.
Climate scenario analysis – flooding risk analysis for Danish real estate	While the total exposure at risk from flooding is significant for Danske Bank (DKK 56 billion for personal customers and DKK 28 billion for commercial property), the financial impact is still deemed to be limited, partially due to the strong credit quality of the book.
GHG accounting for the utilities sector	The sector's absolute emissions attributed to Danske Bank totalled 1,739 kt CO ₂ e (55 t CO ₂ e/DKKm). According to the asset-level analysis conducted, the portfolio-weighted emissions intensity of the power production we finance averaged at 153 g CO ₂ e/kWh.
GHG accounting for Danish commercial real estate	Danske Bank's commercial real estate portfolio was associated with emissions of 79 kt CO ₂ e (673 kg CO ₂ e/DKKm). The energy performance certificate (EPC) label distribution analysed reflects the statistical data on the Danish building stock.
GHG accounting for the shipping sector	Out of the three sectors analysed in this disclosure, the shipping portfolio had the highest absolute emissions (8,771 kt CO ₂ e) as well as CO ₂ intensity per DKK million of exposure (524 t CO ₂ e/DKKm).

Interpretation	Next step
<p>In a low-carbon economy, the oil and gas portfolio will see deteriorating levels of credit quality in the absence of any actions by the exploration and production companies. The number of weak customers will increase the most under a disorderly transition, meaning that ensuring our customers have ambitious transition plans in place early will be key.</p>	<p>Recently, the Group has updated its position statement for the fossil fuel industry and reduced the exposure to the sector. We will continue to develop our analytical capabilities related to transition risks in different climate scenarios.</p>
<p>In a physical risk scenario where global temperatures are set to increase, the real estate sector in Denmark is posed to see clusters of properties exposed to flooding risk in the future. While the financial impacts have been estimated to be limited, we want to further enhance the methodologies to ensure we do not underestimate the financial impacts.</p>	<p>The next steps include continuing to develop the methodology for modelling the effect on probability of default parameters and extending the assessment to other Nordic market areas by using relevant flooding risk data.</p>
<p>Our power generating portfolio is characterised by high exposure towards carbon-free power sources, which reflects a Nordic electricity market abundant in renewables and nuclear. The analysis clearly shows that the emissions intensity of our electricity generating portfolio reflects the local power mix.</p>	<p>The updated position statement for the fossil fuel industry will have implications for our business because we will divest ourselves of customers that currently derive a significant share of their revenue from peat- and coal-based power production and that do not have a credible transition plan. We aim to effect further reductions in the emissions intensity per unit of power generated by our customers, which also involves growing our green loan portfolio within the utilities sector.</p>
<p>The amount of CO₂ emissions resulting from each property correlate with the size of total heated area, the granted EPC label and the heating source applied. The results show that burning of fossil fuels remains a significant contributor to the portfolio-level carbon footprint especially within residential properties.</p>	<p>The further analysis will be subject to development of more advanced proxies and will extend the scope to cover the rest of our markets. Financing sustainable and energy-efficient buildings plays a major role within our green lending activities.</p>
<p>Maritime transport is one of the harder to abate sectors in the global economy, and its current reliance on fossil fuel is visible in the vessels' carbon footprints. The major data source applied in this analysis was a separate study in line with the Poseidon Principles (PP) framework for assessing and disclosing the climate alignment of ship finance portfolios, the scope of which covers only the vessels engaged in international trade and above 5,000 GT in size.</p>	<p>We will now use the Poseidon Principles actively for measuring emissions associated with our shipping portfolio and to support the sector's efforts to reduce its carbon footprint. Also, we will continue seeking more granular data sources in order to account for smaller ships, and we will participate in the discussions on methodological choices adopted in the frameworks.</p>

2. Climate risk scenario analysis of the lending book

Purpose and background

Climate-related risks manifest themselves through existing risk categories of the Group, which is why it is important to ensure that climate risk is treated and taken into consideration by relevant risk specialists. For lending, that means that climate risk considerations are increasingly informing credit risk management, including at a customer level when approving a loan, in portfolio considerations when setting credit risk appetite, and, more recently, when conducting climate scenario analyses.

Climate scenario analysis is a method to assess potential implications of a range of possible future states, whether it be plausible pathways along which the economy might transition or whether it be identifying types of extreme weather events that could occur if global average temperatures continue to rise. The purpose of conducting such forward-looking analysis is to increasingly inform strategic and financial planning processes to support the economic resilience of the communities we are a part of.

Scenario analysis includes the involvement of a diverse set of credit specialists, including stress testing teams. Because the field of climate risk is rapidly evolving in terms of methodology, disclosure requirements and management expectations, it is important for Danske Bank to stay close to the developments and to continuously improve and contribute to maturing scenario analysis.

Relevant frameworks

The scenario analysis is carried out in accordance with the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD) as well as the subsequent methodological work published through the United Nations Environment Programme - Finance Initiative (UNEP FI).

For both types of climate risk assessments, the choice of climate scenarios and climate risk data will play a critical role with respect to the output. As much detail as possible about the specific assumptions and choices has been further specified in each of the two case studies presented in this report.

Climate scenario analysis scope

Two case studies have been included using climate scenario analysis: an oil and gas transition risk analysis and a flooding risk analysis for the real estate portfolio in Denmark. Both of these sectors have been chosen based on the Group's climate risk heat map (see below).

Sectoral risks will always vary depending on the climate future that is being assessed and on the geographical location of the financing activity. Understanding the sectors that are particularly climate-sensitive is therefore key when it comes to increasing risk management efforts where these are most needed.

To obtain a collective view of the climate-related risks to which Danske Bank is exposed, the climate risk heat map has been introduced and based on the Nordic focus of the Group's lending book. The heat map provides an indication of whether the sector is exposed to low, medium or high climate risks as determined by i) a qualitative, inherent risk assessment for the sectors in the Nordic countries and ii) the size of credit exposure for the given sector (for more on credit exposures, see the appendix). Sectors deemed to be exposed to high risk – either from a physical or transition risk perspective – will require more detailed risk assessments and management.

Recognising that Danske Bank's climate risk understanding will continue to evolve over time as methodologies further mature for scenario analysis, carbon mapping and portfolio alignment efforts etc., the heat map serves as a point-in-time prioritisation tool to direct the focus of the Group's efforts. It is important to recognise, however, that assessments will also hinge on data availability and methodological robustness, underscoring the fact that this is an ongoing journey for Danske Bank.

We expect to assess the heat map on an annual basis because, for example, further quantitative assessments can either validate or redirect the risk management priorities. Furthermore, because both materiality and climate-specific risks can vary widely within a given sector, our aim is to provide a more detailed heat map at sub-segment level. The Group's current climate risk heat map is shown in the figure on the right.

Industry	Physical risk assessment	Transition risk assessment
Agriculture	High	High
Commercial property	High	High
Personal customers	High	Medium
Private housing co-ops	High	Medium
Construction & building materials	Medium	High
Metals and mining	Medium	High
Pulp & paper, chemicals	Medium	High
Shipping, oil & gas	Medium	High
Consumer goods	Medium	Medium
Utilities and infrastructure	Medium	Medium
Hotels, restaurants and leisure	Medium	Low
Transportation	Low	High
Automotive	Low	Medium
Capital goods	Low	High
Pharma and medical devices	Low	Low
Retailing	Low	Low
Services	Low	Low
Social services	Low	Low
Telecom & media	Low	Low
Financials	To be determined	To be determined
Public institutions	To be determined	To be determined
Other	To be determined	To be determined

3. GHG accounting of the corporate lending book

Purpose and background

Measuring the greenhouse gas (GHG) emissions that result from our lending activities is one of the key factors that contributes to the Danske Bank Group's sustainability performance. We believe that disclosing our carbon footprint without excluding the most essential, yet ambiguous, indirect emissions is the right thing to do. This action will of course have an impact on own operations, but when we integrate our findings into our client dialogue and focus our efforts on the portfolio sectors where emissions reductions are most critical, this will also have an impact on the surrounding society. In practice, the outcomes of the CO₂ analysis presented in this report will feed into the baseline-setting process for the upcoming Paris-aligned climate target that Danske Bank has committed to set for the Group's corporate lending portfolio by 2023. Moreover, measuring financed emissions contributes to the management of climate-related transition risks and opportunities.

Roadmap to setting a climate target for the corporate portfolio

1. Measure and disclose financed emissions	2. Develop target and implementation strategy	3. Take actions and report on progress
The emissions associated with our client portfolio contribute to our understanding of how our lending decisions affect the climate. High quality and granularity are essential features of the analysis to enable internal steering and target-setting.	The findings from the portfolio mapping are applied in order to establish the emissions baseline for the climate target and climate scenarios aligned with the goals of the Paris Agreement. The implementation strategy behind the target will also be designed at this stage.	The target and strategy will enable us to steer the corporate portfolio in line with the goals of the Paris Agreement and to measure and report on our progress annually. Related considerations will be a natural extension of our client relationships.

¹ When measuring financed emissions, we account for those that result from our customers' operations over which we do not have direct control. Consequently, these emissions are called Scope 3 or 'other indirect emissions' in our reporting. For more information about the definition and accounting practices of scope 3 emissions, please refer to GHG Protocol Corporate Value Chain (Scope 3) Standard.

² Refers to carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulphur hexafluoride (SF₆), and nitrogen trifluoride (NF₃).

We also hope that this exercise will incentivise more financial institutions to follow suit while providing input on the development of accounting practices across different domains.

Relevant frameworks



The analysis is carried out following the relevant international and national GHG emissions accounting recommendations that are founded on the Greenhouse Gas Protocol, which is the most widely used global standard framework for accounting greenhouse gas emissions across industries. To guide our work on addressing financed emissions, Danske Bank in 2020 joined the Partnership for Carbon Accounting Financials (PCAF), which is an industry-led partnership developing a harmonised approach to measuring and disclosing GHG emissions associated with loans and investments. We have also contributed to Finance Denmark's (FIDA) financial sector guidelines for CO₂ disclosures, which links to our support for standardised sustainability disclosures. Both of these frameworks are featured in this report and are referred to for further methodological details. Alongside the CO₂ accounting frameworks are other initiatives that have fed into the analysis and that are discussed in their respective sections.

Report scope

The first sectors covered are utilities, commercial real estate (restricted to the Danish portfolio) and shipping. These sectors have been selected first due to their climate profiles, the availability of sufficient data to meet our requirements, the existence of accounting and target-setting methodologies, and lending exposure.

The analysis is limited to the emissions considered in category 15 (Investment) in the GHG Protocol's accounting rules for Scope 3 emissions¹, and justification for the exclusion of any assets is provided under each sector description. As per PCAF and FIDA guidelines, the scope includes on-balance credit exposure within the corporate loan book across the selected sectors as of year-end 2020.

The seven greenhouse gases covered by the Kyoto Protocol², which will be addressed as either GHGs and CO₂ interchangeably given the conversion from the other gases to CO₂ equivalents, are accounted for in this disclosure. Biogenic emissions occurring in heat and power production are not covered in this report due to lack of client-reported data.

4. Sector deep dives

4.1. Climate scenario analysis – oil & gas sector

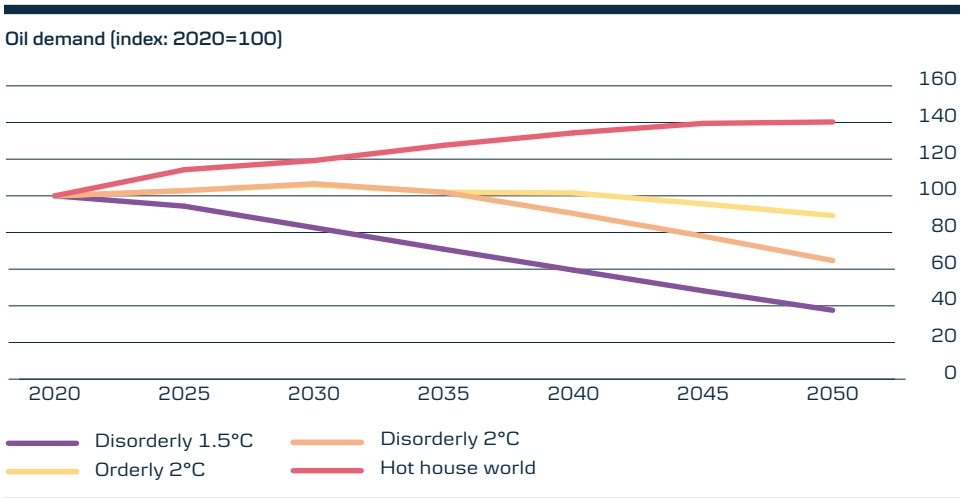
Climate scenario analysis – transition risks

A fundamental part of the Group's risk assessment process is the internal risk reports conducted for different lending portfolios, selected either due to high sectoral risks, large exposure or other strategic reasons. These risk reports are reviewed on an annual basis and support the Group's credit risk appetite framework. The latest risk report on oil and gas also included a climate scenario analysis in order to look at climate-related transition risks.

For the transition risk analysis, four different climate scenarios were used to conduct a bottom-up stress test of the exploration and production (E&P) segment of the oil and gas portfolio. The scenarios used are part of the Network for Greening the Financial System (NGFS) suite of climate scenarios, released in 2020, which has been developed to provide a common starting point for analysing climate risks to the economy and financial system at large – not just the to the oil and gas sector. The first three scenarios applied in the analysis are NGFS representative scenarios, with a fourth added from NGFS alternate scenarios in order to explore different scenario assumptions around negative emissions technologies and temperatures.

- I) Hot house world scenario, which assumes that only the currently implemented policies are in place with no further policy actions, leading to rising global temperatures (3°C+) and severe physical risks.
- II) An orderly 2°C transition scenario, which assumes that the world starts to transition immediately by early introduction of climate policies that become gradually more stringent. The scenario relies on carbon removal technologies (CDR).
- III) A disorderly 2°C transition scenario, which assumes that policies are delayed until 2030 and with limited reliance on CDR. Since actions are taken relatively late, emission reductions need to be sharper towards the end of the time horizon.
- IV) A disorderly 1.5°C with limited reliance on CDR. Due to the low availability of negative emissions technology, efforts have to be immediate, meaning the world has to transition very quickly.

The climate scenarios are based on various integrated assessment models, all of which have different assumptions about the future energy mix and use, technology, policy timing, etc. The assumptions and variables used for the transition risk analysis are freely available through NGFS. An example of a key variable is shown below:

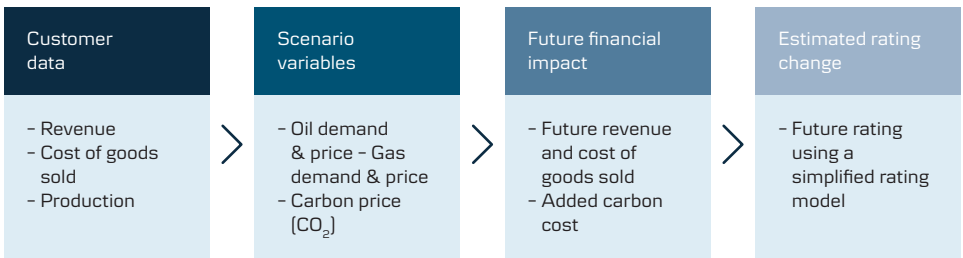


It is important to note that using transition risk scenarios is subject to much uncertainty. The complexity of the integrated assessment modelling and the many assumptions used to arrive at different future pathways highlight the need to view scenario analysis as one way to explore the range of possible climate-related risks while understanding the embedded uncertainties.

Applying the climate scenarios to the oil and gas portfolio

An important assumption in the climate risk assessment is that the customers do not react to the transition and that Danske Bank maintains a constant level of exposure towards the sector over the time horizon of the scenarios. These constraints were applied in order to avoid adding additional complexity to the many assumptions already embedded in the climate scenarios.

In order to translate the climate scenarios into an effect on probability of default (PD), a simplified stress test was conducted on all customers in the E&P segment. For the largest customers, we conducted a deep dive analysis of the customer data and broke this down in terms of revenue and production per fossil fuel source in order to arrive at a recalculated future income using the scenario variables illustrated below. For estimating the additional carbon cost, we used companies' own disclosed information on production carbon intensity.



If carbon-intensity statistics were not readily available, we used carbon-intensity statistics on the E&P industry provided by the International Energy Agency (IEA) . The data used for the analysis was based on pre-COVID-19 levels.

Results – deterioration in credit quality

In the absence of any actions taken by the E&P companies, and depending on how quickly or ambitiously the world chooses to transition, the portfolio will see a deterioration in credit quality.

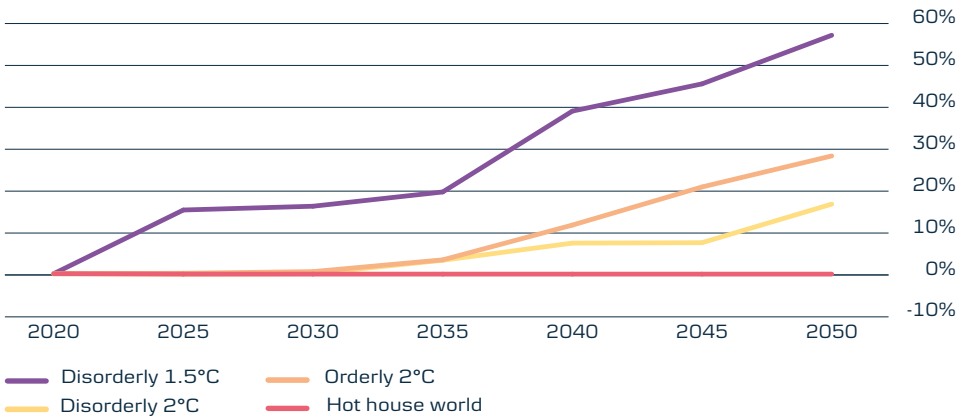
In the harshest, disorderly 1.5 °C transition scenario, with limited CDR, the share of customers with weak financial conditions will increase to around 73% by 2050 from 3% today. The disorderly 1.5 °C scenario is useful for assessing shorter-term transition risk effects when comparing against the other scenarios.

In a disorderly 2 °C scenario, the impacts are delayed due to slower global actions, and in 2050 the share of weak customers will increase to 20%, with the majority of the impact taking place after 2050. This delayed effect is also a result of the higher oil and gas price assumptions embedded in the scenario – in relation to the orderly 2 °C scenario – neutralising some of the stark demand effects.

In an orderly 2 °C scenario, the share of weak customers would increase to 28%. An overview of the variations in effect on the portfolio’s credit quality is shown on the next page.

Irrespective of the transition risk scenario, we will need to ensure that customers are on track with ambitious transition plans in order ensure stable credit quality in the future.

Exposure weighted probability of default (PD) of the E&P segment

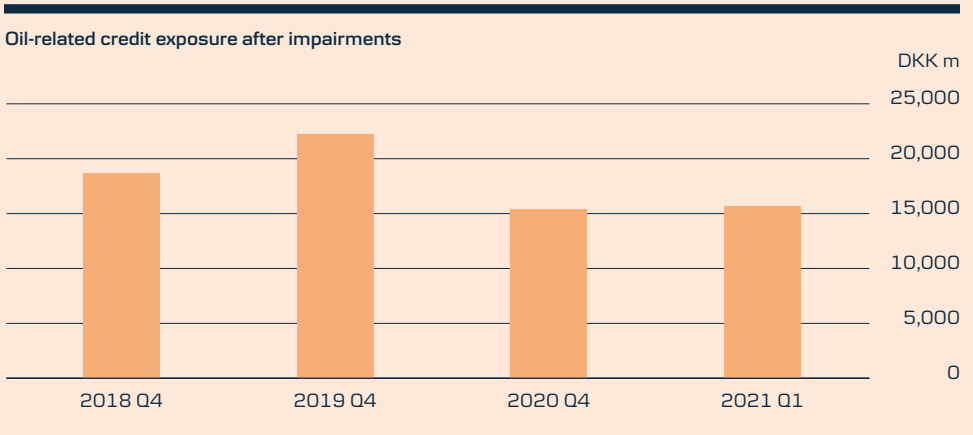


Risk management actions

Although no customer action is assumed in the climate risk assessment, this does not align with our expectations in the Nordic countries. Many of the Nordic players are already undertaking transition plans, and these will be followed closely. However, due to the inherent climate-related risks that the sector will undoubtedly face over the long term, several actions are already being carried out, including:

- Tightening of risk governance as per the Group's position statement
- Adjustments to the existing risk appetite for the portfolio

As shown in the figure below, the Group's existing risk appetite limit has supported a decreasing exposure development since 2019, and this is likely set to continue given the elevated risk.



Methodological improvements

We recognise that climate scenario analysis is still in its infancy, and there are numerous areas where the Group would like to further develop its capabilities. Below are some key areas that would benefit from further improvements:

- Developing a consistent approach when estimating impairment impact on longer time horizons
- Better understanding of future break-even costs and how this can impact the stress test results
- Enhancing the methodology for estimating risk parameters, e.g. loss given default and probability of default
- Extending methodology to related sub-segments that require more granular scenario assumptions currently not available through NGFS scenarios
- Improving management-action considerations in the scenario analysis, either at a customer level or at bank level, to ensure greater alignment between Paris-alignment efforts and risk assessments in Danske Bank

For other sector-specific scenario analyses, establishing best practice will be paramount when it comes to choice of scenario assumptions for, for example, future price and demands that are specific to the given sector. Here, the NGFS scenarios offer numerous variables in terms of the global energy system, but they offer less granularity when it comes to other sector-specific assumptions. For this reason, further efforts are needed to ensure comparable scenario analysis across sectors.

Opportunities

In addition, we look to support our clients transitioning away from oil & gas sector. As an example of this type of financing, Equinor and Eni, together with SSE Renewables, are currently developing the world's largest offshore wind farm in Dogger Bank. Danske Bank is proud to have provided green project financing for this endeavour.



4.2. Climate scenario analysis – flooding risk analysis for Danish real estate

Flooding risk analysis – physical risks

While ensuring that society successfully transitions to a low-carbon economy remains top priority, the average world temperatures are set to increase from the levels that we are already facing today. This means that climate risk management will need to be twofold in nature, with our customers facing disruption risks from the transitioning efforts as well as from an increase in physical risks caused by an increase in weather-related hazards.

Because physical risks vary depending on geographical location, using local climate information when assessing physical risk hazards is key, and it is also important to recognise that each market that the Group operates in will likely face different levels and types of physical risk. With flooding risk often cited as a key hazard in northern Europe, and with Denmark being the largest market area for Danske Bank, we conducted the first physical risk assessment on flooding risk for our property portfolio. The analysis was included in the most recent internal risk reports on personal customer and commercial property portfolios.

Flooding risk data

The analysis used the most recent flooding maps from the Danish Coastal Authority (DCA). Two sets of maps were used:

- Flooding estimates of extreme flood events (1,000-year return period¹)
- Flooding estimates for 14 designated areas in Denmark that have been identified as risk areas. These estimates include 20-year, 100-year and 1,000-year flood return periods and include future projections of climate change impacts for 100-year and 1,000-year flood events for the years 2019, 2065 and 2115 using climate scenario RCP 8.5². An extrapolation was also made to estimate the total risk from flooding outside the 14 designated areas

¹ Flood data is often presented as return periods. A flood return period is an expression of the long-term average nature of randomly distributed events and relates to the number of times in a given timeframe that a particular condition is likely to occur.

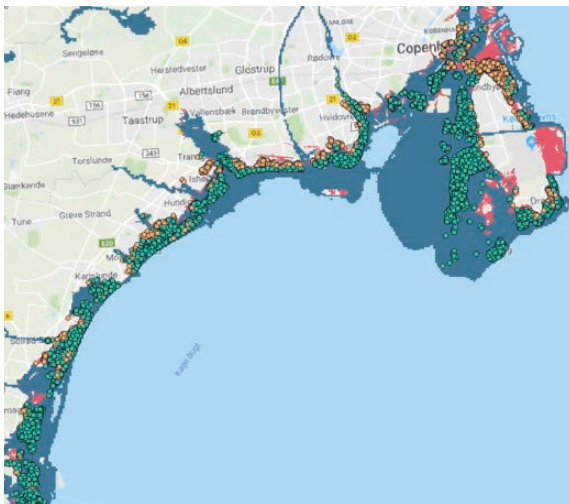
² Representative Concentration Pathway 8.5 is a standardised climate scenario used to assess impacts of high greenhouse gas concentration in the atmosphere.

Key to note is that the projected flooding risk does not include the risk of flooding from groundwater or heavy precipitation events. The maps can be freely accessed at the DCAs website.

Results

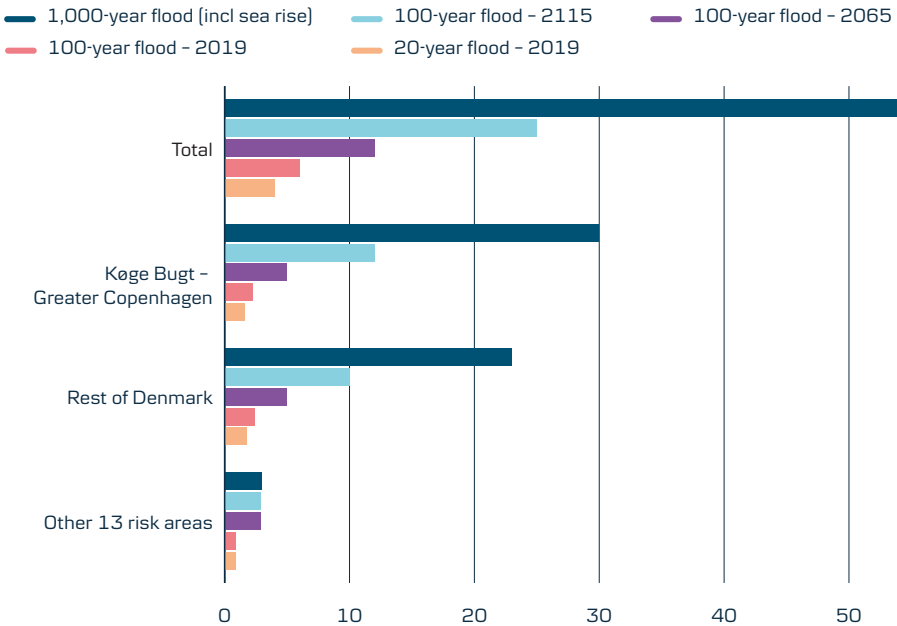
Using geographical location of the Group's properties, the first climate risk assessments allowed us to assess how much credit exposure can be identified in flooding-risk areas. The figure below shows how the geographical location of properties are overlaid with the flooding risk maps from the DCA.

Danish mortgage portfolio at risk of flooding in the Køge Bugt area



The assessment of the mortgage portfolio showed that certain areas in Denmark will see clusters of properties exposed to significant flooding risk in the future, with around 12% of our total property exposure potentially affected by extreme flooding (1,000-year return period). It is important to note that the total property exposure at risk would not occur simultaneously because flood events are localised in nature, i.e. not all of Denmark would be affected at the same time. The chart below shows the various levels of exposure at risk for the mortgage portfolio when comparing across different types of flood return periods.

Exposure at risk for mortgages (DKK bn) during different flood return periods



Similar identification assessment was also carried out for the commercial property portfolio using the same flooding risk maps from the DCA. When using the extreme flood return periods (1,000-year return period), around 22% of the total exposure can be considered to be at risk (around DKK 28 billion), with Greater Copenhagen/Køge Bugt being the most affected area for this segment also.

Further developments for financial impact estimates

In order to translate the results into financial impact for Danske Bank, several assumptions were used to make the initial assessments:

- The price of a property that has been flooded is assumed to drop by 20% within the first year, returning to the original value after four years. The estimated house price fluctuations are aligned with a study conducted for UK properties¹, and the house price drop is a conservative estimate as outlined in the publications led by the UNEP FI. No flooding effects are assumed for house prices outside the risk areas.
- Mitigating factors such as insurance coverage have not been included in the assessment

However, when calculating the impact in respect of adjusted loan to values (LTVs) or impairment impacts, the financial impact is very limited. This is largely due to the strong credit quality of these customers today, which is considered robust enough to withstand single flooding events. Due to limitations in the methodology, we need to carry out further assessments before we can arrive at any conclusions. This includes improving the assumptions related to deterioration of credit quality for the affected customers, which currently is only assumed as a temporary drop in the collateral value. Modelling more systemic and long-term price effects are likely to lead to higher levels of impact. Further analysis is therefore needed to assess the impact on wider credit quality parameters and to provide a better estimate of financial impact.

1 Allan Beltrán, David Maddison, Robert Elliott, *The impact of flooding on property prices: A repeat-sales approach*, *Journal of Environmental Economics and Management*, Volume 95, 2019, Pages 62-86

Risk management actions

No immediate risk management actions have been taken based on the initial analysis, and property loan conditions are therefore not generally affected by the analysis at this point. We are focusing on improving financial materiality assessments, and we are also working to understand the ability of customers and society to mitigate such impacts. This would aim at including adaptation measures at a property level and broader adaptation measures driven by government action.

Methodological improvements

Below are some key areas that would benefit from further improvements when we continue our physical risk assessments:

- Extending the assessment to other Nordic market areas by collecting climate-specific hazard data from the relevant areas
- Modelling the effect on probability of default parameters in order to assess the full impact on credit quality and to provide a better estimate of financial impact, particularly important for commercial property estimates
- Ensuring that insurance is taken into account when estimating the size of the risk
- Assessing additional physical risk hazards, e.g. landslides, heavy precipitation events, etc.

For physical risk assessments, it is key that all sectors start disclosing potential future risks in order to ensure that a wider scope of physical risks are fully understood and accounted for. Only then will it be possible to help support mitigation and adaptation plans at a societal level, which will necessitate a collective responsibility shared by numerous stakeholders.



4.3. GHG accounting for Danish commercial real estate

Sector overview

The real estate sector is one of the largest contributors to greenhouse gas (GHG) emissions in the European Union. Denmark is no exception: about 30% of the country's carbon footprint is associated with buildings, mostly contributed by the energy consumption during the use phase of properties¹. Over the past decades, the use of fossil fuels has progressively declined in the Nordic building sector while improvements in energy efficiency have been more or less marginal. Because eight out of ten existing buildings will remain in use in 2050, refurbishment activities will play a key role in decarbonising the sector. Newly constructed buildings will need to align with the national nearly zero-energy buildings (NZEB) requirements. The new requirements will be met with the help of measures such as implementing supplementary renewable heating sources and improved insulation of buildings.

Portfolio CO₂ analysis

Data on actual energy consumption or resulting CO₂ emissions is not readily available for the majority of Nordic properties, which is why approximating the emissions intensity of the real estate sector is based on the Danish Energy Performance Certificate (EPC) scheme². An EPC provides information about the expected energy use of the property that can be converted into CO₂ emissions by using source-specific emissions and energy factors. Where there are gaps in the scheme's coverage³, the energy demand of a property is estimated by using average data for buildings that share similar characteristics to the property. The underlying dataset covers granular energy performance data available for the entire Danish building stock, thereby making it possible to create a representative proxy on each building type.

Holiday homes in the portfolio constitute an exception because their calculated carbon footprint is based on the research by the Danish Energy Agency and the Danish Building Research Institute⁴. Annual emissions resulting from the properties' use of energy are attributed to Danske Bank based on the ratio between the outstanding amount and property value. A more detailed description of the methodology can be found in Finance Denmark's Framework for Financed Emissions Accounting and in the PCAF Global Standard.

Scope

The scope of Danish commercial real estate (CRE) in this report includes on-balance corporate credit exposures that are collateralised by either residential or non-residential properties within the commercial property sector in Denmark as of year-end 2020. The scope excludes properties related to agriculture or industrial facilities, which are to be covered in their respective sectoral carbon mappings, as well as exposures that fall within the PCAF asset class of 'Mortgages'⁵. The analysis widely incorporates the GHG accounting results from the portfolio analysis of Realkredit Denmark (RD) that follows the FIDA methodology and which accounts for the vast majority of the portfolio.

The results cover Scope 1 and 2 emissions of the properties that are split according to the energy source resulting in emitted GHGs. In-house equipment using solid fuels, heating oil or natural gas are accounted as Scope 1 emissions, whereas consumption of electricity and district heat is included in Scope 2. We recognise that the sector's Scope 3 emissions associated with materials and construction processes throughout the whole lifecycle of a building are increasing in importance⁶, and we share the aim of the financial industry to incorporate these into the analysis as the methodologies and data availability advance.

¹ Danish Energy Agency 2020.

² Even in preference to the EPC labels representing the data of highest quality in this report, it is recommended in the relevant accounting frameworks that data on actual energy consumption or resulting emissions would be prioritised when this is available.

³ Although the Danish EPC system is well known and widely spread, with approximately 640,000 properties having an assigned energy label, there remain gaps - particularly in relation to coverage of the older building stock.

⁴ According to the findings, the average energy consumption per holiday house is approximately 1917 kWh, assumed as electricity.

⁵ Refers to exposures towards personal customers used for purchasing and refinancing residential property for residential purposes and not for conducting income-generating activities.

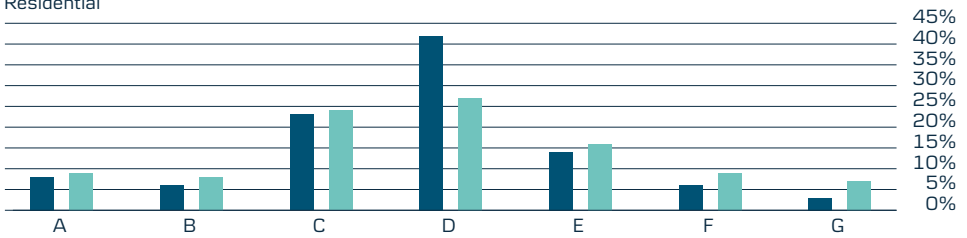
⁶ Proportional importance of life-cycle emissions is expected to increase due to the decrease in operational carbon footprint of the buildings.

EPC distribution across the portfolio

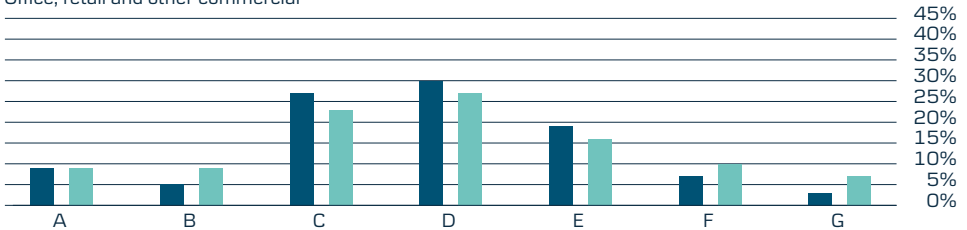
■ Danske Bank portfolio

■ Danish building stock

Residential



Office, retail and other commercial



Results

Indicator

Total financed emissions (Scope 1 & 2)

79 kt CO₂e

Total CO₂e intensity of the portfolio

673 kg CO₂e/DKKm

Danish commercial real estate portfolio coverage

100% of on-balance corporate credit exposure within scope as of year-end 2020

The Danish commercial real estate portfolio was associated with emissions of 79 kt CO₂e (673 kg CO₂e/DKKm) that could be divided into 28 kt CO₂e of Scope 1 and 51 kt CO₂e of Scope 2 emissions based on available data on primary heating source of the properties financed. The results show that burning of fossil fuels remains a significant contributor to the portfolio-level carbon footprint, particularly within residential properties. Similar to the Danish building stock as a whole, district heating appears as the most common heating source among the financed buildings. Out of all the accounted variables in the study, building area still has the greatest impact on the GHG emissions associated with a property.

Broadly speaking, the results show that the distribution of EPCs for both residential and commercial properties financed reflect the general selection of certificates issued in Denmark. The portfolio is slightly more concentrated towards the middle range of the scale. However, in the absence of property-specific EPC data, around half of the portfolio was approximated based on the average distributions representing the Danish stock as a whole.

Both internal and external data limitations continue to be the main challenge, and this results in an increased margin of error for the exercise. Because the EPCs associated with properties are often estimated by using generalised distributions and because the building-specific heating sources may remain unknown, we expect results to change as more data becomes available and as methodologies develop. Consequently, we cannot assure their full comparability with the upcoming disclosures. Any major changes affecting the outcomes will be communicated.

Providing green financing for real estate development is essential in order to reduce the energy consumption and implied GHG emissions from the sector. Via the Danske Bank Green Framework, EUR 815 million in Danske Bank green loans has been granted to green and energy-efficient building projects, with equal green lending by Realkredit Denmark amounting to DKK 8,260 million. Combined, these projects enable 15,577 MWh in avoided energy use. Among the numerous companies that have received green financing is Dades A/S, one of the largest privately owned property companies in Denmark. The company is using the proceeds of its green financing to finance the development of two EPC A2015-certified buildings in Søborg, Copenhagen.

4.4. GHG accounting for the utilities sector

Sector overview

The Nordic utilities sector is built on a low-carbon electricity market and wide-ranging district heating networks characterised by high utilisation rates of combined heat and power production (CHP) facilities. In the Nordic countries, CO₂ emissions from power generation have fallen by over one third over the past decade due to a surge in supply of renewable electricity, which today covers 73% of the power consumption in the region¹. Contributing to this development is the fact that the region has one of the world's most efficient electricity markets, which guarantees the availability of renewable power across the Nordic countries all year round. Also, the cold climate increases the overall demand for heat, and the importance of decarbonising heat-producing facilities has been recognised by the local governments. The transition to renewable heat generation is still ongoing, and emerging technologies are being observed closely, alongside already existing solutions such as bioenergy and waste heat.

Portfolio CO₂ analysis

Absolute CO₂ emissions associated with the exposure towards utilities are estimated in line with the PCAF accounting methodology for business loans. This means that the emissions are calculated on a customer level, and the data sources applied are prioritised based on the PCAF data quality hierarchy².

The portfolio technology mix and emissions intensity per kWh of power generated are disclosed as additional indicators, which is based on the physical asset-level data linked to our exposure towards power sector combined with technology-specific capacity and emissions factors. For further details about the methodology and assumptions behind the technology mix analysis, please see the PACTA for Banks methodology document and the Katowice Bank's Credit Portfolio Alignment paper.

Scope

The utilities sector consists of power-producing facilities and related infrastructure dedicated to transmitting, distributing and storing power, in addition to generating and distributing heat and cooling. The GHG emissions taken into account for the sector comprise Scope 1 and 2 emissions whose relevance differs between sub-industries. For instance, the emissions that result from operation of power generation facilities are captured under Scope 1 (direct emissions), whereas the carbon footprint of distribution and transmissions activities are largely addressed as Scope 2 (indirect emissions from purchased energy). However, Scope 3 emissions (other indirect emissions), which are excluded³ from this analysis, make up the majority of the carbon footprint of sectors such as power sales, which leaves them to be addressed in the future research alongside with upstream emissions resulting from fuel manufacturing and facility construction.

Results

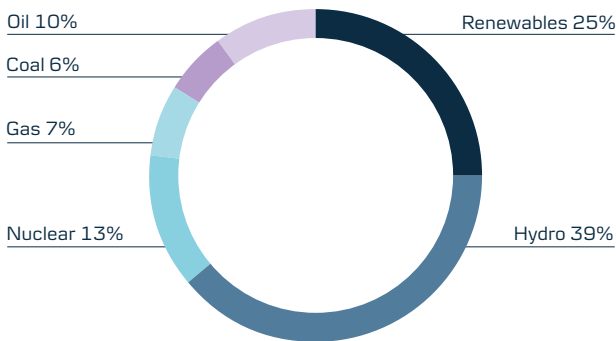
Indicator	
Total financed emissions [Scope 1]	1,657 kt CO ₂ e
Total financed emissions [Scope 2]	82 kt CO ₂ e
Total CO ₂ e intensity of the portfolio	55 tCO ₂ e/DKKm
Utilities portfolio coverage	100% of on-balance corporate credit exposure within scope as of year-end 2020

¹ Nordic Energy Research 2021.

² According to the prioritisation principle, client-reported emissions data is the most preferred option, followed by physical activity-based emissions data and economic activity-based emissions.

³ For more discussion on the exclusion of the borrowers' Scope 3, please refer to the appendix.

Weighted portfolio technology mix of power producing portfolio



Direct emissions per unit of electricity produced:
153 g CO₂e/kWh



PACTA for Banks

PACTA for Banks is a tool for measuring the alignment of our corporate lending portfolio with climate scenarios across heavy-emitting sectors. We have applied an associated software to our utilities lending book for defining the sectoral technology mix of our exposure towards power utilities, i.e. share of each power source expressed as an exposure-weighted percentage of total portfolio size. The results have been further processed by integrating regional and technology-specific capacity and emissions factors in exposure weighted capacity data, resulting in an estimated emissions intensity number for the portfolio. PACTA for Banks methodology and tool are provided by the 2° Investing Initiative (2DI), an international, non-profit think tank working to develop climate and long-term risk metrics and related policy options in financial markets. For more information about the PACTA tool, please refer to their [website](#).

Discussion

Danske Bank's lending activities are focused on the Nordic region, which is characterised by having ambitious climate policies and abundant hydropower resource. This focus is also reflected in our portfolio composition. According to the outcomes of the PACTA analysis, three-quarters of the assets linked to those of our customers that work in the field of power production are zero-carbon. The result of this is that the carbon intensity of the sub-sector per unit of electricity produced outperforms the European Union market¹. However, it is to be noted that there are limitations in terms of the coverage of the underlying dataset² as well as the accuracy of applied regional and technology-specific conversion factors. Because our work to refine our approach to calculating both portfolio technology mix and emissions intensity is ongoing, the results should therefore be interpreted as preliminary results.

Our financed emissions totalled 1,739 ktCO₂e, resulting in an emissions intensity in relation to exposure of 55 tCO₂e/DKKm. District heating producers and networks were identified as the most emission-intensive subsectors per DKK million of lending. These particular subsectors are in the process of an ongoing and yet uncompleted transition away from fossil fuels³, so this finding was not unexpected. Due to the limited data availability for small and medium-sized regional operators, the emissions are largely covered using turnover-based emissions factors, but this does not accurately reflect the actual operations of the company. Further discussions about data limitations and the implications of these can be found in the appendix.

Financing the decarbonisation of the utilities sector is a central component of Danske Bank's green lending activities. Through Danske Bank's Green Framework, EUR 648 million in green loans has been granted for renewable energy projects, with an additional DKK 1,524 million financed by Realkredit Denmark. This financing enables annual renewable energy production of 2,950 GWh and the avoidance of 854,032 tCO₂e in GHG emissions. Projects financed include the refinancing of the Kemijoki hydropower plants for Kemijoki Oy and wind power parks and development projects for Exilion. Both these Finnish companies are leaders within the respective renewable energy categories.

¹ According to the indicative assessment provided by the European Environment Agency, the CO₂e emissions from public electricity production reached 249 gCO₂e/kWh in 2018. There is a strong pressure to reduce this measure across the Union: E.g. in the International Energy Agency's Sustainable Development Scenario (SDS), the emissions released per unit of power generated decrease to 40 gCO₂e/kWh by 2040.

² For instance, the calculated weight of oil-fired capacity is disproportionate to its contribution to the actual power generation of our clients as a vast majority of these assets identified are used solely as reserve power.

³ Around 80% of Nordic district heating is produced without using fossil fuels, but localised networks mean that utilisation rates of renewables vary significantly between municipalities and adjacent areas.

4.5. GHG accounting for the shipping sector

Sector overview

The international shipping sector is responsible for about 3% of global anthropogenic GHG emissions, which are projected to increase by 50% by 2050 under a business-as-usual scenario¹. In 2018, against the backdrop of global shipping being excluded from the Paris Agreement, the International Maritime Organization (IMO) adopted an initial strategy on cutting GHG emissions from ships by at least 50% from 2008 levels by 2050. Danske Bank has recognised these efforts and is one of the founding members of the Poseidon Principles (PP), which is the first agreement among financial institutions that seeks to decarbonise the shipping industry. Furthermore, this framework for assessing and disclosing the climate alignment of ship finance portfolios lays the foundations for the specific emissions accounting of the sector.

Portfolio CO₂ analysis

The major part of the Group's exposure towards shipping consists of vessels engaged in international trade. This share of the portfolio falls within the IMO's area of authority, which means that these vessels are also analysed in line with the Poseidon Principles framework for assessing and disclosing the climate alignment of ship finance portfolios. The information gained from the Poseidon Principles analysis² covers the carbon intensity of each vessel and the vessel's alignment with established decarbonisation trajectories. These values are converted into absolute carbon emissions by multiplying the values with the vessel-level voyage data and are completed by an assessment of ships below the threshold (5,000 GT) set for the PP analysis. The measurement of absolute emissions follows the FIDA sector-specific guidelines. PCAF does not currently provide specific accounting guidelines for this sector.

Scope

The scope covers on-balance corporate credit exposures within the shipping sector as of year-end 2020 that are collateralised by vessels (both within and outside of the PP's scope). The scope excludes ships associated with the oil and gas or offshore segments, and it also excludes small vessels (i.e. barges, small motorboats and sailboats) due to lack of sufficient data for such vessels.

The CO₂ footprint of the vessels excluded from the PP is calculated by applying the data presented in the most recent IMO GHG study¹. By complementing the latter approach with the PP analysis findings³, the coverage achieved is 100% of on-balance credit exposure within the aforementioned scope.

Results

Indicator	
Total financed emissions (Scope 1 ⁴)	8,771 kt CO ₂ e
Total CO ₂ e intensity of the portfolio	524 tCO ₂ e/DKKm
Shipping portfolio coverage	100 % of on-balance exposure within scope as of year-end 2020

¹ IMO Fourth GHG Study 2020.

² Please refer to Poseidon Principles Annual Disclosure Report 2020 for the full summary of the results.

³ In the absence of a more recent study, the results reflecting the portfolio as of 2019 are applied to the exposure at the year-end 2020 [see "Attribution" in the appendix for further details].

⁴ Only direct (Scope 1) emissions resulting from fuel oil consumption are accounted due to indirect (Scope 2) emissions' negligible impact on the sector's total carbon footprint.

Discussion

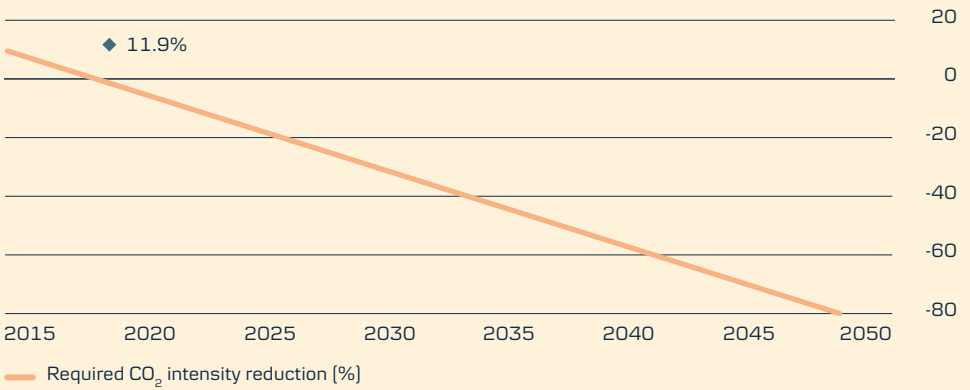
In total, the shipping portfolio emitted 8,771 kt CO₂e (524 t CO₂e/DKKm), out of which the large vessels within the scope of the Poseidon Principles constituted the vast majority. Also, the CO₂ emissions relative to exposure were significantly lower for vessels below 5,000 GT in size. More granular data availability for the ships outside the PP scope over time may require us to update our approach on forthcoming disclosures, which we will communicate clearly when this has a material impact on the calculated results.

As a hard-to-abate sector, sustainable financing in the form of sustainability-linked loans present a well-suited alternative for shipping companies by incentivising improvements in sustainability performance. One of the first shipping companies to link its GHG emissions reduction targets to its financing through a sustainability-linked loan was AP Moller Maersk, which it did in 2020. The company has subsequently published a remarkably ambitious plan of renewing its global fleet away from GHG-intensive fossil fuels. Danske Bank is proud to have supported AP Moller Maersk as a joint mandated lead arranger in the USD 5,000 million revolving credit facility.

Calculating an average carbon intensity of the fleet in terms of tonne-miles gives little meaning because the target values for different ship types vary to as great an extent as a function of ship type and size category. Instead, under the Poseidon Principles framework, we disclose our climate alignment score to reflect the difference between weighted portfolio carbon intensity and the carbon intensity required to be in line with the fleet's decarbonisation trajectory¹. The results, as shown in the table on the opposite page, show that, irrespective of our focus on financing modern tonnage, our portfolio as of year-end 2019 is misaligned with the targeted pathway. The results also show that the average carbon intensity of the shipping exposure must improve by 11.9 percentage points in order to be aligned with the emissions reduction pathway consistent with IMO ambitions.

¹ In the Poseidon Principles framework, a carbon intensity metric known as the Annual Efficiency Ratio (AER) is featured. The AER uses the parameters of fuel consumption, distance travelled, and deadweight at maximum summer draught (DWT). The AER is reported in unit grams of CO₂ per tonne-mile (gCO₂/dwt-nm).

Portfolio alignment score



5. *Conclusions and next steps*

This report covers the most recent climate risk analysis, and it includes transition risks in the oil and gas portfolio as well as flooding risk in the Danish real estate portfolio. A detailed carbon emissions mapping was also conducted of three sub-portfolios: utilities, shipping and Danish commercial real estate. Together, these three sub-portfolios constitute about 28% of on-balance corporate credit exposure within GHG mapping scope. This work is only a small part of our research and discussion about the banking industry's impact on global temperature rise and about the risks climate change pose to our business. The reason for disclosing our current progress instead of waiting until we have a complete and fully assessed overview of the GHG footprint or climate-related risks associated with our lending book is to ensure transparency and to help speed up the process of disclosing more detailed information within this continuously evolving field.

By showing our current progress and the process behind the numbers, we welcome our stakeholders to share feedback on our work and, in a best-case scenario, follow suit and join us in measuring and disclosing climate data relevant for their business. We strongly recommend that all financial market participants familiarise themselves with the initiatives discussed in this report, namely the Partnership for Carbon Accounting Financials (PCAF), 2° Investing Initiative, Finance Denmark's contributions to the standardisation of carbon accounting for the financial sector, the Poseidon Principles, and the TCFD recommendations and the assumptions behind the NGFS scenarios.

The next steps on our journey towards a Paris-aligned lending portfolio are to finalise the analysis of the GHG mapping results for the entire corporate portfolio and to set sector-specific emissions reduction targets in line with the objectives of the Paris Agreement.

By 2023, we will have one or more quantifiable climate targets that reflects the most up-to-date scientific consensus and the characteristic features of our customers' emissions profiles. The prioritisation of sectors will follow the logic introduced in this report, which means that various factors such as industry-specific risk profiles, our portfolio composition, and the availability of data and accounting methodologies will shape our future work. We will also continue to quantify the financial risks associated with climate risk using a sector-based approach to ensure that the insights gained remain relevant and useful. Tying together the carbon-mapping and target-setting insights with both transition and physical risk analysis will be key to ensuring that we better understand the risk and opportunities that climate change poses to our business and to our customers.

Although building up and implementing the methodologies will take time, this does not mean inaction – instead, climate considerations are already now an integrated part of our customer dialogue and our risk assessments. Many of these insights are included in the Group's position statements, including our new strengthened position towards fossil fuels that involves a phase-out from coal- and peat-based power production due to their particularly CO₂ intensive emissions profiles. We are committed to accelerating our efforts to support the establishment of a low-carbon society, which will also involve novel measures that have yet to be introduced. When directed in accordance with the results of careful analysis on the direct and indirect climate impacts of the banking sector, financing can serve as the driving force for this ongoing transition.

Appendix

Methodological details of GHG accounting of the corporate lending book

Greenhouse gas (GHG) emissions accounting of financial portfolios is a relatively new practice that has gained significant interest from the industry players who have expressed a clear demand for a global, standardised GHG accounting approach. The first widely acknowledged standards and detailed guidance documents have emerged over the past few years, and their further development is an ongoing process that will draw from the experiences gained by the banking sector. Consequently, the calculation approaches applied and presented in this report are subject to changes as the practices become more mature.

The sector-specific calculation rules are built on Global GHG Accounting and Reporting Standard for the Financial Industry by the Partnership for Carbon Accounting Financials (PCAF), Framework for Financed Emissions Accounting by Finance Denmark (FIDA) as well as on global best practices on sectoral carbon accounting. For the utilities sector specifically, an analysis aligned with the Paris Agreement Capital Transition Assessment (PACTA) methodology by the 2° Investing Initiative has been conducted. For a more detailed description of the methodology, please refer to the frameworks named.

The customer emissions covered in the mapping comprise the direct (i.e. Scope 1) and energy-related indirect (i.e. Scope 2) emissions allocated for the borrower¹. Scope 3 emissions as accounted by the borrower are not discussed due to limited data availability and a relevant share of the selected sectors' CO₂ emissions being accounted under Scope 1 and 2.

Attribution

Double counting of emissions between financial institutions can be minimised by using relevant emission attribution methods. The CO₂ emissions of our customers are attributed to the lending portfolio based on the proportional share of the exposure in the borrower. These attribution factors are sector specific.

The emissions attribution method for the utilities GHG mapping is aligned with the PCAF Global Standard for the respective ‘Business Loans’ class. The shipping sector is aligned with the FIDA standard, which includes specific attribution guidelines for the sector, albeit with the exception that current vessel value is used instead of value at origination as a denominator for the attribution. For CRE, the attribution factor denominator is the property value as of year-end 2020 given the alignment with both PCAF and FIDA methodologies.

Sector	Attribution factor
Utilities	The ratio between outstanding amount and total equity plus debt for unlisted clients or enterprise value including cash (EVIC) for listed clients.
Commercial real estate	The ratio between outstanding amount and property value.
Shipping ²	The ratio between outstanding amount and current ship value ³ .

1 The definitions for each asset class and applied attribution factors are adopted from the discussed accounting manuals.

2 For shipping, only direct (Scope 1) emissions resulting from fuel oil consumption are accounted due to indirect (Scope 2) emissions' negligible impact on total carbon footprint associated with the sector.

3 Due to data availability reasons, current ship value is applied instead of the value at origination.

Data quality and availability

For quantifying financed emissions, a great variety of data inputs are needed to first approximate the borrower's total emissions and then calculate the financial institution's share of the customer's carbon footprint. The financial inputs underlying the attribution factor are gathered from internal data, whereas the data on the borrower's emissions comes from external sources¹. Given the lack of data availability, an optimised data-gathering process requires us to strike the right balance between feasibility, accuracy and communicability of the applied solutions.

The quality of different emission data sources is determined in accordance with the guidance in PCAF Global Standard, which stipulates that financial institutions should use the best available data in accordance with the data hierarchy that prioritises verified customer-reported emissions. In practical terms, company- or asset-level data is not readily available for most of the customers, which is why the majority of the emissions are estimated by using lower quality data, namely physical and economic activity converted into CO₂ emissions. Finally, after applying data on the aforementioned levels, the carbon footprint associated with any remaining data gaps has been approximated by extrapolating the calculated results by exposure.

We approach our portfolio-related emissions on a sectoral basis, meaning that methodology, scope, and metrics are unique for each industry. This allows for each industry's sector-specific characteristics to become visible in the output of the analysis and to feed in the target setting at a later stage.

The focus should be on each sector's most relevant emissions sources, which adds to the complexity of the data gathering process because the application of overarching proxies is kept to a minimum. We are reporting absolute Scope 1 and Scope 2 emissions across sectors, whereas Scope 3 remains to be covered at later stages. To date, the availability and reliability of Scope 3 data is insufficient for the utilities, real estate and shipping sectors, but we expect the quality to improve as the accounting methodologies mature.

We have committed to using the highest quality data available for each asset class and industry sectors and to strive to improve data quality across the portfolio over time. This may cause unexpected fluctuation in the calculated emissions that we will account for in our further disclosures. Moreover, we are able to work on the industry-wide data challenges by contributing to the collaborative efforts to increase data availability and accuracy with our partner initiatives PCAF and FIDA. Eventually we believe that current issues in data quality and availability will not constitute a valid reason to postpone taking action.

¹ There is often a lag between financial reporting and required data, such as emission factors becoming available. In these instances, the most recent data available, even if this data represents different years, is applied.

Results and data sourced by analysed asset class

Sector	Scope	Main external data sources
Utilities	Corporate on-balance credit exposure within the utilities sector ¹ as of year-end 2020	GHG data from external databases ² PACTA tool Customers' own sustainability reporting
Commercial real estate (Denmark)	Corporate on-balance credit exposure collateralised by residential or non-residential properties within the commercial property sector in Denmark as of year-end 2020	E-nettet (property-specific data on energy performance and the granted EPC)
Shipping	Corporate on-balance credit exposure collateralised by vessels within the shipping sector as of end-2020	IMO DCS (ship fuel oil consumption database) IMO Fourth GHG Study 2020
Total		

Emissions factors	Scope 1 (kt CO ₂ e)	Scope 2 (kt CO ₂ e)	Emissions intensity (t CO ₂ e/DKKm)
International Energy Agency (IEA) Exiobase Input- Output database	1,657	82	55
Danish Energy Agency	28	51	0.673
IMO	8,771	N/A ³	524
	10,456	133	

¹ Refers to clients engaged in production, transmissions, distribution and trading of electricity, heat, cooling and gas, and water utilities.

² Primarily CDP, Trucost, ISS ESG and EU ETS database.

³ Only direct (Scope 1) emissions resulting from fuel oil consumption are accounted due to indirect (Scope 2) emissions' negligible impact on the sector's total carbon footprint.

Overall exposure to high climate risk sectors

Key trends in elevated climate risk sectors

Because capabilities and climate risk understandings are being enhanced in order to ensure that we can conduct scenario analysis and physical risk assessments, many of the sector specific climate challenges are already known for some of the portfolios. This section aims to provide insights into some of the elevated climate risk sectors and details how we are working with these already.

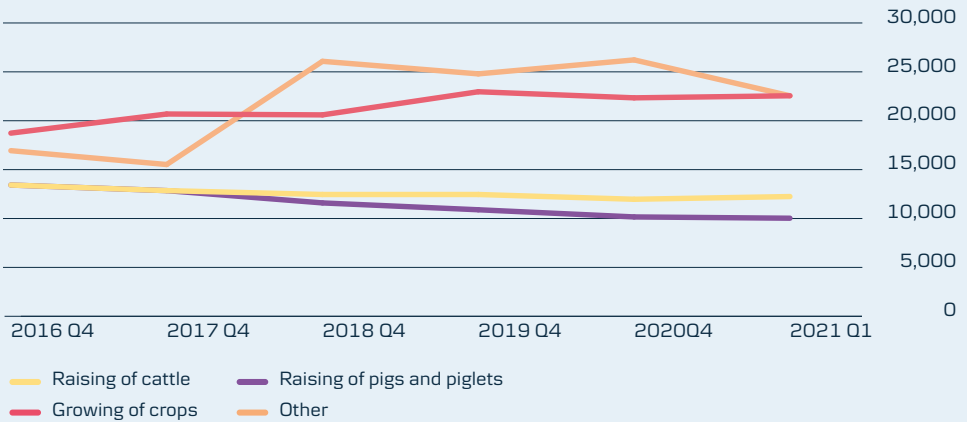
Agriculture portfolio

As assessed in internal risk reports, the agricultural sector faces numerous environmental, social and corporate governance (ESG) challenges, particularly with respect to environmental risks, including climate risk. While many of the physical risks are still to be further analysed and understood in a Nordic context, the high carbon intensity of the sector is likely to create many challenges for our customers in the years to come, when looking from the transition-risk perspective as addressed in numerous climate policies at both national and EU levels. Due to the important role played by the sector in feeding growing populations, supporting customers in the transition will be of key importance.

For a number of years, a Group-wide risk appetite limit has been in place to maintain a relatively stable exposure in the agriculture portfolio. When looking at the exposure developments at a sub-segment level, the trend has been to lower exposure towards livestock (i.e. raising of pigs and cattle), while shifting the exposure towards the growing of crops and other mixed farming (see figure on the right hand side). Due to the higher carbon intensity of animal production compared with the carbon intensity of growing of crops, the continuation of such exposure strategies will help strengthen the portfolio in the short term from a transition-risk perspective.



Exposure developments in the agriculture portfolio (% of corporate exposure)



In the future, the aim is to conduct both physical risk and transition risk assessments to determine further actions. An initial sensitivity analysis has already been carried out to look at the financial impact on farmers. The analysis uses different levels of future carbon taxes as estimated in transition risk scenarios. By continuing to work closely with customers and by getting better data on CO₂ emissions at farm-level, for example, we will be better able to support the transition and to help customers manage the climate-related risks that are set to increase over time.

See next page for an overview of the Group's exposure towards other high risk sectors due to climate risk

Exposure development of other elevated climate risk sectors (transition risk)

Exposure, DKKm	2019-Q4	2020-Q4	2021-Q1 (% of corporate exposure)
Commercial property	315,889	328,808	315,852 (31,4%)
Construction & building materials	49,906	49,507	50,438 (5,0%)
Metals and mining	11,886	13,355	12,148 (1,2%)
Pulp and paper, chemicals	32,682	40,020	38,002 (3,8%)
Shipping, oil & gas ²	56,911	43,076	44,345 (4,4%)
Transportation	16,184	15,323	16,310 (1,6%)
Utilities & infrastructure	47,106	68,416	60,466 (6,0%)

¹ Credit risk exposure is defined as the credit exposure relating to lending activities (both on and off-balance) as defined on page 49 of the interim financial statements for Q1 2021.

² Exposure numbers include the oil and gas exposure already denoted in the sector deep dive in this report.

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Forward-looking statements

In alignment with the TCFD recommendations (Task Force on Climate-related Financial Disclosures), assessing risks and opportunities arising from climate change requires scenario analysis that takes in forward-looking parameters and longer-term time horizons to account for the nature of climate change. Due to numerous assumptions, subjective judgements and large uncertainties embedded in climate scenarios, the forward-looking assessments should not be viewed as reliable indicators of future performance or as complete or accurate accounts of actual performance. Caution must therefore be exhibited when interpreting scenario analysis results disclosed in this report.

