



Green Bond Impact Report

- Impact statement by
year-end 2021



KOMMUNEKREDIT
STEADY & STABLE



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Get in touch

We welcome any comments, suggestions, or questions you may have regarding this report. Please send an email to kk@kommunekredit.dk.

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More information

- [Annual Report 2021](#)
- [Sustainability Report 2021](#)

About this report

This Green Bond Impact Report includes allocation and, to the extent possible, impact reporting with examples of eligible projects and summarizes our green bond approach under KommuneKredit's [Green Bond Framework](#) (dated March 2017) up until year-end 2021. We apply a portfolio-based approach, reporting on impact on an aggregated level as well as an anonymised list of all projects financed under our Green Bond Framework 2017 as of 31 December 2021. See [List of Green Loans 2021](#).

In the report, we also briefly introduce our new [Green Bond Framework 2022](#) and the reporting practice for KommuneKredit's annual green bond impact reporting from 2022 onwards.

The report has been approved by our Management Board and was published on 25 May 2022.

Message to our investors

Climate ambitions are high at all levels of government in Denmark and constitute a strong foundation for KommuneKredit's green financing. We support the Danish climate ambitions and since 2017, we have issued green bonds for DKK 19,1 billion on the back of DKK 27,1 billion in green loans. The impact in terms of annual CO₂ reduction/avoidance attributable to the green loans amounts to approximately 1.88 mega tonnes – the equivalent of the annual CO₂ emissions of more than 110,000 Danes.

Clearly, access to finance is important for driving the green transition and achieving the objectives of the Paris Agreement on Climate Change. In Denmark, KommuneKredit plays a special role as the primary vehicle for providing finance for local municipal and regional investments that can contribute to the national CO₂-reduction target of 70 per cent by 2030. Our members – all 98 municipalities and 5 regions in Denmark – are jointly and severally liable for all KommuneKredit's obligations and as such, we constitute a safe link between local investments in Denmark and the global capital markets.

We would like to thank our green bond investors for their continued support for our green bonds. The investments support Denmark's green transition and our customers' local green actions and investments in projects furthering

the progress towards a low-carbon and climate-resilient future. Our aim is to continue to contribute to a strong green capital market and to ensure that the financing required for local green transition is available to our customers at the lowest possible cost.

Sustainable finance is a high priority in our Strategy 2025. In 2022, we launched an updated Green Bond Framework to align with current standards in the market. We expanded the loan categories eligible for green finance, and further we enhanced the transparency of our green financing practice. Future green bonds and reports from us will be issued according to this framework. Our customers' demand for green loans constitutes the foundation for new green bond issuances, and we aspire to maintain a broad and diversified investor base and accommodate the growing demand for green assets from our investors in support of local green transition.

Henrik Andersen

Managing Director, Member of the Management Board and Chairman of KommuneKredit's Green Bond Committee.



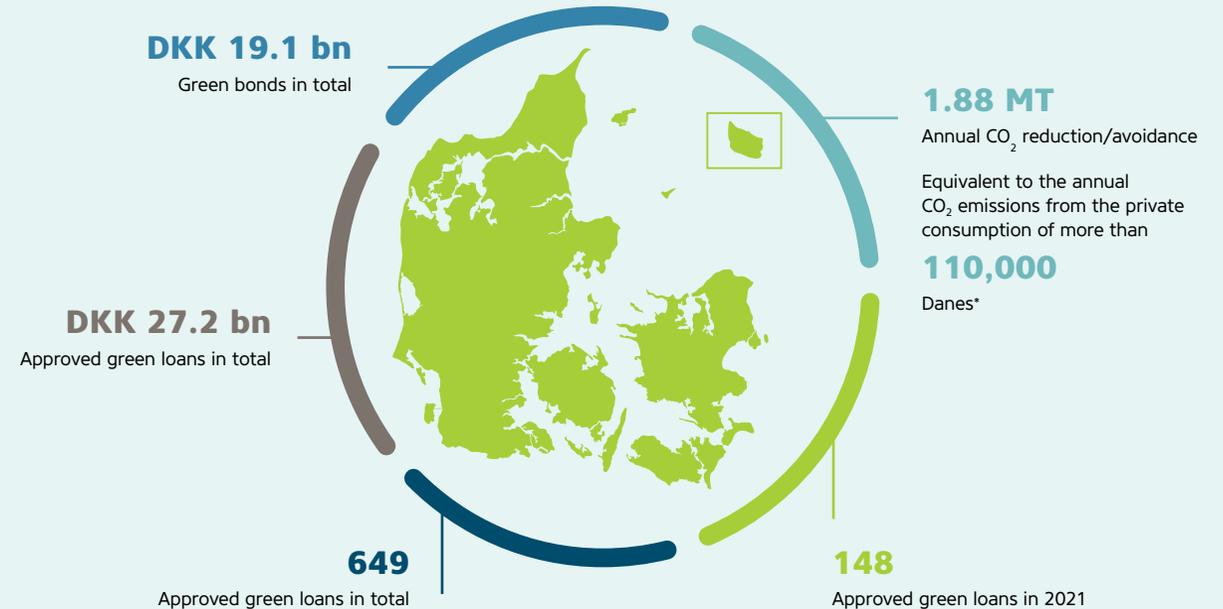


Green bond impact

Continued growth in green project and green bond portfolio.

We fund KommuneKredit's green loans by issuing green bonds. Buying our green bonds allows our investors to invest in local green projects in Denmark. Since our inaugural green bond in 2017, we have issued green bonds annually and continue to experience high investor demand.

In this report, we disclose the expected environmental impact associated with KommuneKredit's approved green loans by year-end 2021. The impact is based on our customers ex ante estimates of impact assessments.



* Based on the Danish think tank CONCITO's estimate from 2019 of CO₂e-emissions related to the per capita private consumption in Denmark.

Green bond timeline





Green project portfolio

More than 90 per cent of our green loans finance district heating and water management.

With our allocated green bond proceeds, KommuneKredit finances and refinances projects within four eligible green loan categories: District heating, water management, clean public transportation, and energy efficiency. A high-level mapping of our green lending purposes from 2020 shows that they link to five of the 17 UN Sustainable Development Goals (SDGs). Based on an initial assessment made in 2020, we also indicate which of the six environmental objectives of the EU taxonomy our green lending primarily supports.

Green loan category				
Share of total approved green loan volume (2017-2021)	56%	36%	6%	2%
Share of total number of approved green loans (2017-2021)	35%	59%	2%	4%
SDG linkage*				
Suggested primary EU environmental objective	Climate change mitigation	Sustainable use and protection of water and marine resources	Climate change mitigation	Climate change mitigation

* The Nordic Public Sector Issuers' Position Paper on Green Bonds Impact Reporting, 2020 and the International Capital Market Association's (ICMA) Green, Social and Sustainability Bonds: A High Level Mapping to the Sustainable Development Goals, 2020, informed our high-level assessment of our contribution to the SDGs and targets against our green lending purposes in 2020.



Green bonds

International investors show strong interest in our green bonds.

Since we launched our inaugural green bond in June 2017, we have issued green bonds annually, and they continue to attract strong demand. In October 2021, we launched our first green bond in the Sterling market with both Danish and international investors participating in our GBP 250 million issue representing high quality and a diversified investor base.

Going forward, we will continue our active role in the green bond market in alignment with our new Green Bond Framework, see p. 15-16.

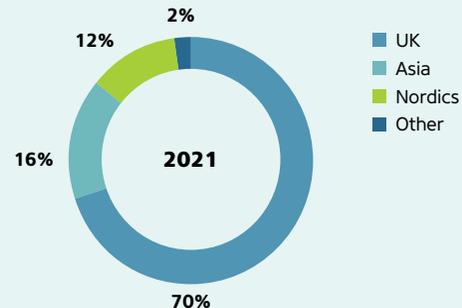
Outstanding green bonds

ISIN	Size (million)	Issue date	Maturity date	Coupon (%)
XS1622415674	EUR 500	1 June 2017	18 May 2027	0.75
XS1851226891	EUR 750	5 July 2018	5 July 2028	0.75
XS2081058096	EUR 500	19 November 2019	21 November 2039	0.625
XS2226280084	EUR 500	3 September 2020	26 September 2040	0.125
XS2240514336	AUD 40	2 October 2020	1 October 2032	1.336
XS2400352949	GBP 250	20 October 2021	15 August 2024	0.75

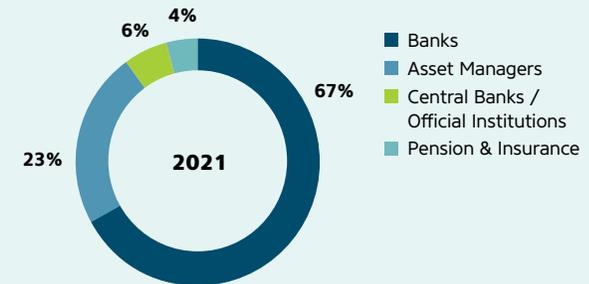
Investor distribution

GBP 250 million green bond

Investor geography



Investor type



Green project portfolio

We continue to grow our green project portfolio.

At year-end 2021, KommuneKredit had DKK 19.1 billion in outstanding green bonds, and we grew our approved green project portfolio to 649 green loans totaling DKK 27.2 billion. Due to amortization, the outstanding loans at year end 2021 amounted to DKK 25.1 billion.

We apply a bottom-up approach to green financing. First, we identify eligible projects. Following approval of the loans by the Green Bond Committee, we provide financing using proceeds from Green Bond issues, see p. 13. In 2021, the share of new financing was 100 per cent.

Outstanding green bond portfolio and approved green loan portfolio by year end

DKK billion



100%

share of new financing
vs. refinancing

Calculated for the GBP 250 million green bond issued in 2021.





Green loan categories

Most of our green loans are used to finance the district heating and water management categories.

We finance projects within district heating, water management, clean public transportation, and energy efficiency. Across the four categories, more than 90 per cent of our green loans finance district heating and water management in terms of both lending volume and number of loans.

90%
of our green loans
finance district heating
and water management

Green loan categories



District heating

New investments in and ongoing maintenance of distribution infrastructure and new investments and maintenance of non-fossil energy generation and associated technological solutions providing customers with district heating leading to a reduction in CO₂ emissions.



Water management

New investments in and ongoing maintenance of water collection, treatment, recycling, cleaning, reuse, technologies, and related infrastructure.



Clean public transportation

New investments in and ongoing maintenance of low-energy or emission transportation assets, systems, infrastructure, components, and services that facilitate modal shifts from private transportation to increased use of public transportation such as trains, underground trams, and buses to the extent that these lead to a reduction in CO₂ emissions.

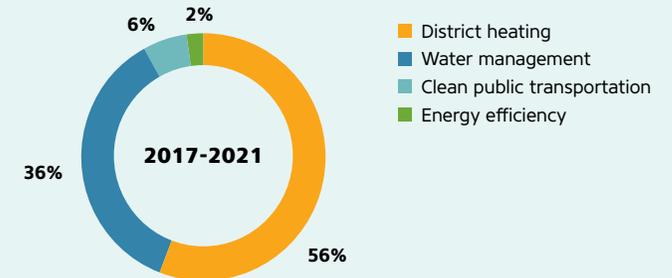


Energy efficiency

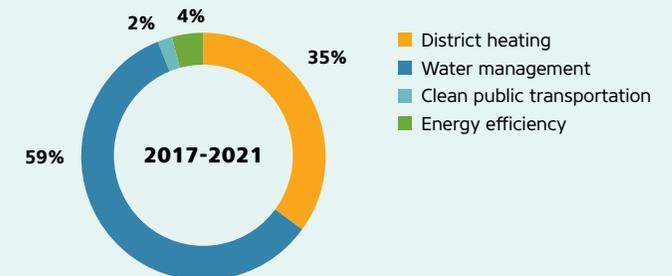
New investments in and ongoing maintenance of existing buildings leading to more energy-efficient buildings. New investment or ongoing maintenance of public street lighting leading to a more energy-efficient system.

Approved green loans by project category

Share of total green loan volume



Share of total number of green loans





Impact statement

The impact of our approved green loans stands at an annual CO₂ reduction/avoidance of 1.88 mega tonnes.

We disclose the estimated environmental impact related to the total annual amounts of approved green loans with a focus on annual reductions/avoidance of CO₂ emissions. The disclosed impact is based on ex ante impact assessments provided by KommuneKredit's customers for those projects where environmental impact data is available. The impact statement is based on our customers' ex ante estimates and the data has not been verified by KommuneKredit.

The impact attributable to green bond investors is 70.4 per cent, which is calculated as the total outstanding green bonds divided by total outstanding green loans using FX rates at year-end 2021.

Impact of approved green loans (2017-2021)*

Project portfolio	KommuneKredit's share of impact	Green bond investors' share of impact
	Annual CO ₂ reduction/avoidance	Annual CO ₂ reduction/avoidance
District heating	1,876,302 tonnes	1,320,714 tonnes
Water management	83 tonnes	58 tonnes
Clean public transportation	2,768 tonnes	1,949 tonnes
Energy efficiency	4,070 tonnes	2,864 tonnes
Total	1,883,223 tonnes	1,325,585 tonnes

* Aggregate energy savings achieved through KommuneKredit's green loans have not been disclosed for green bonds in this report due to limited data availability and data quality.

Impact attributable to green bond investors

ISIN	Size (million)	Issue date	Maturity date	Attributable impact
XS1622415674	EUR 500	1 June 2017	18 May 2027	13.7%
XS1851226891	EUR 750	5 July 2018	5 July 2028	20.5%
XS2081058096	EUR 500	19 November 2019	21 November 2039	13.7%
XS2226280084	EUR 500	3 September 2020	26 September 2040	13.7%
XS2240514336	AUD 40	2 October 2020	1 October 2032	0.7%
XS2400352949	GBP 250	20 October 2021	15 August 2024	8.2%



District heating

A DKK 400 million green loan contributes to financing new district heating solutions in and around Esbjerg to phase out fossil fuels.

In its 2030 strategy, multi-utility company DIN Forsyning pursues 100 per cent fossil-free production of district heating with zero loss of applied resources. To this end, a project categorized as 'green heating of the future' involves the replacement of heat supplied from a coal-fired combined heat and power plant with many small and different innovative solutions, linked to a central distribution network. The future energy sources are set to provide significant CO₂ reductions.

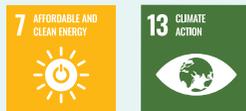
In 2021, DIN Forsyning obtained a green loan as part of the financing for the initial phase of the project. It involves a 70 MW heat pump system, which will not only be the largest seawater heat pump in Denmark, but also the largest heat pump in the world using CO₂ as refrigerant. Furthermore, a 60 MW biomass boiler plant with flue gas condensation is being built to operate in parallel with the

heat pump. The solution is wastewater free as all water is purified to stringent requirements. In the future, the project will also entail utilisation of surplus heat from data centres as well as from local industry among other solutions.

When selecting the seawater-based heat pump, it was essential to DIN Forsyning and the Danish Environmental authorities to protect the tidal flats and sensitive environment of the Wadden Sea, which is one of the EU's Natura 2000 nature protection areas and on the UNESCO World Heritage List.

The seawater heat pump and the biomass boiler plant are scheduled to be in operation by spring 2023, when the unit ESV3 at the coal-fired combined heat and power plant will be closed down.

SDG linkage



Primary EU environmental objective

Climate change mitigation.



Visualization: Arkitema

A seawater heat pump system is the backbone of the future district heating production in the distribution area of Esbjerg and Varde which covers a population of about 100,000 people.

In brief:

DIN Forsyning A/S is a multi-utility company within the areas of district heating, water, wastewater, and waste management serving the municipalities of Varde and Esbjerg in Southwest Jutland.

DKK 1.6 billion in total estimated project costs.

DKK 400 million disbursed in a green loan from KommuneKredit in 2021.

Expected environmental impact:

- 202,380 tonnes in annual CO₂ avoidance – of which around 50,600 tonnes can be attributed to KommuneKredit's green loans in 2021.
- 2,150 TJ annual avoidance of fossil fuels – of which 537 TJ can be attributed to KommuneKredit's green loans in 2021.
- Green, secure, flexible, and affordable district heating supply.





Water management

A DKK 62.5 million green loan has financed two state-of-the-art waterworks to secure the future water supply in Aalborg.

The mission of multi-utility company Aalborg Forsyning is to create security of supply and sustainability now and for future generations. To match growth and development in the Municipality of Aalborg, investments were needed to ensure the future water supply for people and businesses in the city.

In 2021, after more than 15 years of planning, Aalborg Forsyning obtained a green loan to establish two waterworks and associated sourcing sites at Lundby Krat and Volsted Plantage. The investment allows for an annual 1.4 million m³ extraction of groundwater and is set to future-proof both water supply and the security of supply to Aalborg Forsyning's customers. Each of the waterworks has two separate supply lines to secure supply if e.g., one line is being serviced.

The sourcing sites are located close to forested areas, which helps to purify the water naturally. The expectation is that in the long term no advanced water treatment (i.e., purification) is needed for groundwater extracted from the catchment areas. To ensure that the extraction will not have an adverse impact on existing natural habitats, monitoring of nearby wetlands and ecosystems have been initiated.

Furthermore, agreements have been made with landowners in the catchment areas regarding the use of land to protect the groundwater. Specifically, at Lundby Krat, a multifunctional groundwater protection project is being carried out involving several partners. The aim is to serve multiple interests including protection of biodiversity, recreational opportunities, afforestation, continued farming, and clean drinking water.

SDG linkage



Primary EU environmental objective

Sustainable use and protection of water and marine resources.



Photo: Aalborg Forsyning A/S

The new waterworks at Lundby Krat has four production wells and a license to annually extract 1 million m³ groundwater.

In brief:

Aalborg Forsyning A/S is a multi-utility company within the areas of district heating, cooling, gas and water, wastewater, waste management, and energy advisory serving the Municipality of Aalborg in North Jutland.

DKK 62.5 million disbursed green loan from KommuneKredit in 2021.

Expected environmental impact:

- Secure future supply of clean drinking water.
- Protection of groundwater.
- Improve water treatment.





Energy efficiency

A green loan of nearly DKK 100 million finances energy optimisation and helps reduce the energy consumption of Region Zealand.

The regional authority, Region Zealand, works strategically with partners to find solutions within the areas of energy, circular economy and climate action and adaptation as part of the green transition. To contribute to Denmark's national goal of reducing CO₂ emissions by 70 per cent by 2030, a specific focus is on shifting energy supplies from fossil fuels to renewable energy, while at the same time reducing the consumption of energy.

In connection with the establishment of a new university hospital in Køge, for which construction has been ongoing since 2015, the existing hospital will triple in size. It is one of four hospitals in Region Zealand and from 2022, when construction is complete, it will be the centre of all specialised treatments for the entire region.

In 2021, a green loan was granted to help finance the energy optimisation of the new hospital in accordance with building code 2020. This involves renewable energy production at the hospital via solar panels on the roof. It also involves more stringent requirements for the building density design to minimize leakage as well as ventilation systems consuming less electricity, which leads to reductions in CO₂ emissions and the overall consumption of energy.

A small part of the loan, around DKK 2 million, is dedicated to energy-saving initiatives on some of the properties housing psychiatric hospitals that are also managed by Region Zealand.

SDG linkage



Primary EU environmental objective

Climate change mitigation.



Photo: Region Zealand

The solar panels on the roof of the university hospital in Køge are connected to the building's electricity supply system.

In brief:

Region Zealand is one of Denmark's five regions, which manages the Danish healthcare system and handles tasks within the social services and regional development. Region Zealand covers 17 municipalities on the island of Zealand as well as the islands of Lolland, Falster, Møn and several smaller islands.

DKK 99.55 million disbursed green loan from KommuneKredit in 2021.

Expected environmental impact:

- 29 tonnes in annual CO₂ reductions.
- 900 GJ in annual electricity savings.

Green financing governance

Our Green Bond Framework 2017 sets the criteria and process for governing our green financing up to year-end 2021.

This report covers our green financing in line with KommuneKredit's [Green Bond Framework 2017](#). The framework is consistent with the [Green Bond Principles](#) (2016) issued by the International Capital Markets Association (ICMA) and has a [Second Party Opinion](#) of medium green shading. The opinion was provided in 2017 by the Center for International Climate and Environmental Research - Oslo (CICERO).

We use our green bond proceeds to finance either new investments, new investments into existing eligible projects or existing investments into existing eligible projects. We allow for both new financing and re-financing from the green

bond proceeds within four eligible project categories, see p. 8. We define eligible projects as a selected pool of credit facilities and loans provided by KommuneKredit to finance, partly or in whole, a customer's project or investment in the transition to low-carbon and climate-resilient growth. Customers eligible to receive a green loan from KommuneKredit are Danish regions, municipalities and entities guaranteed by regions or municipalities.

All green loans are verified and approved by KommuneKredit's [Green Bond Committee](#) before being classified as eligible projects. The committee upholds the governance of our Green Bond Framework and in 2021, it consisted of two

external members and two members from KommuneKredit, one of whom serves as chair. As part of our internal assurance process, we provide an annual [Assurance Statement](#) on KommuneKredit's green bond management and to ensure transparency, we publish an annual [Green Bond Impact Report](#) for investors to follow the development and allocation of proceeds.



Potential eligible project

Review of loan application to be categorised as a potential eligible project under our framework.



Preliminary eligible project

Conclusion on the review based on the criteria to determine whether it can be categorised as a preliminary eligible project.



Eligible project

Verification by the Green Bond Committee to approve or reject the eligibility of a project.

Reporting methodology

We include allocation reporting and apply a portfolio-based approach.

This report comprises eligible projects financed under KommuneKredit's [Green Bond Framework 2017](#) until year-end 2021. We report on allocation and apply a portfolio-based approach to report on impact at an aggregate level. We also disclose an anonymised list of all projects financed under our Green Bond Framework 2017 as of 31 December 2021. See [List of Green Loans 2021](#).

We strive to align our reporting with the Nordic Public Sector Issuers: [Position Paper on Green Bonds Impact Reporting](#) (PPGBIR (2020)). From 2022, we will report on allocation and impact as outlined in our [Green Bond Framework 2022](#), which was launched on 28 February 2022.

Portfolio-based approach

We apply a portfolio-based approach in our impact reporting, i.e., report on a bond-programme basis, and report in the impact of approved amounts as well as the impact attributable to our investors. Further, we provide a breakdown of the impact attributable to each bond issuance, using a simple pro-rata allocation as recommended in the PPGBIR, see page 9 for an overview of the impact attributable to green bond investors.

Reporting on expected impact

Reported impacts are based on ex ante impact assessments provided by KommuneKredit's customers. We collect data on CO₂ reduction and other impacts per invested monetary unit solely for investments made in projects or project categories where such impact is quantifiable, relevant, and available. KommuneKredit does not validate the data provided.

As defined in our Green Bond Framework 2017, our eligible project criteria allow projects that contribute to either a CO₂ reduction compared to an existing situation or a zero CO₂ project, which maintains an existing climate-friendly project profile/solution. For some projects, particularly within water management, it can be difficult to collect impact data as the projects have long-term construction phases and customers may borrow on an annual basis for their ongoing capital expenditures. Furthermore, a granted loan can cover several projects. Even though the projects are environmentally friendly by definition,

it is proving difficult to quantify the impact and for 2021, we disclose only on an aggregate portfolio level the estimated data on CO₂-emission reductions/avoidance.

New financing and refinancing

It is KommuneKredit's ambition to use the majority of the proceeds for new projects, i.e., financed within 15 months before the date a green bond is issued, as defined in our Green Bond Framework 2017. However, we allow for both new financing and refinancing from our outstanding green bonds proceeds.

At 31 December 2021, KommuneKredit had six outstanding green bonds including one private placement. The distribution between new financing and refinancing is based on the relevant issue dates. When we calculate the split between new finance and re-finance, KommuneKredit applies a waterfall principle. Firstly, we count 15 months backwards from the issue date of the relevant green bond. If the accumulated notional amount of green loans, disbursed within 15 months, is greater than the notional amount of the relevant green bond, the "new financing" is 100 per cent. The same approach is repeated for the other green bond issues.

The outstanding notional amount of the green loan portfolio may vary over time and on any given historical date. New green loans are added to the green loan portfolio at the date of approval by the Green Bond Committee. The green loan portfolio amount is adjusted for loan pre- and repayments.

New framework

Our new Green Bond Framework 2022 is a strong outset for our increasing engagement in the green capital market.

On 28 February 2022, we launched our updated framework and going forward, we will issue green bonds under KommuneKredit's [Green Bond Framework 2022](#). CICERO Shades of Green has provided a [Second Party Opinion](#) on the framework verifying its credibility, impact, and alignment with ICMA's Green Bond Principles 2021 including an assessment of the EU Taxonomy alignment. The opinion has resulted in an overall medium green shading and the best available governance rating with an Excellent Governance score.

Our updated framework allows for both green loans and green financial leases and it includes sharpened eligibility criteria enabling a broader range of eligible projects for our green financing. This is reflected in the number of green loan categories being extended from four to six. Furthermore, the framework involves a strengthened impact reporting methodology, and our 2022-reporting will include an external review of our allocation reporting.

KommuneKredit's Green Bond Committee

The Green Bond Committee upholds the governance of KommuneKredit's Green Bond Framework 2022 and has five members, three of whom are external. Furthermore we have two alternate internal members. The external members are employed in, or in a sector relevant to, the Danish local government sector and have expert knowledge of the sectors proposed to be eligible for lending under the new framework, including extensive knowledge of the environment, climate change and/or climate adaptation.

Members of our Green Bond Committee

External members



Carl Hellmers
Voting member
CEO, Fredericia Utility



Hans-Martin Friis Møller
Voting member
CEO, Kalundborg Utility



Trine Lindegaard Holmberg
Voting member
CEO, ARGO

Internal members



Henrik Andersen
Chairman
Managing Director



Guri Weihe
Voting member
Head of Sustainable Finance

Green Bond Committee Secretariat of KommuneKredit



Louise Rosentoft
Green Bond Committee
Coordinator
Senior Funding & IR Manager



Helene Breinholt Søndergaard,
Alternate
Sustainable Finance Manager



Lasse Pinderup Nygaard,
Alternate
Sustainable Finance Manager



New green loan categories



Climate change adaption

Loans for investments in projects that improve the resilience of local communities to current and expected future climate change, strengthen the resilience to climate-related hazards and natural disasters and reduce the negative impact and vulnerability of people, nature and/ or assets.



Energy

Loans for investments in and ongoing maintenance of distribution infrastructure and new investments and maintenance of clean energy generation and associated technological solutions providing customers with district heating as well as products of renewable energy.



Pollution prevention and control

Loans for investments supporting the transition to a circular economy, waste management, reduction, sorting and recycling. The category also includes waste-to-energy following the principles of the waste hierarchy and potential investments in removal technologies, such as capture and integration of CO₂.



Clean transportation

Loans for investments in zero-emission transport assets, systems and infrastructure, which facilitates the electrification of infrastructure and associated subsystems, as well as a shift from private transport to increased use of public transport. The category includes land as well as water transport.



Green buildings

Loans for investments for construction and renovation purposes, acquisition and ownership of energy-efficient buildings, as well as renewable energy technologies and energy efficiency equipment.



Sustainable water and wastewater management

Loans for investments in and ongoing optimisation of facilities for collection, treatment, supply, purification and/or utilisation of water and wastewater of different quality and origin to improve water loss management, reduce energy consumption, CO₂ emissions, improve health measures or secure and optimise the water supply in Denmark.



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