



KBN

The Norwegian Agency
for Local Governments

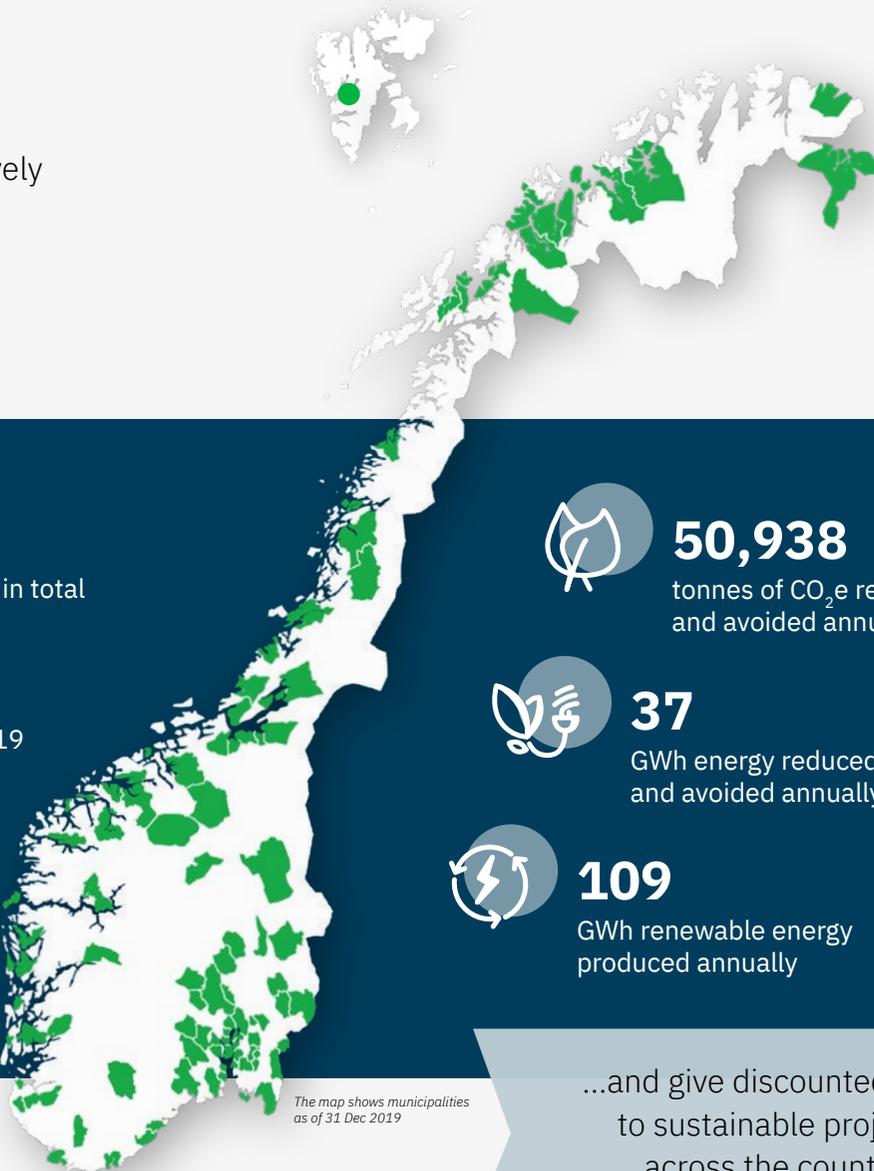
2019

Impact Report

GREEN INVESTMENTS
FINANCED WITH GREEN BONDS

Impact Report 2019

All the funding raised by KBN's green bond issues is used exclusively for lending to customers as green loans. This report presents the projects financed by KBN's green bonds. The map shows the geographic location of these.



We raise funding from international capital markets...

16.6 Green bonds
bn. NOK

23.0 Green loans
bn. NOK

225 projects in total

45 New projects in 2019

50,938 tonnes of CO₂e reduced and avoided annually

37 GWh energy reduced and avoided annually

109 GWh renewable energy produced annually

...and give discounted loans to sustainable projects across the country.

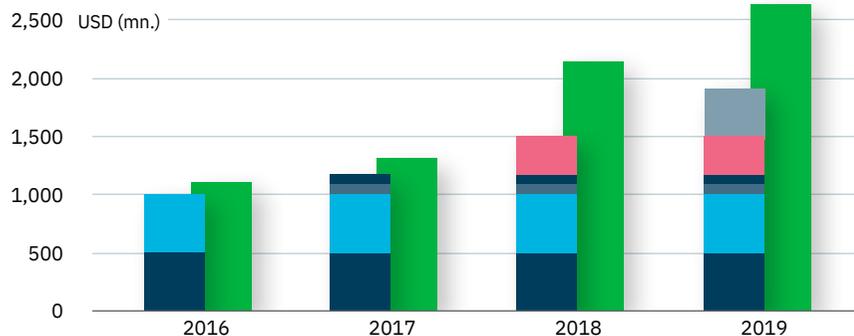
The map shows municipalities as of 31 Dec 2019

The information in this report is provided by our customers. The data has been reviewed by KBN but has not been verified by KBN or a third party. Calculation of impact is done by KBN. We do our best to ensure the quality of the information provided; however, the reader should be aware that there is uncertainty related to estimating climate and environmental impact from investments. A grid factor of 315g CO₂ per kWh of electricity is used for all calculations from electricity to CO₂e. This grid factor is recommended in the "Nordic Public Sector Issuers' Position Paper on Green Bonds Impact Reporting". Read more about reporting principles on page 14-15 in this report.

Executive Summary

As of 31 Dec 2019

Green Bonds Issuance and Green Project Portfolio



* USD 100 mn. tap of USD 500 mn.

Basic information

Green Bond Framework applied	KBNs Green Bond Framework, June 2016
Reporting period	Calendar year 2019. The report also contains an overview of outstanding green projects.
Date of publication	February 28, 2020
Reporting frequency	Annual
Next publication (planned)	February 2021
Approach	Portfolio-based and project-by-project reporting
Reporting framework	Nordic Public Sector Issuers: Position Paper on Green Bonds Impact Reporting (February 2020)

Project Portfolio and Impact Overview

Project category	Outstanding amounts to projects (1000 NOK)	CO ₂ e reduced and avoided (tonnes annually)	Impact tonnes CO ₂ e per million NOK
Buildings	13,570,913	6,991	0.5
Renewable energy	571,240	34,476	60.4
Energy efficiency	410,821	5,637	13.7
Transportation	3,942,029	3,833	1.0
Waste and circular economy	757,745	n/a	n/a
Water and wastewater management	3,420,036	n/a	n/a
Land use and area development projects	279,355	n/a	n/a
Climate change adaptation	96,521	n/a	n/a
Total	23,048,661		
Annual renewable energy generated	109 GWh		
Annual energy reduced/avoided	37 GWh		

The impact reported corresponds to the share of the project financed by us. A grid factor of 315g CO₂e per kWh electricity is applied throughout when converting electricity to emissions, as this is recommended by the Nordic Public Sector Issuers. Read more about estimation methods on page 14-15.

Impact attributable to green bond investors

Total outstanding green bonds divided by total outstanding disbursed amounts to projects, as of 31 dec 2019 (in NOK)				72% of which
ISIN	Issue date	Amount	Maturity Date	
XS1188118100 US50048MBX74	11/02/2015	USD 600 mn.	02/11/2025	23%
XS1508672828 US50048MCD02	10/25/2016	USD 500 mn.	10/26/2020	19%
NO0010811276	11/29/2017	NOK 750 mn.	11/29/2027	3%
NO0010811284	11/29/2017	NOK 600 mn.	11/29/2032	3%
AU3CB0256162	09/05/2018	AUD 450 mn.	09/05/2023	12%
XS2047497289	08/28/2019	SEK 3 bn.	08/28/2026	12%

Green project portfolio distribution

■ Buildings	58,9 %
■ Energy efficiency	1,8 %
■ Renewable energy	2,5 %
■ Transportation	17,1 %
■ Waste and circular economy	3,3 %
■ Water and wastewater management	14,8 %
■ Land use and area development projects	1,2 %
■ Climate change adaptation	0,4 %

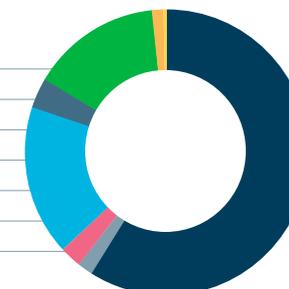


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Kommunalbanken Norway (KBN) finances important welfare services through providing credit to the local authorities in Norway.

KBN's mandate is to provide the local government sector with stable and cost efficient long-term financing. KBN's lending to the local government sector is funded by issuing securities in the international capital markets, maintaining the highest possible credit rating of AAA/Aaa.

Measured by total assets, KBN is one of Norway's largest financial institutions with loans to nearly all of the country's municipalities. KBN is a wholly owned state company. Our vision is to be a long-term partner for local welfare.



More and more ferries are being replaced by electric vessels. In 2019, KBN granted our first green loan to an electric ferry in Porsgrunn municipality. Cover image: Illustration, Fjord1 / Havyard

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Climate risk – the biggest global challenge?

Climate-related risk continued to climb up the international agenda in 2019 and topped the World Economic Forum's list of the biggest global threats for the next decade, ahead of weapons of mass destruction.

BY SIGBJØRN BIRKELAND

Chief Financial Markets Officer, KBN

In January 2020 the Bank for International Settlements (BIS) published a book on climate as a risk to financial stability which discusses climate-related risks as “green swan’ risks: potentially extremely financially disruptive events that could be behind the next systemic financial crisis”. Also in 2020 the CEO of BlackRock, Larry Fink, discusses in his first letter of the year to the company's clients the prospect of “A Fundamental Reshaping of Finance” due to climate change.

Factoring in the EU's ambitious Green Deal and its Sustainable Finance Action Plan as well, the backdrop is in place for an exciting and eventful year in international finance. The EU's taxonomy for sustainable activities and its Green Bond Standard are going to set the tone in the market going forward.

In Norway, the authorities have in a number of documents signalled that they increasingly expect municipalities and county authorities to take their share of the responsibility for limiting climate change and adapting to those changes that we will not manage to prevent. The white paper on ownership policy

published by the Norwegian Government in the autumn of 2019 introduced stricter requirements in respect of sustainable value creation by state-owned companies.

KBN was the first Norwegian financial institution to offer discounted green loans – a step it took in 2010 – and since then it has been a national leader in green finance. As Norway's most active issuer of green bonds, a member of the Executive Committee of the Green Bond Principles, a key contributor to the “Nordic Public Sector Issuers: Position Paper on Green Bonds Impact Reporting” and an issuer with a green bond program that has been ranked as ‘Dark Green’ by CICERO, KBN has made an important contribution to the development of international standards and the Nordic green finance market.

After a cautious start in 2010, the level of interest in green loans has increased sharply. In 2018 the growth in KBN's green lending was responsible for a record-high 36% of its total lending growth and this proportion increased to 50% in 2019. This is a pleasing development that is partially due to KBN's work to make our customers aware of our green loans, but it was primarily the result of the local government sector having become more committed to investing in environmentally friendly projects for the future. This

report documents the projects financed by our green loans and their environmental impact. For the first time we are providing this information in a spreadsheet format so that investors and other stakeholders can carry out their own calculations and visualise the data as they wish.

In 2019 KBN made a particular effort to ensure local climate risk was on the agenda, including by publishing a booklet on climate risk and creating a digital climate risk tool for the local government sector. As well as offering discounted green loans, we want to help municipalities to develop a better basis for making decisions, and we also want to make it cheaper for them to choose solutions that both reduce climate risk and move us towards a low-carbon society.

In his letter mentioned above, BlackRock's CEO Larry Fink asks the following questions: “Will cities, for example, be able to afford their infrastructure needs as climate risk reshapes the market for municipal bonds? What will happen to the 30-year mortgage – a key building block of finance – if lenders can't estimate the impact of climate risk over such a long timeline, and if there is no viable market for flood or fire insurance in impacted areas?” These are questions that KBN, as the largest lender to the local government sector, is taking extremely seriously. With our green lending program, we are helping the sector to adapt to climate change. Adapting to climate change represents good risk management, for our customers and for KBN.



Sigbjørn Birkeland, Chief Capital Markets Officer KBN. Photo: Jo Straube

Through our green lending program, we helped finance:

- The construction of 554,581 m² of new green buildings
- Energy efficiency measures for 257,818 m² of existing building stock
- Water and wastewater capacity increased totalling 444,482 population equivalents*
- The production of 109 GWh local, renewable energy

*Share of impact reported corresponding to the share of the project financed by KBN

Green Bonds

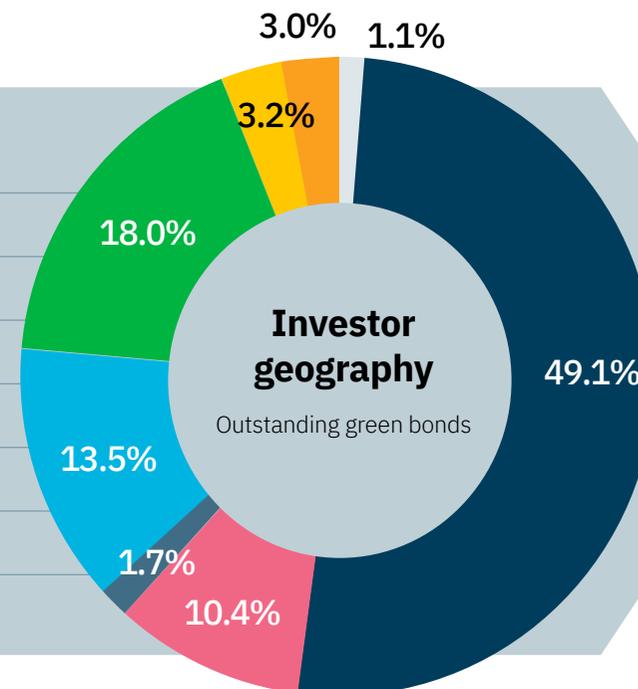
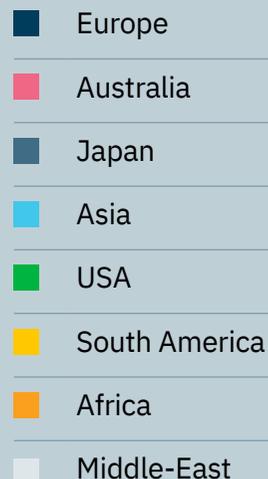
KBN was one of the first European issuers to issue a green bond in USD. The past years we've experienced a strong increase in investor demand for our issues in USD, NOK, AUD and SEK.

16.6
bn. NOK

Green Bonds

4.1 %

Green share of funding



By the end of 2019, we had the equivalent of NOK 16,6 billion outstanding in green bonds, comprising SEK, NOK, USD and AUD. This makes us one of Norway's most active issuers of green bonds.

KBN's green bond framework was updated in June 2016 and was rewarded with CICERO's highest "dark green" rating, signaling that the investments financed are aligned with the 2050 climate targets. The framework is subject to an update in 2020.



CICERO
Dark Green

Outstanding green bonds

Amount issued	Maturity	Coupon	ISIN
USD 600 million*	02/11/2025	2.125%	XS1188118100 US50048MBX74
USD 500 million	10/26/2020	1.375%	XS1508672828 US50048MCD02
NOK 750 million	11/29/2027	2.200%	NO0010811276
NOK 600 million	11/29/2032	2.000%	NO0010811284
AUD 450 million	09/05/2023	2.700%	AU3CB0256162
SEK 3 billion	08/28/2026	0.125%	XS2047497289

* USD 100 mn. tap of USD 500 mn.

KBN's first green bond issuance, a 3y USD 500 million bond issued in 2013, matured in 2016.

Green Loans

KBN has offered reduced-rate green loans for investments that contribute to solving the climate challenges of the future since 2010. KBN's green loans are financed by green bonds.

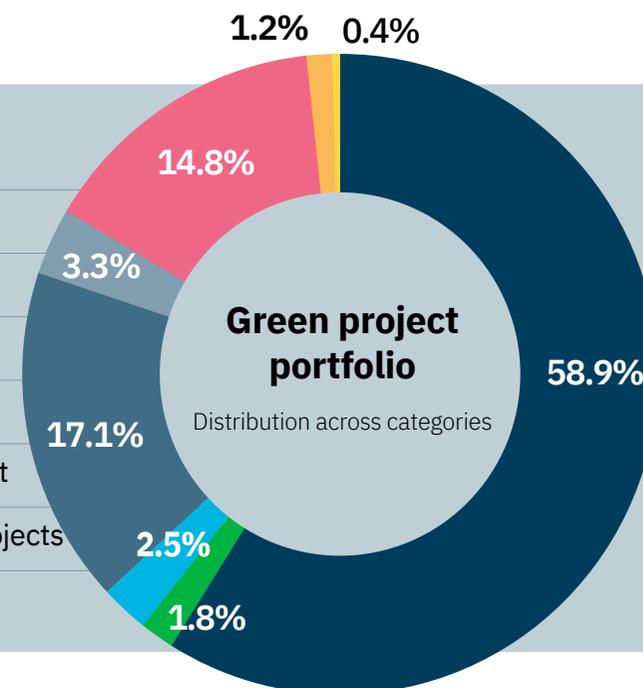
23.0
bn. NOK

Green loans

7.4 %

Green share of lending

- Buildings
- Energy efficiency
- Renewable energy
- Transportation
- Waste and circular economy
- Water and wastewater management
- Land use and area development projects
- Climate change adaptation



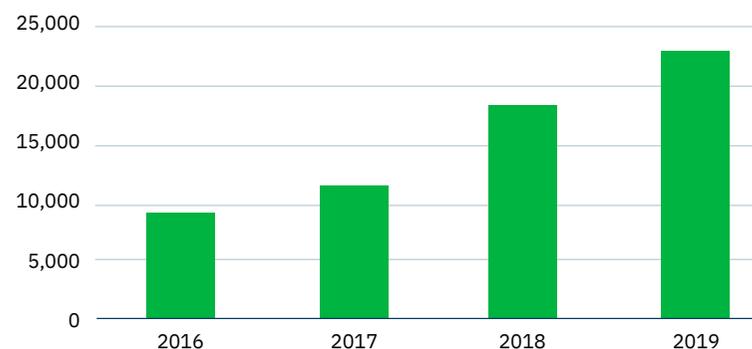
The demand for green loans has risen substantially the last few years, mirroring the increased interest for green bonds. In 2019 the green lending portfolio increased by 3.7 billion NOK.

Green loan growth accounted for 49 percent of the bank's total growth in lending. In 2019, 6.2 billion NOK were disbursed to green projects.

The criteria document was updated in January 2020 and is available on KBN's website.

Eligible projects are defined in the Criteria document for the green lending program and the Green Bond Framework.

Outstanding green loans
In 1,000 NOK



Starting from 2019 a new and improved tracking system for green loans has been implemented. As a consequence, the year-end sum for 2019 includes loans with an outstanding value of 646 million NOK which have not previously been reported. These loans have been disbursed from 2015 to 2018. The loans have been added to the outstanding loan portfolio and thus this year's impact report, but not to the growth in green lending for 2019.



KBN'S STRATEGY

Building a sustainable society

KBN provides attractive investment financing to local municipalities and county authorities across Norway, and we seek to promote sustainable local communities and to contribute to the green shift. Sustainability permeates the way in which we carry out our activities.

KBN seeks to help its customers to succeed in meeting their environmental objectives. By providing green loans with a lower interest rate, we seek to be a driver for more investment in ambitious green projects. Projects that qualify for a green loan from KBN can also help to reduce climate risk for municipalities.

Climate risk should be an important part

of the evaluation criteria used by municipalities and county authorities when deciding on their investment plans. Projects completed today will be part of a society that has to face a less hospitable climate (physical risk) and probably far stricter requirements in terms of greenhouse gas emissions and resource usage (transition risk). These considerations

need to be taken into account, both to ensure that municipalities are well prepared for the changing climate and as part of the comprehensive management of risk that municipalities need to ensure they manage their finances well over the long term. KBN seeks to be a driver for municipalities to include climate risk in their decision-making processes and investment plans. As part of this, KBN has produced a booklet on climate risk for the local government sector in collaboration with the Norwegian Climate Foundation, and has also developed a digital climate risk tool in collaboration with CICERO.

As the largest lender by far to the local government sector, we feel we have a parti-

cular responsibility to support long-term, responsible and sustainable debt management. By sharing knowledge, engaging in dialogue with customers and providing digital tools such as KBN Finans, we want to help increase awareness of financial issues and to help the sector to have the best possible basis for its decisions.

Norway's municipalities and county authorities can contribute to sustainable development as they purchase significant amounts of goods and services. This also applies to KBN. We have naturally produced new internal procurement guidelines with stricter requirements and expectations in respect of our suppliers' ethical conduct and sustainability practices.

Comments on Impact Report 2019

"With this report, KBN provides a transparent and detailed description of the impact of its green loans."

Nikolai Astrup, Minister of Local Government and Modernisation

KBN has been one of the leading Norwegian organisations in green finance for a long time. KBN's discounted green loans for ambitious, green investments across Norway are an important tool for achieving Norway's national emissions reduction targets. With this report, KBN provides a transparent and detailed description of the impact of its green loans, which makes it easy for stakeholders to

obtain the information they need. It is positive that KBN has taken the lead in relation to climate risk in the local government sector and has been quick to adapt to growing expectations in terms of its management of its own climate risk.

Nikolai Astrup,
Minister of Local Government and Modernisation,
Ministry of Local Government and Modernisation

"KBN's 2019 Impact Report lives up to best practice for issuers of green bonds"

Kristofer Dreiman, Länsförsäkringar AB

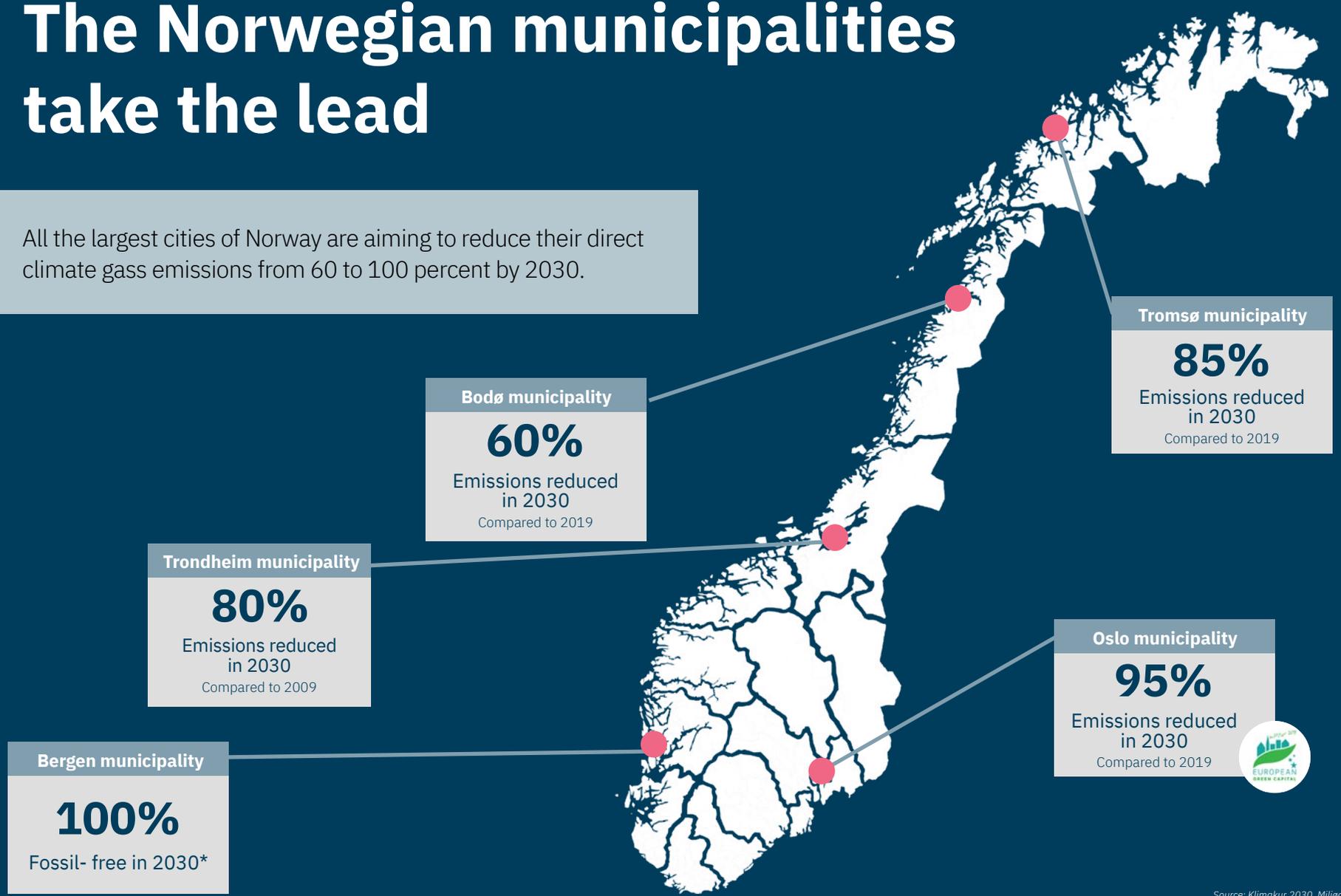
In our opinion, KBN's 2019 Impact Report lives up to best practice for issuers of green bonds. The report is also at the forefront in terms of new EU regulations thanks to the inclusion of references to the EU's proposed taxonomy of sustainable investments. The report provides a particularly good overview of how the proceeds of the bonds KBN issues are used, including a detailed account of the funds it has disbursed at the category level and even down to the project level, as well as information on the associated environmental impact generated. KBN's credibility is also strengthened by the fact that it is transparent about the methodologies used to calculate the

CO2 emission reductions/savings, as well as in its self-evaluation of its compliance with NPSI reporting requirements. We are of the view that KBN's inclusion of details on its portfolio's relationship with the EU's taxonomy is very ambitious and useful for us as investors, even though the final first version of the taxonomy is not yet in place. Where the ability to evaluate projects in accordance with the taxonomy is limited by current application of the taxonomy, KBN has carefully documented this.

Kristofer Dreiman,
Head of Responsible Investments,
Länsförsäkringar AB

The Norwegian municipalities take the lead

All the largest cities of Norway are aiming to reduce their direct climate gas emissions from 60 to 100 percent by 2030.



*No use of oil, gas or coal in Bergen as a geographical area

Source: Klimakur 2030, Miljødirektoratet



KBN's climate risk efforts

Both climate change and climate policies will affect municipal finances the coming decades. This can in turn affect KBN. KBN is working with municipalities to raise awareness of climate risk, and has therefore started work on modelling different types of climate risk at municipality level.

Climate risk in credit assessments

We are working on developing a credit model for modelling climate risk. The general credit model operates through a traffic light system, where green indicates low risk, yellow medium risk and red high risk. The credit assessment is performed on each customer, not project, as all risk is associated with the customer (the municipality), not the specific project.

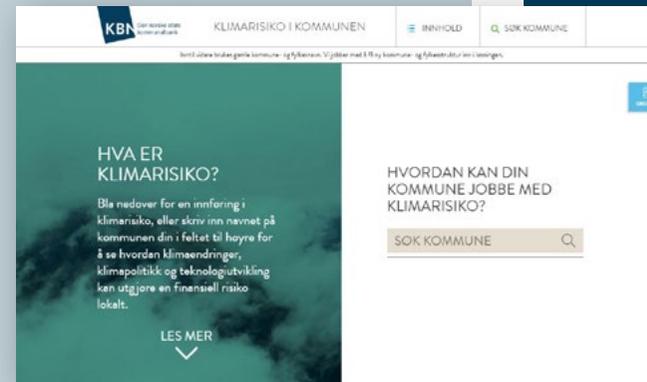
Read more about KBN's climate risk action in the 2019 Annual Report.



Sharing climate risk knowledge

KBN launched the first edition of the digital tool "Municipal climate risk" in May 2019. This platform combines general information on climate risk with climate risk indicators and data on a municipal level. The platform is motivated by the wish to make local decision makers better equipped to take climate risk into account in their daily businesses.

In the course of 2019, all of Norway's 422 municipalities were looked up, with one municipality receiving 8,492 unique hits. New data sources and functions will be added in 2020. Additionally, KBN published a leaflet on municipal climate risk and arranged events on the subject.



KBN's climate risk portal, where every municipality is searchable. Only available in Norwegian.

What is climate risk?

The term "climate risk" describes the uncertainty surrounding the consequences of climate change, climate policies and climate related changes in technology and demand.

Physical climate risk: The consequences of an altered climate, both acute occurrences and changes over time. This includes, for example, damage caused by floods, landslides, rising sea levels, drought and the decay of organic matter caused by increased humidity e.g. in buildings. An organisation can be exposed to physical climate risk both directly and indirectly through its suppliers and distribution chains.

Transition risk: The consequences of climate and energy policies, technological developments, changes in demand and other developments in connection with the transition to a low-carbon economy. A concrete example is the pricing of greenhouse gas emissions (quotas and CO₂ taxes). The process of low-carbon transition may impact the number of jobs and their location, the profitability of investments, etc.

Liability risk: The risk of being held responsible for loss or damages others suffer as a consequence of climate change.

Second opinion

KBN's Green Bond Framework has been reviewed by CICERO, which has rated it "Dark Green". This signifies that the projects KBN finances are in line with the climate targets for 2050. The framework will be updated in 2020.



Refinancing

- The proposed EU Green Bond Standard encourages issuers to report the proportions of proceeds used for financing/refinancing. According to the suggested definition, 100% of KBN's green bonds are refinancing as we lend out funds before issuing green bonds.
- As a rule, KBN does not grant green loans to projects that were completed more than 12 months prior to the date on which an application is made.
- Most of KBN's loans are amortizing loans reflecting the economic lifetime of the project. 83,5% of green loans per 2019 had these characteristics.
- Green loans with a maturity shorter than ten years can be refinanced. If there is new information on the project, the application must be re-assessed. Per 2019 this only applies to a small share of KBN's green loans.

Governance

KBN's green loan and bond programs are governed by the obligations we have set out in our Green Bond Framework (2016), which is aligned with the four pillars of the Green Bond Principles as described on this and the following page.

- 1.** The customer submits an application for a green loan to KBN. There are separate application forms for each of the project categories, and the climate or environmental impact for which the customer must provide evidence are specified for each category.
- 2.** The application is received by KBN's customer team. The customer's account manager makes an initial assessment of whether the project is in line with KBN's green lending criteria and prepares a written recommendation which is forwarded to an internal climate adviser for evaluation.
- 3.** The climate adviser makes a technical evaluation of the project as part of which the uncertainty, impact and documentation associated with the project are described. If the climate adviser concludes that the project qualifies for a green loan, a recommendation to this effect is forwarded to a climate controller for quality assurance purposes.
- 4.** The climate controller checks that the account manager and climate adviser's assessments are verifiable and that the project qualifies for a green loan. If the climate controller considers the recommendation to be sufficient, the application is approved and the customer is offered a discounted green loan.

Management of funds

KBN's green bonds and green loans are tagged and tracked separately in KBN's systems. The total amounts of KBN's green funding and lending are reported in KBN's ordinary quarterly reports.

As a rule, KBN's outstanding green lending will always exceed its outstanding green borrowing, as this means that 100% of the funds it has borrowed by issuing green bonds are always allocated to green projects. Large extraordinary repayments on green loans and other matters outside of KBN's control can temporarily tip this balance. In such cases, this will be adjusted within a reasonable amount of time.

Use of funds

The funds raised by KBN's green bond issues can only be used to finance projects that satisfy KBN's green lending criteria, which are contained in its criteria document. This document represents KBN's 'taxonomy' and sets out criteria for eight categories of project that can be granted a green loan. The criteria document is intended to mirror developments in technology, official regulations and best practice in the different categories, and it is assessed each year by KBN's Green Expert Committee, which is made up of external specialists. KBN's green lending criteria are available on its website.

Impact reporting procedures

Photo: Jo Straube

1. A climate adviser registers information in a separate database

New loans are registered in a separate database for environmental impact reporting. The information provided by the customer is registered in the database upon review by a Climate Advisor and a Climate Controller. The environmental impact database is updated and tallied at least each quarter.



2. Quality control

The environmental impact registered in the impact database is verified by a Climate Controller quarterly. Registered data is checked against information from the borrower's submitted application, additional documentation and what is reasonable to expect from the project. The data are not verified by a third party. If there are substantial uncertainties in the estimates, these are highlighted.



3. Annual impact reporting

Information on projects with green loans outstanding are gathered in the annual impact report. The Environmental Impact Report is published together with the Annual Report. The Impact Report shall reflect any potential development in applicable standards and norms. The relevant guidelines for reporting are consulted ([Nordic Public Sector Issuers Position Paper on Green Bond Impact reporting](#), [ICMA Handbook on Green Bond Impact Reporting](#), [Final report on EU Green Bond Standard](#)).



Key reporting principles

KBN is one of the contributors to Nordic Public Sector Issuers (NPSI): “Position Paper on Green Bonds Impact Reporting”, which KBN uses as the basis for its environmental impact reporting.



We use a grid factor of 315 grams CO₂e per kWh of electricity.

The principles set out in the Position Paper are intended to enable organisations to deliver transparent and consistent environmental impact reporting. The table below shows how we comply with the recommendations in the Position Paper. We are working on improving climate risk reporting. From 2019 we report in accordance with the TCFD recommendations, but we do not currently report climate risk on a project or portfolio level.

While we do our best to ensure we report in a consistent and accurate manner, we ask that investors and other stakeholders take a cautious approach when interpreting this report, as there is significant uncertainty associated with calculations of the type that this report contains. The conversion from electricity to CO₂e are particularly sensitive to methodological approach. We use a grid factor of 315 grams CO₂e per kilowatt hour in accordance with the Position Paper and an assumption of an interconnected European power grid. In we will publish a spreadsheet on the KBN website where interested parties can calculate impact with alternative grid factors.

NPSI Reporting principles	KBN compliance
# 1 Report expected impact, aiming for actual impact	✓
# 2 Report based on annual impact	✓
# 3 Provide annual reporting	✓
# 4 Provide quantitative and qualitative reporting	✓
# 5 Focus on environmental impact	✓
# 6 Report project-by-project, where feasible	✓
# 7 Report based on the share financed	✓
# 8 Report impact by \$ only when quantifiable and relevant	✓
# 9 Report bond-by-bond on bond-programme basis	✓
# 10 Provide both allocation and impact reporting	✓
# 11 Distinguish between financing and refinancing	✓
# 12 Provide breakdowns on asset type, geography and sector	✓
# 13 Maximize transparency and useability	✓
# 14 Incorporate climate-related physical risks when possible	⚠
# 15 Report contributions to the Sustainable Development Goals (SDGs)	✓
# 16 Consider reporting contributions to the EU Environmental Objectives	✓

- ✓ We follow the principles
- ⚠ Some deviations from the principles

Key reporting principles:

- Our reports include information at the project level, category level and portfolio level.
- The impact we report relates to the proportion of the project we financed. If, for example, we provided half the financing for a project, we report half of the project's environmental impact.
- All investments we finance with green bonds form part of a combined green portfolio. The table on p. 3 shows what proportion of this portfolio each of KBN's green bond issues has financed.
- We report the expected impact of projects (ex ante), but we may in future report actual impacts (ex post).
- Our reporting is limited to emissions and emissions reductions that fall under Scopes 1 and 2, i.e. direct greenhouse gas emissions and indirect greenhouse gas emissions from the production of energy, as defined in the Greenhouse Gas Protocol.
- Electricity is converted into climate gas emissions using an emissions factor for the continental EU plus Norway. This factor has been selected because of a desire for a common factor to be applied to all Nordic countries, the electricity networks of which are closely connected to the rest of Europe. In 2019 this factor was 315 grams of CO₂e per kilowatt hour.
- With effect from the report for 2018, our reporting indicates to which of the UN's Sustainable Development Goals the various project categories make a contribution. With effect from this report, our reporting also indicates to which of the EU's six environmental objectives the various project categories make a contribution.

Project category	Direct quantifiable results	Greenhouse gas emissions reduced/avoided	Conversion factor	Baseline
Buildings	kWh avoided, kWh produced per year, estimate	Avoided	1 kWh = 0.315 kg CO ₂ e	n/a
Energy efficiency	Reduction in kWh per year, estimate	Reduced	1 kWh = 0.315 kg CO ₂ e	Situation before improvement
Renewable energy	kWh produced per year, estimate	Avoided Reduced	1 kWh = 0.315 kg CO ₂ e	Standard reference building in accordance with applicable technical building works regulations (currently TEK17)
Transportation	Reduction in CO ₂ e, CO ₂ e avoided per year, estimate	Reduced Avoided	Electric cars: 0.2 kWh/km Alternative: new diesel car, 0.126 kg CO ₂ e/km	Alternative, conventional type of vehicle (e.g. new diesel car instead of electric car)
Waste and circular economy	Increase in capacity, tonnes	Avoided	n/a	Situation before improvement
Water and waste water management	Increase in capacity, population equivalents	n/a	n/a	Situation before improvement
Land use and area development projects	Area of the project	n/a	n/a	Situation before improvement
Climate change adaptation	n/a	n/a	n/a	Situation before improvement



Photo: Unsplash / Annie Spratt

EU taxonomy

One pillar of the EU’s action plan on sustainable finance is the creation of a classification system ([taxonomy](#)), including metrics and thresholds, to identify sustainable economic activities.

KBN has mapped our new criteria for green projects against the activities included in the taxonomy.

-  The criteria are in accordance with the activity’s principle and threshold
-  The criteria are in accordance with the activity’s principle, but we currently apply different thresholds

To date, we have not found that any of our criteria are in direct contradiction to the taxonomy. Please note that the foundation for this mapping is the version of the taxonomy available at 1/1/2020. We have not yet performed a “do no significant harm”-analysis on a project level but it is presumed that the projects comply with relevant Norwegian legislation which provides strong labor- and environmental protection.

Green loan category	Subcategory	Percent of portfolio*	Activity/activities in the taxonomy	Opinion	Comment
Renewable energy	Renewable energy production	2%	22.1 Production of Electricity from Solar PV		
			22.8 Production of Electricity from Bioenergy		Missing data and/or unknown threshold
			23.3 Anaerobic Digestion of Sewage sludge		Monitoring of methane leakage required
			23.4 Anaerobic digestion of bio-waste		Monitoring of methane leakage required
			23.8 Landfill gas capture and energetic utilization		Monitoring of methane leakage required
			22.20 Production of Heat/cool from Geothermal		Missing data and/or unknown threshold
			22.11 Manufacture of Biomass, Biogas or Biofuels		Missing data and/or unknown threshold
			22.22 Production of Heat/cool from Bioenergy		Missing data and/or unknown threshold
			22.23 Production of Heat/cool using Waste Heat		
			22.10 Storage of Energy		
		Energy storage		22.10 Storage of Energy	
	Energy infrastructure		22.13 District heating/cooling distribution		
Buildings	Measures for existing building stock	2%	22.8 Production of Electricity from Bioenergy		Missing data and/or unknown threshold
			22.14 Installation and operation of Electric Heat Pumps		Missing data and/or unknown threshold
			22.20 Production of Heat/cool from Geothermal		Missing data and/or unknown threshold
			22.22 Production of Heat/cool from Bioenergy		Missing data and/or unknown threshold
			26.3 Renovation of existing buildings		
			26.4 Individual renovation measures, installation of renewables on-site and professional, scientific and technical activities		
		New buildings	59%	26.2 Construction of new buildings	
Transportation	Land transport	17%	24.3 Public transport		
			24.5 Passenger cars and commercial vehicles		
	Maritime transport		24.6 Freight transport services by road		
			24.8 Inland passenger water transport		
			Infrastructure	24.10 Construction of water projects	
24.4 Infrastructure for low carbon transport					
Waste and circular economy	Waste collection, processing and treatment	3%	23.4 Separate collection and transport of non-hazardous waste in source segregated fractions		
			23.5 Anaerobic digestion of bio-waste		
			23.6 Composting of bio-waste		Monitoring of methane leakage required
			23.7 Material recovery from waste		
			23.8 Landfill gas capture and energetic utilization		Monitoring of methane leakage required
			23.10 Capture of Anthropogenic Emissions		
Water	Climate-friendly processing facilities	15%	23.1 Water collection, treatment and supply		Unclear threshold for energy efficiency
			23.2 Centralized Wastewater treatment systems		

* The column shows the proportion of KBN’s green lending portfolio disbursed within the respective categories by year-end 2020. Note that the category may contain projects outside the scope of, but not contradictory to, the taxonomy per 1/1/2020. In addition, the criteria document contains criteria for the categories Land use and area development projects and Climate change adaptation. Together these constitute less than 2 percent of the portfolio.

Overview of green projects

Our green bonds enable the financing of future-oriented projects throughout the country.

The next pages present an overview of the green projects and their impact per 12/31/2019.

	BUILDINGS	18
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	RENEWABLE ENERGY	29
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	ENERGY EFFICIENCY	33
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	CLIMATE CHANGE ADAPTATION	53

We have strict requirements regarding the sustainability of the projects financed by green lending from KBN. These projects are an important contribution to the work towards the UN's Sustainable Development Goals and the EU's environmental objectives in Norwegian local governments.

Category	SDGs	The EU Environmental Objectives	Total number of projects	New projects in 2019	Production of renewable energy (MWh/annually)*	Energy reduced and avoided (MWh/annually)*	Corresponds to avoided greenhouse gas emissions (tonnes CO ₂ e)*
Buildings	 	Climate change mitigation	89	17	3,288	18,909	6,991
Energy efficiency	 	Climate change mitigation	21	3	n/a	17,899	5,637
Renewable energy		Climate change mitigation	8	n/a	109,448	n/a	34,476
Transportation	 	Climate change mitigation	25	4	n/a	n/a	3,833
Waste and circular economy	 	Transition to a circular economy, waste prevention and recycling	27	7	n/a	n/a	n/a
Water and wastewater management	 	Sustainable use and protection of water and marine resources	42	8	n/a	n/a	n/a
Land use and area development projects	  	Protection of healthy ecosystems	6	4	n/a	n/a	n/a
Climate change adaptation	  	Climate change adaptation	7	2	n/a	n/a	n/a
Total			225	45	387,736	36,808	50,938

*The share of environmental impact reported corresponds to the share of the project financed by KBN.

The EU Environmental Objectives



1. Climate change mitigation
2. Climate change adaptation
3. Sustainable use and protection of water and marine resources
4. Transition to a circular economy, waste prevention and recycling
5. Pollution prevention and control
6. Protection of healthy ecosystems

UN Sustainable Development Goals





PROJECTS Buildings

The new buildings comply with at least one out of two main criteria: The building should have an estimated net energy demand that is 20 percent below requirements in the national building code 1, or it is constructed mainly with the use of low-emission materials such as wood, low-carbon concrete or recycled steel.

Reported impact is calculated based on the relative energy efficiency of the individual buildings, compared to requirements in the national building code. We do not currently quantify the climate impact of sustainable material.

1. - Net energy demand in the building is compared with the energy frames in § 14-2. Requirements for energy efficiency in Building Technology regulations. See <https://dibk.no/byggesreglene/byggesteknisk-forskrift-tek17/14/14-2/>

89

NUMBER OF PROJECTS FINANCED, TOTAL

37

PROJECTS DISBURSED IN 2019

Green loans to buildings

Total outstanding, in 1000 NOK	13,570,913
--------------------------------	------------

Estimated annual impact attributable to green loans*

Energy use avoided	18,909 MWh
Energy produced	3,288 MWh
Greenhouse gas emissions avoided	6,991 tonnes CO ₂ e

*In 2019, 72 percent of KBN's outstanding Green Loans portfolio was financed with green bonds. Hence, green bond investors who wish to calculate their share of impacts should note this share and the table on p. 3. The share of outstanding green loans financed through green bonds may vary from one year to the other.

These projects contribute to...

UN Sustainable Development Goals



Ensure access to affordable, reliable, sustainable and modern energy

Target 7.3) By 2030, double the global rate of improvement in energy efficiency.



Ensure sustainable consumption and production patterns

Target 12.2) By 2030, achieve the sustainable management and efficient use of natural resources.

The EU Environmental Objectives



1. Climate change mitigation

2. Climate change adaptation

Buildings

Borrower	Project name	Last disbursement	Construction period (estimated)	Description	Total disbursed (1000 NOK)	Green loan outstanding (1000 NOK)	Total cost	KBN share of financing	Heated area (in total, m ²)	Estimated impact, KBN share		
										Energy produced (MWh/annually)	Energy avoided (MWh/annually)	Corresponds to avoided GHG (tonnes CO ₂ e annually)
Bærum municipality	Carpe Diem dementia village - low energy	2019	2020	A dementia village with 158 institutional places built to the passive-house standard. The building will be connected to a district heating system and will have its own solar panels. Fossil-fuel-free construction site.	479,200	472,032	735,500	64%	18,000	246	849	345
Agder Renovasjon IKS	New administration building, weighbridge booth and vehicle access - low energy	2019	2019	A new administration building built to the passive-house standard. Environmentally friendly façade in timber with solar panels that will meet a significant proportion of the energy needed for lighting and electric car charging points. 50% lower energy requirement compared with a standard reference building.	32,000	32,000	44,200	72%	1,100	n/a	32	10
Bærum municipality	Oksenøya local centre - a FutureBuilt model project	2019	2019-2022	A local centre that will include an elementary school with five parallel forms in each year, a nursery for 300 children, a multi-use sports hall, an artificial grass playing field and outdoor sports facilities, as well as a residential care centre with 150 places. The centre is a FutureBuilt model project, and the plan is for it to be BREEAM-NOR certified as 'Excellent' and energy-plus certified.	153,100	152,232	1,340,500	11%	36,850	37	176	67
Fyresdal municipality	Mass timber sports hall	2019	2019-2020	Combined sports hall for the school and for the whole community, built from mass timber. Heated by water-to-water heating using water from Fyresdal lake via existing water connection.	12,500	12,500	28,200	44%	1,420	n/a	1	n/a
Grane municipality	New energy efficient health centre	2019	2019-2020	New energy efficient health centre with 24 nursing home places and 8 sheltered housing units which uses boreholes for ground source heating. The centre's energy demand will be 30% lower than required by applicable building regulations.	45,000	45,000	175,000	26%	4,000	n/a	72	23
Hurum Eiendomsselskap KF	Hurum health centre, BREEAM-certified as "Excellent"	2019	2019-2021	The building, which will meet the energy-plus standard, will require 40% less energy than a standard reference building. The measures used include multiple boreholes, solar thermal collectors on the roof and solar panels on the roof and walls.	140,000	140,000	580,000	24%	11,530	n/a	198	63
Ibestad municipality	Ibestad nursing home and sheltered housing units - low energy	2019	2019-2021	Renovation of existing nursing home and construction of 24 new sheltered housing units. Climate-friendly materials used, waterborne heating and planned as a low-energy building.	50,000	45,000	140,000	32%	2,150	n/a	52	16
Inderøy municipality	Mosvik sheltered housing units - mass timber	2019	2019-2020	Renovation of existing nursing home and construction of 24 new sheltered housing units. Climate-friendly materials used, waterborne heating and planned as a low-energy building.	30,000	30,000	32,690	92%	2,426	n/a	33	11

Buildings

Borrower	Project name	Last disbursement	Construction period (estimated)	Description	Total disbursed (1000 NOK)	Green loan outstanding (1000 NOK)	Total cost	KBN share of financing	Heated area (in total, m ²)	Estimated impact, KBN share		
										Energy produced (MWh/annually)	Energy avoided (MWh/annually)	Corresponds to avoided GHG (tonnes CO ₂ e annually)
Marker municipality	New mass timber nursery	2019	2019-2020	New nursery a short distance from the town centre. Built from mass timber and meets low-energy standards.	53,700	53,700	53,700	100%	1,200	n/a	53	17
Nesna municipality	Nesna harbour - energy-efficient building	2019	2019	Multi-function health centre that includes 16 new nursing home places. Compact building envelope with an estimated energy demand 22.8% below that of a standard reference building.	84,980	39,980	94,860	42%	1 377	n/a	26	8
Nesodden municipality	Skoglefall sheltered housing units - low energy	2019	2019-2020	Sheltered housing with 15 units and a dementia facility staffed 24/7 with 28 places. Heating and cooling through geothermal wells.ss	95 000	94 351	140 000	67%	4,718	382	143	165
Røyken Eiendom AS	Torvbråten school sand multi-use sports hall - mass timber	2019	2019-2020	New school building with space for 476 pupils that is being built with the goal of being awarded the Nordic Swan logo. The school will be built using mass timber and in accordance with the passive-house standard.	193,424	193,424	250,000	77%	5,550	147	140	90
Skiptvet municipality	Construction of Vestgård school using mass timber (administration wing)	2019	2019-2020	The building has mass timber wall structures.	17,000	17,000	26,187	65%	450	n/a	4	1
Stjørdal municipality	Stjørdal health centre - low energy	2019	2019-2021	A new health centre that will contribute to the co-location of specialist health and welfare services. Significant reduction in energy consumption and the centre will meet the passive-house standard. Energy for heating provided by a woodchip fired district heating plant, with a solar panel installation meeting other energy needs.	214,530	211,848	289,000	73%	10,257	n/a	416	131
Vestnes municipality	Stella Maris - a low-energy health centre	2019	2019	A new and future-oriented healthcare and welfare services centre. The greenhouse gas emissions associated with the project's materials will be 26% lower than a standard reference building.	354,766	249,000	436,000	57%	9,314	n/a	34	11
Ålgårdhallen AS	New sports hall and remodelling of existing sports hall	2019	2019-2020	Energy efficient sports building with solar panels on the roof.	42,000	42,000	42,000	100%	4 109	n/a	25	8
Bærum municipality	Jarenga nursery - low energy	2019	2018-2020	A new energy efficient nursery for 160 children. Built using sustainable materials with solar panels on the roof.	10,000	9,600	94,000	10%	3,485	4	21	8
Bærum municipality	Nansenparken nursery - low energy	2019	2018	A new 200-place nursery built to the passive-house standard. The building will be connected to a new vacuum facility for waste and will use district heating and cooling as well as its own solar panels.	144,800	139,316	145,000	96%	3,770	22	334	112

Buildings

Borrower	Project name	Last disbursement	Construction period (estimated)	Description	Total disbursed (1000 NOK)	Green loan outstanding (1000 NOK)	Total cost	KBN share of financing	Heated area (in total, m ²)	Estimated impact, KBN share		
										Energy produced (MWh/annually)	Energy avoided (MWh/annually)	Corresponds to avoided GHG (tonnes CO ₂ e annually)
Bærum municipality	Levre elementary school - sustainable materials	2019	2018-2020	New elementary school for 800 pupils built in low-carbon concrete, recycled steel and sustainable timber. Solar cells on the facade.	293,200	288,472	419,300	69%	10,050	21	228	78
Elverum municipality	Ydalir school and nursery - mass timber	2019	2018-2019	The school will have space for 350 pupils. Mass timber structure, built to the passive-house standard. BREEAM-NOR certification planned.	286,463	280,553	384,286	73%	6,800	n/a	192	60
Gildeskål municipality	Inndyr sheltered housing units - mass timber	2019	2018-2020	New sheltered housing development with seven units. Landmark building constructed from mass timber. The mass timber elements are locally produced and come from Hoisko in Finland.	21,058	20,847	32,200	65%	705	n/a	1	n/a
Kvæfjord municipality	Kveldrov health centre - low energy	2019	2018-2020	New health centre with co-located municipal services. Energy-efficient building with waterborne heating in almost every room provided by an air-to-water heat pump. 31% reduction in energy demand compared with a standard reference building.	87,000	85,825	126,800	68%	2,098	n/a	87	27
Nord-Odal municipality	Combined bank, library and apartment complex - mass timber	2019	2018-2020	Library, bank premises, meeting places and ten apartments. Iconic building in mass timber with underfloor heating and hot water via a heat pump with energy wells as the source of heat.	117,250	115,680	147,000	79%	2,715	n/a	67	21
Opplevelsessenteret Østfoldbadet AS	Østfoldbadet swimming pool - low energy	2019	2018-2019	Upgrades to existing swimming pool and a new extension building. The buildings' combined energy demand will be 35% lower than required by the applicable building regulations.	163,700	161,619	163,700	99%	8,300	n/a	1,819	573
Region Nordhordaland Helsehus IKS	Low energy health centre	2019	2018-2020	A health centre in Knarvik built to the passive-house standard. Thermal energy supply.	450,000	210,000	710,000	30%	12,700	n/a	345	109
Røyken Eiendom AS	Sydskogen school in mass timber	2019	2018-2020	Norway's first school to be awarded the Nordic Swan logo. Dimensioned for around 500 pupils. The school is being built to the passive-house standard and from mass timber, and the construction site is fossil-fuel-free.	168,000	168,000	168,000	100%	5,372	n/a	n/a	n/a
Sirkula IKS	New administration building in Gålåsholmen and an area for reuse	2019	2018-2020	Mass timber passive-house standard administration building. There is a plan to produce electricity and heat from methane gas from a nearby landfill site.	50,000	49,545	50,600	98%	3,194	78	49	40
Solund municipality	New energy efficient sheltered housing units	2019	2018-2019	Nine low-energy sheltered housing units built to passive-house requirements. Long-lasting, environmentally friendly materials have been used. All energy consumption is managed using a central operational control system.	17,185	17,185	35,000	49%	600	n/a	4	1

The table continues on page 24



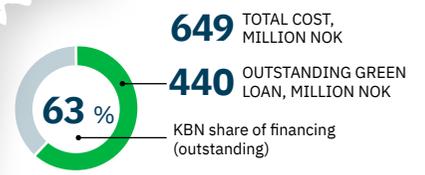
CASE

Fossil-fuel-free construction site for smart energy solutions

The new Jordal Amfi arena will be an ice hockey venue for both recreational and professional players in Oslo, with around 5,300 seats for spectators. The arena will be used for training most hours of the day all year, as well as for matches and cups. The City of Oslo has chosen innovative energy solutions in order to deliver a flexible system and an indoor climate that is good for both players and spectators.

The building was designed with the approach that the energy and climate solutions were fundamental to its architecture, not vice versa. Great importance has been attached to heat recovery, and the arena itself is 97.5% self-sufficient in thermal energy. CO₂-based refrigeration units, solar panels, a sedum green roof and geothermal wells will help the arena to achieve strict emissions figures. With the new solutions, the arena will use about a third as much energy as its predecessor. In addition, the building site for the new arena will be fossil-fuel-free, meaning that all the construction machinery on the building site will have to be electric or bio-diesel powered – the same applies to the heating and drying machines used on the site.

Jordal Amfi,
Oslo municipality



Estimated year of completion: 2020

Estimated impact, share financed with green loan	
Energy avoided (MWh/annually)	318
Corresponds to avoided GHG (tonnes of CO ₂ e/annually)	100

Illustration: Hille Melby Arkitektter

Buildings

Borrower	Project name	Last disbursement	Construction period (estimated)	Description	Total disbursed (1000 NOK)	Green loan outstanding (1000 NOK)	Total cost	KBN share of financing	Heated area (in total, m ²)	Estimated impact, KBN share		
										Energy produced (MWh/annually)	Energy avoided (MWh/annually)	Corresponds to avoided GHG (tonnes CO ₂ e annually)
Ulvik municipality	Ulvik nursing home - low energy	2019	2018-2019	New, energy-efficient nursing home built to the passive-house standard, with fjord-based heating/cooling.	73,830	72,997	109,000	67%	2,640	n/a	105	33
Alta municipality	Alta care centre - mass timber	2019	2017-2020	The centre includes 60 sheltered housing units and 108 nursing home places spread across five buildings. The buildings are built from mass timber and ground-source heating will meet 50% of its energy requirements.	536,000	521,050	898,000	58%	18,559	836	442	402
Aust-Agder county authority	New low-energy upper secondary school in Tvedestrand	2019	2017-2020	The school is dimensioned for around 700 pupils. Mass timber construction that meets the energy-plus standard.	181,000	179,750	600,000	30%	14,875	250	232	152
Bærum municipality	Lindelia residential care centre - low energy	2019	2017-2020	A residential care centre with 132 institutional places, a day centre and a café. Connected to district heating/cooling and built to the passive-house standard.	364,800	359,008	475,000	76%	13,898	n/a	410	129
Bærum municipality	Bekkestua elementary school - low energy	2019	2017-2019	A new elementary school with four parallel forms in each year that will be BREEAM-NOR certified as "Very Good". The building will be built with minimal fossil fuel usage, a measure that the municipality anticipates will save 83 tonnes of CO ₂ .	304,500	295,720	350,000	84%	9 650	n/a	213	67
Kvænanen municipality	Kvænanen elementary and lower secondary school with sports hall in mass timber	2019	2017-2019	A new school with a multi-use sports hall, dimensioned for 195 pupils. Built from mass timber.	83,155	80,362	122,600	66%	4,800	n/a	137	43
Oppegård municipality	Mass timber sheltered housing units on Edvard Griegs vei	2019	2017-2019	Construction of 72 sheltered housing units, a day care centre and a café, as well as a base for home care services. Structure will be in mass timber and low-carbon concrete and will comply with the passive-house standard. Heating provided by district heating.	280,320	275,062	390,500	70%	8,682	n/a	294	92
Oslo municipality	The new Jordal Amfi arena - ice rink with innovative energy solutions	2019	2017-2020	The ice rink will be built to ensure the best possible heat recovery, with good temperature control systems and a high degree of efficient energy consumption. The ice rink is expected to be 97.5% self-sufficient in thermal energy and the overall construction will use 36% less energy than a standard reference project. Read more on page 23.	440,000	440,000	694,000	63%	13,950	n/a	318	100
Sør-Odal municipality	Glommasvingen School - mass timber	2019	2017-2019	New school building with space for 900 pupils, as well as a new multi-use sports hall. Mass timber structure, built to the passive-house standard. BREEAM-certified as "Very Good".	224,600	222,094	367,000	61%	10,750	n/a	442	139

Buildings

Borrower	Project name	Last disbursement	Construction period (estimated)	Description	Total disbursed (1000 NOK)	Green loan outstanding (1000 NOK)	Total cost	KBN share of financing	Heated area (in total, m ²)	Estimated impact, KBN share		
										Energy produced (MWh/annually)	Energy avoided (MWh/annually)	Corresponds to avoided GHG (tonnes CO ₂ e annually)
Steinkjerbygg KF	Mære nursery - mass timber	2018	2020-2021	New nursery. Mass timber structure and compliance with passive-house standard planned.	40,000	40,000	40,000	100%	1,300	n/a	59	18
Steinkjerbygg KF	Mære elementary school - mass timber	2018	2020-2021	New elementary school dimensioned for 250 pupils. Mass timber structure and compliance with the passive-house standard planned.	100,000	100,000	100,000	100%	3,000	n/a	120	38
Horten municipality	Low-energy sports hall in Lystlunden	2018	2019	New sports hall constructed to the passive-house standard. Heating system based on a seawater heat pump and solar collectors.	42,937	41,551	135,000	31%	4,400	n/a	27	9
Oslo municipality	Renovation of Slemdal school	2018	2018-2020	The school will be expanded from having three forms in each year to four forms, with space for 728 pupils. Environmentally friendly solutions such as solar panels and geothermal wells will be emphasised, and the building will comply with the passive-house standard.	500,000	500,000	526,000	95%	10,130	74	361	137
Skaun municipality	Skaun elementary school and cultural venue	2018	2018-2019	School dimensioned for 540 pupils, as well as a public library, a cultural venue and a sports hall. Structure to generate at least 30% less greenhouse gas emissions and to consume 40% less energy than a standard reference building.	100,000	96,667	356,000	27%	9,200	n/a	87	27
Steinkjerbygg KF	Lø nursery - mass timber	2018	2018-2019	New nursery. Mass timber structure and compliance with passive-house standard planned.	40,000	40,000	40,000	100%	1,300	n/a	25	8
Steinkjerbygg KF	New Steinkjer elementary school with sports facilities	2018	2018-2019	New school building built to the passive-house standard dimensioned for 400 pupils. The super structure largely made of mass timber and glulam. Greenhouse gas emissions from material usage 25% lower compared with a standard reference building.	250,000	250,000	250,000	100%	6,000	n/a	210	66
Søndre Land municipality	Hovli care home in mass timber	2018	2018-2020	A new care home in mass timber with 104 residential rooms, as well as premises for home care services and a day care centre. 90% of heat demand met by bio energy, with the remainder met by heat recovered from air conditioning.	100,000	100,000	457,000	22%	10,500	n/a	n/a	n/a
Flå municipality	Flå nursery in mass timber	2018	2017-2018	Flå nursery has been extended through the construction of four new sections. Constructed in mass timber and heated using a heat pump.	26,000	24,536	27,000	91%	854	n/a	4	1
Halden municipality	Kongveien school - low energy and mass timber	2018	2017-2018	A new elementary school built in mass timber with space for 600 pupils and 80 employees. Primary source of heating is geothermal wells distributed via waterborne underfloor heating.	150,000	150,000	190,000	79%	6,700	n/a	111	35
Jevnaker municipality	Bergerbakken school with sports hall in mass timber	2018	2017-2018	New school with space for 420 pupils with a sports hall built in mass timber.	89,473	86,490	128,000	68%	2,095	n/a	21	7

Buildings

Borrower	Project name	Last disbursement	Construction period (estimated)	Description	Total disbursed (1000 NOK)	Green loan outstanding (1000 NOK)	Total cost	KBN share of financing	Heated area (in total, m ²)	Estimated impact, KBN share		
										Energy produced (MWh/annually)	Energy avoided (MWh/annually)	Corresponds to avoided GHG (tonnes CO ₂ e annually)
Kongsvinger municipality	Kongsvinger lower secondary school in mass timber	2018	2017-2018	A new lower secondary school in mass timber dimensioned for 720 pupils. The school replaces four previous lower secondary schools and is BREEAM-NOR certified as "Very Good".	319,500	303,547	319,500	95%	10,300	n/a	215	68
Lyngen municipality	Leangen school in mass timber	2018	2017-2018	A new school building in mass timber dimensioned for 60 pupils.	74,471	70,832	84,003	84%	1,750	n/a	1	n/a
Moss municipality	New Hopprenn school with sports hall	2018	2017-2019	New school building for 450 pupils with a sports hall. Mass timber structure built to passive-house standard. BREEAM-NOR certified as "Very Good".	245,856	238,077	368,500	65%	6,374	75	105	57
Næroy municipality	New Kolvereid school in mass timber	2018	2017-2018	School building for 315 pupils as well as a public library. Mass timber structure, built to passive-house standard.	49,790	48,367	128,800	38%	3,174	n/a	38	12
Oslo municipality	Renovating and extending Hasle school	2018	2017-2019	Renovating a protected centrally located building and constructing a new building to the passive-house standard. The school's capacity will be expanded from 480 pupils to 870.	500,000	500,000	520,100	96%	7,800	n/a	489	154
Sel municipality	Otta brygge: Homes for people with disabilities	2018	2017-2019	Mass timber building with 16 sheltered housing units. District heating used.	21,300	20,590	62,000	33%	1,750	n/a	61	19
Tvedestrand municipality	New Tvedestrand upper secondary school with sports facilities	2018	2017-2020	The school has been dimensioned for approximately 700 pupils. Mass timber structure, built to the plus-house standard.	89,784	85,295	230,000	37%	5,650	116	244	114
Vestfold county authority	New Horten upper secondary school - mass timber	2018	2017-2019	A new upper secondary school for 1,200 pupils. Structure, walls and roof made out of timber. The building will be BREEAM-NOR certified as "Outstanding" and will satisfy FutureBuilt's definition of an energy-plus building through the use of solar panels on the roof, among other measures. Read more on page 27.	555,000	555,000	755,000	74%	16,863	657	731	437
Enebakk municipality	Ytre Enebakk school in mass timber	2018	2016-2018	School for 800 pupils and a multi-use sports hall. Mass timber structure, built to the passive-house standard.	284,000	284,000	350,000	81%	n/a	n/a	187	59
Halden municipality	Bergheim dementia centre in mass timber	2018	2016-2019	New residential dementia centre with 96 apartments and day care provision for a further 24 people. Built in mass timber, with the primary source of heating being geothermal wells distributed via waterborne underfloor heating. Structure to require 20% less energy than a TEK16 reference building.	100,000	100,000	341,000	29%	10,200	n/a	122	38

The table continues on page 28



CASE

Norway's most environmentally friendly school?

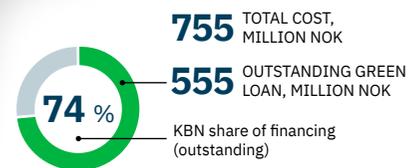
The new Horten Upper Secondary School was ready to welcome 1,200 pupils and 200 staff in autumn 2019, a national pioneer project in the areas of the climate, energy and the environment. In order to reduce its greenhouse gas emissions, a range of measures were implemented.

The school has largely been built out of sustainable materials such as mass timber, low-carbon concrete and recycled steel. During the construction process, Vestfold had an ambition for the construction site to be fossil-fuel free.

The building has solar panels on its roof that produce 500,000 kWh per year and this, together with deep geothermal wells with thermal storage, helps to ensure that the school's pupils will start at Norway's first energy-plus school.

KBN commends Vestfold on its construction of the new Horten Upper Secondary School – it is a good example of innovation and environmental ambition.

Horten Upper Secondary School,
Horten municipality



Year of completion: 2019

Estimated impact, share financed with green loan	
Energy use avoided (MWh/annually)	731
Energy produced (MWh/annually)	657
Corresponds to avoided GHG (tonnes of CO ₂ e/annually)	437

Photo: Hundven-Clements photography

Buildings

Borrower	Project name	Last disbursement	Construction period (estimated)	Description	Total disbursed (1000 NOK)	Green loan outstanding (1000 NOK)	Total cost	KBN share of financing	Heated area (in total, m ²)	Estimated impact, KBN share		
										Energy produced (MWh/annually)	Energy avoided (MWh/annually)	Corresponds to avoided GHG (tonnes CO ₂ e annually)
Oslo municipality	Nye Holmen skole med idrettshall	2018	2016-2020	A new elementary school dimensioned for 654 pupils. Flexible structure that will permit expansion in future. The building will comply with the passive-house standard and will have an 'A' rating for energy efficiency.	500,000	500,000	522,800	96%	10,700	n/a	377	119
Trondheim municipality	Lade school with sports hall - low energy and mass timber	2018	2016-2018	New school dimensioned for 740 pupils built in mass timber to the passive-house standard. The school is connected to the district heating network and uses waterborne heating.	360,000	360,000	360,000	100%	10,591	n/a	600	189
Eid Industrihus KF	Sagastad knowledge centre	2018	2018	A knowledge centre with an environmentally friendly vision that uses solar panels and fjord-based heating/cooling. Timber used extensively in construction process.	25,900	25,244	28,000	90%	1,134	n/a	16	5
Eid municipality	Mass timber sheltered housing units	2018	2018-2019	Eleven sheltered housing units built in mass timber with staff facilities and garages. Heated using heat pumps connected to a fjord-based district heating network.	30,000	28,909	34,700	83%	1,200	n/a	76	24
Flatås sports club	Flatås sports hall with environmental profile	2018	2018	Combined multi-use sports hall and football hall with district heating, outdoor LED lighting system and granule-free artificial grass surface.	67,000	49,292	94,000	52%	5,851	n/a	37	12
Flesberg municipality	Flesberg School with sports hall and swimming pool - mass timber	2018	2018-2019	New school building for 420 pupils with a sports hall and a swimming pool. Built from mass timber.	246,830	244,110	261,362	93%	8,572	112	296	129
IKA Kongsberg IKS	Shared inter-municipal archive in a low-energy building	2018	2012-2018	New construction of a shared inter-municipal archive consisting of office areas, archive services and a depot with 45,000m of shelving. The building has a low energy demand and is equipped with eight boreholes for geothermal heating.	133,150	133,150	138,177	96%	5,500	n/a	265	83
Molde and Romsdal Havn IKS/ Molde Havnevesen KF	New low-energy harbour building in Molde	2017	2016-2017	New office building built with low energy consumption and low-emission materials. Heating need met by heat pumps with air and water as energy sources.	25,000	13,875	30,000	46%	838	n/a	14	4
Malvik municipality	Hommelvik lower secondary school	2017	2016-2017	New lower secondary school for 400 pupils. Energy-efficient building with outer cladding in ore-pine. 90% of heat demand met by geothermal heating.	211,902	195,806	212,000	92%	5,574	103	256	113
Møre and Romsdal county authority	Romsdal upper secondary school - mass timber	2017	2016-2017	New upper secondary school for 800 pupils. Mass timber used throughout the building, including in load-bearing structures. Energy-efficient, "low-tech" ventilation system. Heated and cooled using 32 geothermal wells.	210,300	198,253	520,000	38%	12,300	n/a	188	59

Buildings

Borrower	Project name	Last disbursement	Construction period (estimated)	Description	Total disbursed (1000 NOK)	Green loan outstanding (1000 NOK)	Total cost	KBN share of financing	Heated area (in total, m ²)	Estimated impact, KBN share		
										Energy produced (MWh/annually)	Energy avoided (MWh/annually)	Corresponds to avoided GHG (tonnes CO ₂ e annually)
Orkdal municipality	Romsdal upper secondary school - mass timber	2017	2016-2017	Apartment complex with sheltered housing units and municipal homes constructed in mass timber and clad in locally produced cladding. The municipality emphasised local materials and rail transportation. The building is heated using excess heat from a nearby smelting plant.	58,000	54,686	58,300	94%	1,132	n/a	109	34
Horten municipality	Granly school - low energy	2017	2015-2018	New elementary school constructed to the passive-house standard with space for 580 pupils. Heating based on geothermal heat pumps. The school has lots of outdoor areas and its own school garden.	55,168	52,174	297,625	18%	8,736	n/a	23	7
Åfjord municipality	Passive house project for upper secondary school pupils	2017	2015-2017	Two municipal homes built to the passive-house standard by students enrolled in the building construction program at Åfjord Upper Secondary School, giving the pupils training in this construction technique.	2,500	2,333	3,500	67%	132	n/a	4	1
Molde municipality	New low-energy harbour building in Molde	2016	2016-2017	New office building built with low energy consumption and low-emission materials. Heating need met by heat pumps with air and water as energy sources.	6,500	6,094	30,000	20%	838	n/a	6	2
Asker municipality	Kistefosdammen nursery - energy-plus building	2016	2016-2017	Nursery with space for 100 children, built to a significant extent in timber. The building is the first plus-energy building built by the public sector in Norway (FutureBuilt's definition). Supplied with 100% local renewable energy from energy wells and integrated solar panels.	77,600	71,780	77,600	93%	1,220	42	113	49
Asker municipality	Holmen swimming pool - energy efficient	2016	2015-2017	One of Norway's most energy-efficient swimming pools. 80% of the facility's energy consumption is met by local renewable energy from geothermal heat pumps, solar panels and solar thermal panels.	277,000	256,225	277,000	93%	4,121	68	983	331
Frogn municipality	Ullerud health centre in mass timber	2016	2015-2017	The largest health centre in Norway to be constructed in mass timber. The building includes a 108-bed nursing home, a learning, mastery and rehabilitation centre, a day centre for the elderly and a central kitchen.	192,307	192,307	226,000	85%	12,000	n/a	1 042	328
Hamos Forvaltning IKS	New waste transfer facility with solar panels	2015	2016	The hall has been built energy efficiently and uses its walls to produce solar power.	16,000	9,600	16,000	60%	n/a	21	n/a	7
Indre Fosen municipality	Energy-efficient emergency services building	2015	2015-2016	Co-location of fire and ambulance stations in one energy-efficient building.	30,000	25,683	45,000	57%	1,200	n/a	59	19
Indre Fosen municipality	New Åsly school - low energy	2015	2014-2016	A new elementary and lower secondary school with space for 400 pupils. Meets the passive-house standard.	51,100	43,748	235,000	19%	7,200	n/a	67	21

Buildings

Borrower	Project name	Last disbursement	Construction period (estimated)	Description	Total disbursed (1000 NOK)	Green loan outstanding (1000 NOK)	Total cost	KBN share of financing	Heated area (in total, m ²)	Estimated impact, KBN share		
										Energy produced (MWh/annually)	Energy avoided (MWh/annually)	Corresponds to avoided GHG (tonnes CO ₂ e annually)
Farsund municipality	Alcoa sports park - low energy	2014	2013-2015	Multi-use sports hall and year-round artificial grass pitch, with 97% of the heating needs supplied by excess heat from the nearby Alcoa aluminium factory. Energy-efficient building.	100,000	100,000	109,200	92%	5,500	n/a	374	118
Kristiansand municipality	Energy efficiency improvements to Town Hall Quarter	2014	2011-2014	New buildings and renovation of existing buildings, including some protected buildings. The heat demand is met by heat recovered from the municipality's data centre as well as by district heating. Free cooling for the data centre and buildings is based on using cold seawater from Byfjorden.	420,125	420,125	540,700	78%	13,071	n/a	691	218
Oppegård municipality	Augestad nursery - low energy	2014	2011-2014	Nursery building built to the passive-house standard with space for 36 children. The building is heated using geothermal energy distributed through under-floor heating.	26,000	26,000	26,000	100%	420	n/a	3	2
Oppegård municipality	Ødegården nursery - low energy	2013	2013-2015	Nursery building built to the passive-house standard with space for 100 children. The building is heated and cooled using energy wells.	46,200	46,200	47,800	97%	1,488	n/a	170	53
Oppegård municipality	Greverudåsen sheltered housing - low energy	2013	2011-2014	Sheltered housing for people with functional impairments. Built to the passive-house standard, heated using district heating.	16 396	16 396	31 800	52 %	920	n/a	44	14
Kristiansand municipality	Aquarama water park - low energy	2013	2010-2013	Low-energy swimming pool and bathing facility with a fitness centre, sports hall, and various public health services. The building uses district heating and heat recovery from ventilation.	485 246	485 246	596 000	81 %	15 000	n/a	1 216	383
Romerike avfallsforedling IKS (ROAF)	Low-energy administration building	2012	2011-2013	Administration building built to the passive-house standard in connection with a new sorting and recycling facility. Constructed in part with recycled building materials.	21 700	13 563	31 000	44 %	1 050	n/a	37	12
Sør-Varanger municipality	Kirkenes elementary and lower secondary school - low energy	2012	2009-2012	The new school replaces a number of old buildings and reduces energy consumption significantly.	358 000	295 350	370 000	80 %	12 400	n/a	297	94
Øvre Eiker municipality	Hokksund elementary school - low energy	2011	2010-2012	Elementary school built to the passive-house standard with space for 405 pupils. Part timber construction.	160 000	115 067	241 200	48 %	7 300	n/a	101	32
Drammen municipality	Fjell nursery in mass timber	2011	2009-2010	Nursery for 90 children built in mass timber to the passive-house standard. Building heated using low-temperature waterborne underfloor heating, as well as by a heat pump connected to geothermal wells.	15 963	7 982	28 200	28 %	755	n/a	17	5
Drammen municipality	Marienlyst school - low energy	2011	2009-2010	Norges første skole i passivhusstandard. Plass til 560 elever. Byggets varmebehov dekkes av nærvarmenett.	248 019	124 010	254 500	49 %	6 454	n/a	217	68



PROJECTS

Renewable energy

Projects that reap the energy potential of the sun, the wind, the ground, the sea, biomaterials and other renewable energy carriers, as well as waste.

Impact estimates are based on the assumption that produced energy is emission-free¹ and substitutes electricity from the grid, unless otherwise stated.

8

NUMBER OF PROJECTS FINANCED, TOTAL

0

PROJECTS DISBURSED IN 2019

GREEN LOANS TO RENEWABLE ENERGY

Total outstanding, in 1000 NOK	571,240
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ESTIMATED ANNUAL IMPACT ATTRIBUTABLE TO GREEN LOANS*

Estimated installed effect (total)	4 MWh
Estimated energy produced	109,448 MWh
Greenhouse gas emissions avoided	34,476 tonnes CO ₂ e

¹ In scopes 1 and 2 as defined by the Greenhouse Gas Protocol, which are the emission scopes covered by this report.

*In 2019, 72 percent of KBN's outstanding Green Loans portfolio was financed with green bonds. Hence, green bond investors who wish to calculate their share of impacts should note this share and the table on p. 3. The share of outstanding green loans financed through green bonds may vary from one year to the other.

These projects contribute to...

UN Sustainable Development Goals



Ensure access to affordable, reliable, sustainable and modern energy

Target 7.2 By 2030, increase substantially the share of renewable energy in the global energy mix.

The EU Environmental Objectives



1. Climate change mitigation

Renewable energy

Borrower	Project name	Last disbursement	Construction period (estimated)	Description	Total disbursed (1000 NOK)	Green loan outstanding (1000 NOK)	Total cost (1000 NOK)	KBN share of financing	Estimated impact, KBN share		
									Installed capacity (MW)	Expected annual energy production (MWh)	Estimated reduction in greenhouse gas emissions (tonnes CO ₂ e annually)
IVAR IKS	Grødalaland biogas plant	2019	2012	A plant for producing biogas based on sewage sludge, waste food and other organic waste. Biofuel plant for steam heat production based on de-watered bio residue and timber waste. Read more on page 33.	407,900	367,043	546,000	67%	1	59,829	18,846
Dyrøy energi AS	Sorting facility for timber waste for bio energy	2018	2018	Increasing the capacity of a biofuel-based district heating plant. Improving the feeding system and refurbishing a boiler, as well as adaptations to enable 15% of biofuel to come from chippings produced from waste timber from a nearby waste reception facility.	2,800	2,660	2,800	95%	n/a	285	90
Time municipality	New energy plant for City Hall area	2018	2018	A new heating plant based on bio pellets. Replacement for little-used gas boiler.	4,000	3,867	6,600	59%	n/a	1,230	388
Tønsberg municipality	Greve biogas - The magic factory	2018	2017	Facility for producing biogas based on biowaste from households and industry as well as manure. The biogas product primarily replaces fossil fuels used by busses, refuse trucks and other vehicles, but can also secondarily be used for heating.	170,000	161,053	240,000	67%	n/a	43,618	13,740
Eid Fjordvarme KF	Fjord-based district heating	2017	2017	District heating system based on low-temperature fjord water and heat exchangers that supplies more than 100,000m ² of buildings in central Nordfjordeid.	7,385	6,731	12,900	52%	3	4,331	1,364
HAMOS Forvaltning IKS	Frøya recycling centre	2017	2017	Solar panels on walls and roof of a new waste recycling facility.	12,500	10,863	22,000	49%	n/a	42	13
HAMOS Forvaltning IKS	Orkdal waste transfer facility	2016	2016	Waste transfer facility with a 200m ² solar panel plant on its façade. When the facility's machinery needs replacing, electric loaders will be purchased.	7,500	6,375	17,000	38%	n/a	11	4
Hvaler municipality	Sandbakken recycling centre	2016	2016	A recycling centre that produces its own energy through 1,200m ² of solar panels and four micro wind turbines. The excess power is stored in batteries and can be used when required.	14,055	12,649	24,200	52%	n/a	101	32



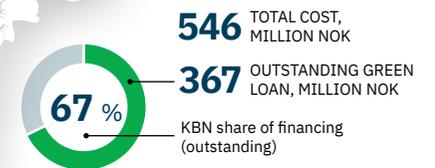
CASE

Rogaland using its unique situation to produce biogas

Methane gas emissions are a well-known problem from the perspective of climate change. Methane is 25 times more powerful as a greenhouse gas than CO₂. Organic waste can be used as a source of energy instead of being composted, spread or left to rot. With 10% of Norway's population, 20% of its livestock and organic waste from fisheries and other industry, Rogaland is very well placed to produce biogas. Local politicians decided to make the most of this by setting up a biogas plant in Grødal.

The plant receives various types of sludge, food waste and organic waste. Biogas is produced from this and then refined and sold to Lyse AS. The CO₂ that is extracted from the biogas is used as food for plants, and the bio residue is used as fertilizer and soil improver. This is the circular economy in practice. Biogas involves much more than the climate and environment – it also involves creating value and new jobs and making the most of resources!

Grødal biogas plant,
Rogaland county



Year of completion: i 2019

Estimated impact, share financed with green loan	
Installed capacity, kW	744
Expected energy production (MWh/annually)	59,829
Corresponds to avoided and reduced GHG (tonnes of CO ₂ e/annually)	18,846



PROJECTS Energy efficiency

Investments that reduce energy consumption by at least 25 percent compared to the situation prior to the investment and/or phase out fossil energy sources and other unsustainable energy solutions.

Impact is calculated by comparing energy consumption before the investment, to the estimated energy use after investment.

21

NUMBER OF
PROJECTS
FINANCED, IN
TOTAL

3

PROJECTS
DISBURSED IN
2019

KBN Green loans to energy efficiency

Total outstanding, in 1000 NOK	410,821
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Estimated annual impact attributable to green loans*

Energy savings	17,899 MWh
Greenhouse gas emissions reduced	5,637 tonnes CO ₂ e

*In 2019, 72 percent of KBN's outstanding Green Loans portfolio was financed with green bonds. Hence, green bond investors who wish to calculate their share of impacts should note this share and the table on p. 3. The share of outstanding green loans financed through green bonds may vary from one year to the other.

These projects contribute to...

UN Sustainable Development Goals



Ensure access to affordable, reliable, sustainable and modern energy

Target 7.3) By 2030, double the global rate of improvement in energy efficiency



Build resilient infrastructure, promote sustainable industrialization and foster innovation

Target 9.4) By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities.

The EU Environmental Objectives



1. Climate change mitigation

Energy efficiency

Borrower	Project name	Last disbursement	Construction period (estimated)	Description	Total disbursed (1000 NOK)	Green loan outstanding (1000 NOK)	Total cost (1000 NOK)	KBN share of financing	Heated area (in total, m ²)	Estimated impact, KBN share	
										Reduction in energy requirements (MWh/annually)	Corresponds to avoided greenhouse gas emissions (tonnes CO ₂ e annually)
Bærum municipality	Improving the energy efficiency of street lighting	2019	2018-2019	Replacing traditional street lighting with LED lighting in 8,000 of 24,000 street lights. The decrease in electricity consumption will be around 50%.	33,000	32,100	33,000	97%	n/a	n/a	n/a
Lesja municipality	Renovation of Lesja nursing home and setting up a new energy plant	2019	2018-2020	Extensive energy efficiency measures, as well as setting up a new energy plant based on ground-source heating that will replace electric heating. Read more on page 37.	57,454	57,454	106,768	54%	3,100	382	120
Våler municipality (Østfold)	Energy efficiency measures for municipal buildings	2019	2019-2020	EA range of measures that will together provide an energy saving of 38.7% per year compared with previous consumption.	25,000	25,000	27,000	93%	21,000	1 519	478
Flatanger municipality	Energy solution for Flatanger's new nursing and care centre	2018	2018-2019	Energy efficiency improvements through replacement of oil heating with geothermal heating and a central operational control system.	15,000	14,250	15,000	95%	2,823	247	78
Gjøvik Rådhus AS	Renovation of Gjøvik City Hall	2018	2017-2018	Introduction of district heating and new technology for temperature management. These improvements will produce a reduction in energy consumption of around 70%.	275,000	175,000	275,000	78%	10,801	2,485	783
Nesodden municipality	LED street lighting	2018	2018	Old street lighting replaced with more energy-efficient lighting.	1,600	1,557	2,000	78%	n/a	841	265
Rendalen municipality	Energy-saving measures across 11 municipal buildings	2018	2016-2018	Energy-saving measures will be implemented at municipal buildings as an energy performance contract (EPC). The project involves implementing 60 energy-saving measures of varying sizes across purpose-built buildings in the municipality.	9,056	8,523	12,477	68%	14,172	1,242	391
Sel municipality	Replacing street lighting	2018	2018	New LED technology and management system that will reduce energy consumption by over 25%.	3,240	3,186	3,240	98%	6,300	76	24
Steinkjerbygg KF	Inn Trøndelag healthcare and emergency centre	2018	2018-2019	New control system that will reduce energy consumption.	4,000	4,000	4,000	100%	n/a	n/a	n/a
Surnadal municipality	Heating/cooling pump at Kulturhuset	2018	2018	A new and more efficient heating/cooling pump that reuses heat from the cooling system.	600	580	600	97%	3,300	48	15
Horten municipality	Outdoor LED lighting	2017	2017	Old light fittings outside municipal buildings upgraded to LED lighting.	1,624	1,542	2,500	62%	n/a	62	19
Rømskog municipality	Biomass-fired plant	2017	2017	Traditional oil heating system replaced with bio heating in buildings.	1,300	1,213	1,813	67%	4,580	n/a	n/a
Sandefjord municipality	Energy efficiency project for public buildings	2017	2016-2018	Increasing the energy efficiency of 18 buildings through an energy performance contract. Phasing out the use of fossil fuels in five buildings, monitoring energy consumption, upgrading ventilation and water-to-air heat recovery.	23,600	20,060	23,600	85%	32,000	2,635	830

Energy efficiency

Borrower	Project name	Last disbursement	Construction period (estimated)	Description	Total disbursed (1000 NOK)	Green loan outstanding (1000 NOK)	Total cost (1000 NOK)	KBN share of financing	Heated area (in total, m ²)	Estimated impact, KBN share	
										Reduction in energy requirements (MWh/annually)	Corresponds to avoided greenhouse gas emissions (tonnes CO ₂ e annually)
Surnadal municipality	LED street lighting	2017	2017-2020	Replacing street lights with LED fittings.	150	138	150	92%	n/a	7	2
Utsira municipality	Siratun energy efficiency project	2017	2017	Energy efficiency project that includes waterborne heating, heat pumps and new lighting in Siratun's municipal administration building.	4,000	3,800	5,750	66%	1,130	123	39
Asker municipality	Energy efficiency project for public buildings	2016	2012-2016	Energy efficiency project involving a number of innovative solutions, such as using waste heat from producing ice for an ice rink to heat a swimming pool and phasing out fossil fuel usage from several buildings.	25,400	23,495	35,600	66%	50,000	3,630	1,143
Bardu municipality	LED street lighting	2016	2016-2017	Replacing 10% of the municipality's traditional street lights with LED fittings.	480	432	480	90%	n/a	n/a	n/a
Jevnaker municipality	Improving energy efficiency with an EPC contract	2016	2014-2016	Improving the energy efficiency of a number of long-use buildings. New solutions will ensure more stable operation of technical equipment.	21,000	18,467	21,000	88%	32,857	1,766	556
Spydeberg municipality	Energy efficiency project for public buildings	2016	2016	Improving the energy efficiency of nine municipal buildings and a water treatment plant. The project involves a range of energy efficiency measures, such as additional insulation, the installation of heat pumps and setting up an energy monitoring system and a central operational control system.	12,780	11,744	20,500	57%	34,700	1,332	420
Indre Fosen municipality	Improving energy efficiency through an EPC contract	2015	2014-2015	Improved energy efficiency and phasing out of fossil fuels in a municipal property. Heating oil consumption reduced by 98%, representing a significant reduction in climate gas emissions.	5,000	4,281	5,000	86%	17,324	1,330	419
Oppegård municipality	Central operational control system	2014	2014	Energy efficiency project that will connect the municipality's purpose-built buildings to a central operational control system.	4,000	4,000	4,400	91%	23,731	175	55



CASE

Best available technology for Lesja nursing home

When faced with the need to make their largest ever investment, Lesja municipality chose the best technology available in order to achieve an energy efficient nursing home.

The nursing home previously used a large amount of energy, the windows were draughty, the indoor environment was poor quality, and the light fittings were old and not controlled. In order to reduce the home's energy consumption significantly, the municipality carried out an extensive renovation. A new energy plant was installed using ground-source heating to replace the building's electric heating, and insulation was installed and other energy-saving measures were implemented both inside and outside. The project received funds from Enova as the best available technology was used for the renovation. The energy efficiency measures are positive both for the environment and the municipality's finances.

Lesja nursing home,
Lesja municipality



107 TOTAL COST, MILLION NOK

57 OUTSTANDING GREEN LOAN, MILLION NOK

54 % KBN share of financing (outstanding)

Estimated year of completion: 2020

Estimated impact, share financed with green loan	
Energy reduced and avoided (MWh/annually)	382
Corresponds to avoided GHG (tonnes of CO ₂ e/annually)	120



PROJECTS Transportation

Transportation solutions that generate minimal or zero emissions.

25 NUMBER OF PROJECTS FINANCED, TOTAL

7 PROJECTS DISBURSED IN 2019

Green loans to transportation

Total outstanding, 1000 NOK	3,942,029
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Estimated annual impact attributable to green loans*

Greenhouse gas emissions reduced and avoided	3,833 tonnes CO ₂ e
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*In 2019, 72 percent of KBN's outstanding Green Loans portfolio was financed with green bonds. Hence, green bond investors who wish to calculate their share of impacts should note this share and the table on p. 3. The share of outstanding green loans financed through green bonds may vary from one year to the other.

These projects contribute to...

UN Sustainable Development Goals



Build resilient infrastructure, promote sustainable industrialization and foster innovation

Target 9.1) Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all

Target 9.4) By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities



Make cities inclusive, safe, resilient and sustainable

Target 11.2) By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities

Target 11.6) By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management

The EU Environmental Objectives



1) Climate change mitigation

5) Pollution prevention and control

Transportation

Borrower	Project name	Last disbursement	Project period (estimated)	Description	Total disbursed (1000 NOK)	Green loan outstanding (1000 NOK)	Total cost (1000 NOK)	KBN share of financing	Estimated impact, KBN share
									Estimated reduced and avoided greenhouse gas emissions (tonnes CO ₂ e/annually)
Brevik Fergeselskap IKS	New electric ferry on the Brevik-Sandøya-Bjørkøya route	2019	2019-2020	The ferry will replace the existing ferry that consumes approximately 150,000 litres of diesel per year. The new ferry will have a greater capacity and will be more comfortable and reliable for passengers. Read more on page 40.	100,000	7,200	100,000	7%	n/a
Bærum municipality	Replacing municipal car fleet	2019	2019	Expanding the fleet of electric vehicles for municipal employees by around 35 cars. The electric car fleet helps reduce emissions and frees up parking spaces. The average mileage per car is estimated to be 15,000 km/year.	27,200	26,800	27,200	99%	100
Fitjar municipality	Fast-charging station in central Fitjar	2019	2019	The first charging station in Fitjar and therefore an important measure in the transition to a greener car fleet. Can charge up to five cars simultaneously.	300	300	500	60%	n/a
Kristiansund og Nordmøre Havn IKS	Shore-side power supply on Storkaia	2019	2018	Shore-side power supply which will supply up to two ships simultaneously with 500 kW each. The shore-side power supply is itself equipped with a frequency converter and a transformer. The project was subsequently expanded to comprise four power supply points.	1,678	1,636	8,390	20%	n/a
Oslo municipality	Tram depots in Oslo - Holtet and Grefsen depots	2019	2020	Reconstruction of the tram depots to prepare for arrival of new trams, the number of which will increase from 72 to 87, and they will be longer, which will increase capacity as well. Fossil-fuel-free building site.	1,060,000	1,060,000	1,060,000	100%	n/a
Sel municipality	Procurement of electric cars for the home car service	2019	2019	Procurement of electric cars for the municipality's home care service as part of a long-term plan to replace the municipality's fossil-fuel car fleet with electric alternatives.	2,000	2,000	2,000	100%	15
Karmsund Havn IKS	Electric harbour crane	2019	2019	Mobile harbour crane with a lifting capacity of 154 tonnes that can handle containers, bulk cargo and project cargo. The crane can only be operated using electricity and will be able to serve the entire dock area.	35,000	35,000	35,000	100%	n/a
Nesodden municipality	Charging station for electric cars	2018	2018-2019	Facilitating use of electric cars by installing 32 charging points.	800	778	1,400	56%	n/a
Nesodden municipality	Creation of coastal path	2018	2018-2019	Creation of a 4-4.5km coastal path that will help promote cycling and walking as well as leisure activities.	640	623	2,400	26%	n/a
Nesodden municipality	Electric bikes for municipal employees	2018	2018	Procurement of 88 electric bikes for municipal employees, potentially significantly reducing car usage.	1,367	1,330	1,500	89%	n/a
Sel municipality	Charging station for electric cars	2018	2018	Installation of charging points in area with many holiday houses. It is estimated that these will be used by 10,000 people.	320	309	400	77%	n/a
Stavangerregionen Havn IKS	Shore-side power supply in central Stavanger and an offshore terminal in Risavika	2018	2018-2019	Installation of two shore-side power systems with six quay posts. Will help docked vessels to move from using fossil fuels to green energy. Reduction in local pollution.	15,333	8,226	26,833	31%	n/a

The table continues on page 41



CASE

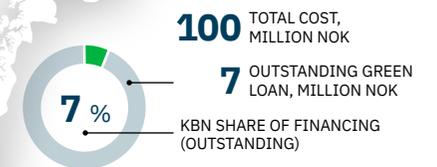
First green loan for an electric ferry

Electrifying the ferry sector is important both for the climate in general and for individual local environments. Norway is a leading nation in zero-emissions shipping, and more and more municipalities are using their purchasing power to drive forward new climate-friendly technology.

Porsgrunn municipality's electric ferry is the first zero-emissions vessel to be financed by a green loan from KBN. The electric ferry will be equipped with battery packs that can be charged from the electricity network. It will also meet the strictest environmental requirements, which will significantly reduce the ferry's CO2 emissions and energy consumption.

The new electric ferry will be great for passengers, great for the climate and great for the local environment – a veritable Kinder Egg!

Electric ferry, Porsgrunn municipality



YEAR OF COMPLETION: 2020

Estimated annual impact, share financed with green loan	
Estimated passengers (annually)	120,000

Photo: Illustration photo, Fjord1

Transportation

Borrower	Project name	Last disbursement	Project period (estimated)	Description	Total disbursed (1000 NOK)	Green loan outstanding (1000 NOK)	Total cost (1000 NOK)	KBN share of financing	Estimated impact, KBN share	
									Estimated reduced and avoided greenhouse gas emissions (tonnes CO ₂ e/annually)	
Surnadal municipality	Svartvatnet: footpath and recreational area	2018	2018-2020	Conversion of roadway into a foot and cycle path in central Surnadal to reduce car traffic and to make it easier for people to walk or cycle to school and work. Free school transport will be reduced as a consequence of the footpath, and 500 pupils will use the footpath every day.	10,800	10,095	11,500	88%		n/a
Time municipality	Facilitating walking and cycling	2018	2018	Creation of foot and cycle paths that make it safe to walk and cycle along a county road that is also a route to school. A bridge over water connects cycle lanes on the east and west side.	25,000	24,167	43,000	56%		n/a
Båtsfjord Havn KF	Shore-side power supply and charging points	2017	2017-2018	Shore-side power supply and charging points for up to 44 large vessels along four public quay fronts. The electricity is generated by wind turbines located in the municipality. The port electrification will reduce CO2 emissions, local air pollution and noise.	6,400	5,760	31,855	18%		542
Harstad Havn KF	Shore-side power supply	2017	2017-2018	Container-based, shore-side mobile power supply for use on four quays.	2,642	2,114	8,158	26%		n/a
Horten municipality	Construction of energy filling station and gas operations	2017	2017	Energy filling station for liquefied biogas (LBG) for municipal and private vehicles. The biogas is produced from food waste and sewage sludge at Greve biogas plant.	8,861	8,383	9,600	87%		227
Horten municipality	Procurement of biogas cars	2017	2018	Purchasing of 24 biogas cars for the municipal car fleet. CO2 impact is recognised as part of the filling station project.	16,484	15,913	18,500	86%		n/a
Rømskog municipality	Construction of foot and cycle paths	2017	2017	Creation of 700m of foot and cycle paths connecting the school and municipal administration building to residential areas that will be used by approximately 200 school children and employees.	6,500	6,067	8,500	70%		n/a
Horisont Miljøpark IKS	Procurement of refuse trucks that run on biogas	2017	2017	Procurement of refuse trucks that run on biogas. The vehicles collect household waste in a region comprising five municipalities and around 72,000 residents.	27,000	16,200	27,000	60%		n/a
Holmestrand municipality	Mountain lift directly from train station	2016	2015-2016	Installation of lift service connecting mountain plateau to underpass leading to Holmestrand train station. The lift will make travelling by train more attractive for 3,000 people who live within 20 minutes' cycle ride of the station.	24,650	17,426	64,500	27%		n/a
Hvaler municipality	Installation of charging stations	2016	2016-2017	Improvements to infrastructure for charging of electric cars and plug-in hybrid cars, comprising 14 charging points at the town hall and two fast charging points at other locations in the municipality.	499	449	1,050	43%		n/a
Ferde AS	Bergen light rail	2014	2008-2017	Electric light rail service, representing an efficient and environmentally friendly public transport service in Bergen. The line delivered 12.6 million passenger journeys in 2017.	3,270,000	2,675,455	5,270,000	51%		2,921
Oppegård municipality	Construction of foot and cycle paths	2014	2014	Creation of 530m of foot and cycle paths and bicycle parking, improving bike lanes and procurement of electric bikes.	8,509	8,509	8,700	98%		n/a
Oppegård municipality	Electric cars for the home care service	2014	2014	29 cars used by the municipality's home care service replaced with electric cars.	7,290	7,290	7,300	100%		27



PROJECTS

Waste and circular economy

Investments that contribute to waste reduction, reuse, recycling, or more efficient energy consumption

27

NUMBER OF PROJECTS FINANCED, TOTAL

11

PROJECTS DISBURSED IN 2019

Green loans to waste and circular economy

Total outstanding, in 1000 NOK	757,745
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Estimated annual impact attributable to green loans*

Increase in capacity	139,796 tonnes
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*In 2019, 72 percent of KBN's outstanding Green Loans portfolio was financed with green bonds. Hence, green bond investors who wish to calculate their share of impacts should note this share and the table on p. 3. The share of outstanding green loans financed through green bonds may vary from one year to the other.

These projects contribute to...

UN Sustainable Development Goals



Make cities inclusive, safe, resilient and sustainable

Target 11.6) By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management



Ensure sustainable consumption and production patterns

Target 12.4) By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment

Target 12.5) By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse

The EU Environmental objectives



1) Climate change mitigation

4) Transition to a circular economy, waste prevention and recycling

5) Pollution prevention and control

Waste and circular economy

Borrower	Project name	Last disbursement	Construction period (estimated)	Description	Total disbursed (1000 NOK)	Green loan outstanding (1000 NOK)	Total cost (1000 NOK)	KBN share of financing	Estimated impact, KBN share	
									Total capacity (tonnes)	Increased capacity (tonnes)
IVAR IKS	Pre-treatment facility for organic waste	2019	2011-2017	A facility that prepares organic waste for biogas production. Replaces previous composting plant. The facility increases the intake capacity for organic waste by 67%, with benefits including the possibility of using fish waste for which there is otherwise no use.	56,000	50,542	220,000	23%	11,555	4,635
IVAR IKS	Forus waste sorting facility	2019	2016-2019	New technology at the facility that ensures a very high material recovery rate of 75%. Also increases the recovery of plastic materials from 7% to 100%. Read more on page 44.	87,200	73,343	620,000	12%	15,378	3,076
Renovasjon i Grenland IKS	Collection point for waste from holiday cabins in Bamble	2019	2019-2020	The measure will reduce the amount of litter left by visitors and help make waste management in the cabin area in Bamble more sustainable.	3,200	3,093	20,000	15%	n/a	n/a
Renovasjon i Grenland IKS	Waste disposal from holiday cabins in Skien	2019	2019	Measures that will make waste management in the cabin area in Skien more sustainable.	7,300	7,057	7,300	97%	n/a	n/a
Renovasjon i Grenland IKS	Introduction of a new collection scheme	2019	2019	Introduction of a collection scheme for glass and metal packaging. The measure will help increase the recycling rate for valuable resources that can be recycled endlessly.	27,000	25,071	27,000	93%	1,671	1,671
Renovasjon i Grenland IKS	Pasadalen recycling centre	2019	2017-2018	New recycling centre as part of work to increase the recycling rate.	37,748	33,265	37,748	88%	12,337	12,337
Sel municipality	New Bjøstadmo and Myrmoen recycling centres	2019	2019-2020	Construction of two new waste reception facilities to facilitate at-source sorting for a large proportion of the municipality's residents. The facility in Bjøstadmo will also function as a collection point for agricultural plastics.	7,500	7,500	9,000	83%	n/a	n/a
Sel municipality	A Molok waste system for homes for people with disabilities	2019	2019-2020	Creation of Molok waste points in connection with local government homes for people with disabilities and a near-by local medical centre. The measure will primarily increase the level of sorting, but will also deliver savings as the waste collection frequency will be changed.	640	640	640	100%	n/a	n/a
Sirkula IKS	New sorting hall at Heggevin waste facility	2019	2020	Storing waste under cover helps increase the sorting rate and improves the quality of the waste, and thus reduces transport needs. The measure will also lead to a reduction in polluted runoff.	23,000	23,000	33,000	70%	n/a	n/a
Sirkula IKS	New Gålåsholmen resource recirculation centre	2019	2018-2020	Modern waste reception and management/transfer centre for all types of waste. The centre facilitates re-use and a high sorting rate. It is anticipated that the re-use station will help reduce the amount of waste produced each year by around 1,500 tonnes.	107,000	105,788	113,970	93%	n/a	n/a
Søre Sunnmøre Reinhaldsverk IKS	Investment in underground waste solutions, waste collection bins and new containers	2019	2019	Measures that will help increase the waste sorting rate and improve waste resource usage.	6,000	5,850	6,000	98%	n/a	n/a
Haugaland Interkommunale Miljøverk	Recycling centre waste reception systems	2018	2017-2018	Creation of a reception facility to improve how dangerous waste is received.	1,035	939	1,725	54%	381	381

The table continues on page 45



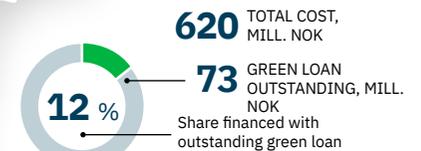
CASE

Modern technology simplifies waste sorting process and increases recycling

IVAR's state-of-the-art post-sorting plant in Forus sorts residual waste from households. Not only do the plant's machines separate out plastic and metal packaging from such waste, they also refine the plastic waste at the same time – it is the first plant in the world where this happens. The raw materials that are recovered are distributed to the plastics and metals industry where they take on a new life as new products. Waste that cannot be recycled is used as fuel to produce electricity and for district heating.

The plant is one element in a sustainable circle where waste is converted back into valuable raw materials. This in turn helps increase recycling, saving the environment around 33,000 tonnes of environmentally harmful emissions annually. This is equivalent to the emissions generated by 20,000 petrol cars! The plant thus helps to reduce greenhouse gas emissions while also creating a number of local jobs.

IVAR IKS,
Rogaland County



Year of completion: 2019

Estimated impact, share financed with green loan	
No. tonnes the facility is expected to process per year	15,378
Estimated increase in capacity attributable to the investment (tonnes)	3076

Photo: Marie Kulander Kvitsrud / IVAR IKS

Waste and circular economy

Borrower	Project name	Last disbursement	Construction period (estimated)	Description	Total disbursed (1000 NOK)	Green loan outstanding (1000 NOK)	Total cost (1000 NOK)	KBN share of financing	Estimated impact, KBN share	
									Total capacity (tonnes)	Increased capacity (tonnes)
Haugaland Interkommunale Miljøverk	Modifications to landfill gas plant	2018	2017-2018	Optimising an existing landfill gas plant so that it operates the entire time. Will help reduce carbon dioxide and methane emissions.	1,035	939	1,725	54%	n/a	n/a
Sel municipality	New recycling facility in Heidal	2018	2018-2019	New recycling station as part of work to increase recycling rate.	400	387	817	47%	142	142
Ålesundregionen Interkommunale Miljøsekskap IKS	Introduction of new collection scheme	2018	2017-2018	Collection scheme for food waste and glass and metal packaging, as well as measures at recycling centres to increase recycling.	14,400	11,314	14,400	79%	n/a	n/a
Dyrøy municipality	Building a recycling centre	2017	2017-2018	A new recycling centre with a better sorting system that will ensure a higher recycling rate and better resource utilisation. The facility will process waste from 650 households.	3,600	3,312	3,800	87%	436	436
Longyearbyen Community Council	Feasibility study for a new waste facility	2017	2017-2019	Feasibility study for a new waste facility with the target of ensuring Longyearbyen is at least as good at resource and environment waste management as mainland Norway. The new facility to be moved out of the centre of the town in accordance with a new municipal zoning plan.	12,982	12,707	90,000	14%	n/a	n/a
Simas IKS	Logistics solution for recycling timber	2017	2017	A new logistics solution for timber waste. This solution makes it possible to store timber taken to a recycling centre for longer periods so that larger loads can be transported by boat instead of by lorry as today.	2,000	1,750	2,000	88%	2,188	2,188
Sirkula IKS	Waste collection	2017	2010-2015	Equipment for collecting waste from 42,000 customers in Hedmark county.	6,979	5,532	32,250	17%	n/a	n/a
Søre Sunnmøre Reinholdsverik IKS	New recycling centres	2017	2015-2018	Three new recycling centres, a new administration building and upgrading the sorting facilities. The administration building will have solar panels on its roof and will be virtually energy-neutral. This will reduce the facilities' annual energy consumption by 30,000 kWh.	84,000	77,731	109,500	71%	8,873	8,873
Sirkula IKS	Gållåsholmen	2016	2013-2015	Reception facility for garden waste, which will later be expanded to include high-tech recycling equipment. The facility will function as a recycling centre and re-sale outlet for products including compost produced by Sirkula.	17,721	14,607	18,800	77%	15,539	15,539
Sirkula IKS	Recycling facilities	2016	2010-2015	Upgrading five recycling facilities for waste from 40,000 customers.	14,452	11,713	19,303	61%	n/a	n/a
Sirkula IKS	Heggevin waste treatment facility	2016	2010-2015	A new waste treatment facility for environmentally treating sand sludge, ash, polystyrene and hazardous waste. Associated landfill site so that landfill gasses can be used and so reduce emissions.	60,793	49,001	72,553	68%	67,538	67,538
Sirkula IKS	Husholdningsavfall 1016	2016	2016	Procurement and deployment of recycling bins that enable a new collection scheme for glass and metal waste, as well as a new "resource recirculation centre" with better self-service and recycling systems.	30,000	24,375	30,000	81%	n/a	n/a

Waste and circular economy

Borrower	Project name	Last disbursement	Construction period (estimated)	Description	Total disbursed (1000 NOK)	Green loan outstanding (1000 NOK)	Total cost (1000 NOK)	KBN share of financing	Estimated impact, KBN share	
									Total capacity (tonnes)	Increased capacity (tonnes)
Sirkula IKS	Næringsprosjekter 2016	2016	2016	Preparation and construction of new landfill cells that ensure contaminated soil and other waste are properly processed, a system for receiving sand and oil sludge that produces cleaner fractions and less volume for landfill, and a sorting building that produces less soil and air pollution.	28,300	23,306	28,300	82%	n/a	n/a
Vest-Finnmark Avfallsselskap (Vefas)	New composting facility	2015	2012-2017	Bio waste system that composts waste food, sewage sludge and slaughterhouse waste from farming and reindeer breeding.	11,500	10,350	70,000	15 %	591	591
Romerike Avfallsforedling IKS (ROAF)	New waste sorting facility	2012	2012-2014	Big, new sorting facility with hi-tech sorting equipment. The facility is the first in the world to sort plastic materials from residual waste entirely automatically.	234,000	174,633	234,000	75 %	59,704	22,389



PROJECTS

Water and wastewater management

Water and wastewater projects that either are primarily intended to reduce greenhouse gas emissions or energy consumption, or that are a response to a specific climate change adaptation requirement.

42

NUMBER OF PROJECTS FINANCED, TOTAL

16

PROJECTS DISBURSED IN 2019

Green loans to waste management

Total outstanding, in 1000 NOK 3,420,036

Estimated annual impact attributable to green loans*

Increase in capacity 444,482 population equivalents

*In 2019, 72 percent of KBN's outstanding Green Loans portfolio was financed with green bonds. Hence, green bond investors who wish to calculate their share of impacts should note this share and the table on p. 3. The share of outstanding green loans financed through green bonds may vary from one year to the other.

These projects contribute to...

UN Sustainable Development Goals



Ensure access to water and sanitation for all

Target 6.1) By 2030, achieve universal and equitable access to safe and affordable drinking water for all

Target 6.3) By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally

Target 6.4) By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity



Conserve and sustainably use the oceans, seas and marine resources

Target 14.1) By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution

The EU Environmental Objectives



1. Climate change mitigation

2. Climate change adaptation

3. Sustainable use and protection of water and marine resources

5. Pollution prevention and control

Water and wastewater management

Borrower	Project name	Last disbursement	Construction period (estimated)	Description	Total disbursed (1000 NOK)	Green loan outstanding (1000 NOK)	Total cost (1000 NOK)	KBN share of financing	Estimated impact, KBN share Increased capacity (population equivalents)
Balsfjord municipality	Upgrading water and wastewater infrastructure	2019	2008-2017	Upgrading and up-sizing to address increases in precipitation levels. Replacement of 2.8 km of water main and 5.4k m of wastewater main, as well as replacing associated pumping stations.	65,340	59,268	65,000	91%	n/a
Bærum municipality	Separating and strengthening wastewater network	2019	2018	Measures to address growing challenges presented by surface runoff. Replacing a shared pipe by laying 6 km of pipe for water and 7 km for wastewater.	108,000	107,600	108,000	100%	n/a
Fitjar municipality	Environmentally friendly water and wastewater master plan	2019	2019	This is an overall plan that will be important for climate change adaptation and environmentally friendly operations.	400	400	400	100%	n/a
Fitjar municipality	Environmentally friendly street - a surface runoff system	2019	2019	A new system for water, wastewater and surface runoff that will ensure a future-oriented water and wastewater system. The system is dimensioned for increased amounts of precipitation. Read more on page 49.	5,600	5,600	5,600	100%	n/a
Holmestrand municipality	Holmestrand treatment plant	2019	2017-2019	Expanding a water treatment plant to address population growth and an increase in water treatment demand. Installing a biological treatment stage and increasing the facility's capacity, as well as facilitating its expansion.	80,100	78,225	80,100	100%	n/a
IVAR IKS	New Nærbø treatment plant	2019	2011-2012	Upgrading a treatment plant so that it can cope with expected population growth of 100,000 people by 2050.	28,500	24,038	28,500	84%	4,928
IVAR IKS	Langevatn water treatment plant	2019	2012-2018	Introduction of a more extensive treatment process including ozone treatment and bio filtration that are essential to ensure satisfactory water quality and hygiene standards in anticipation of warmer and wetter climatic conditions in the future.	535,000	516,380	1,100,000	47%	46,641
IVAR IKS	Expansion of Grødalund treatment plant	2019	2013-2018	Upgrading the plant with a new treatment stage. The expansion has contributed to the discharge limit now being 150,000 population equivalents (PEs) per day.	43,700	35,354	43,700	81%	96,350
IVAR IKS	Central treatment facility for Nord-Jæren	2019	2012-2016	Expansion due to strong population growth. Previous chemical treatment process replaced with biological treatment. Separate biogas plant as well as a fertiliser factory that produces fertiliser pellets from biological residue.	150,300	125,684	520,000	24%	38,482
Krødsherad municipality	New Noresund treatment plant	2019	2018-2020	The new treatment plant is being built with chemical and biological treatment systems and has strict release requirements for phosphorus and bacteria. Management systems will automate some aspects of the plant's operations. A 3 km underwater pipeline will be installed between Noresund and Bjøre to take wastewater to the new treatment facility.	47,000	46,017	112,056	41%	4,107
Oppdal municipality	Water and wastewater measures that will contribute to more efficient surface runoff management	2019	2019	Replacing/refurbishing a surface runoff pipe to improve surface runoff management. The pipe will be dimensioned to manage the future climate.	3,028	3,028	3,028	100%	n/a

The table continues on page 50



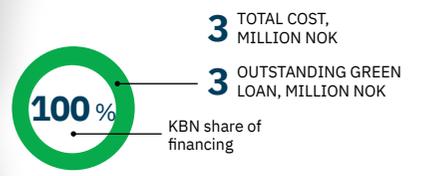
CASE

A surface runoff management system in Fitjar street

Climate change is causing more frequent and more extreme precipitation, and this is leading to an increase in the incidence of surface runoff. Investing in climate change adaptation measures helps equip local communities for such challenges and also prevents damage to the environment, infrastructure and, in the worst case, people's health. Investing in climate change adaptation measures today will pay off tomorrow.

As part of its climate change adaptation work, Fitjar municipality has built a separate system for managing surface runoff – an environmentally friendly street. The project includes upgrading and increasing the capacity of the water and wastewater system, and surface runoff is also now separated from the rest of the sewerage system. This helps keep the drinking water safe and reduces pollution levels in the wastewater. The environmental street also provides the area with a boost in that it makes the centre of Fitjar more attractive to pedestrians and people travelling by bus – another plus point for public wellbeing.

Miljøgate, Fitjar municipality



Year of completion: 2019

Water and wastewater management

Borrower	Project name	Last disbursement	Construction period (estimated)	Description	Total disbursed (1000 NOK)	Green loan outstanding (1000 NOK)	Total cost (1000 NOK)	KBN share of financing	Estimated impact, KBN share Increased capacity (population equivalents)
Oppdal municipality	Sewage piping to treatment plant	2019	2020	Replacing 1,600 wastewater pipes to ensure that sewage no longer overflows and ends up in the centre of town and the river. Pipe dimension increased from 200 mm to 400 mm.	3,544	3,544	3,544	100%	n/a
Ringerike municipality	Monserud treatment plant	2019	2016-2019	A range of measures have been implemented that will help improve energy efficiency and the level of treatment, and reduce greenhouse gas emissions. The sewage sludge will be used for soil-improving material and to produce biogas that will be used to heat the plant.	333,100	328,300	360,000	91%	32,830
Sauda municipality	New wastewater treatment plan in Sauda	2019	2018-2020	The plant uses the latest technology and minimal quantities of chemicals. The investment will help to significantly decrease the volume of untreated discharge released into Sauda fjord. The plant will be capable of managing surface runoff and is dimensioned for extreme precipitation.	40,000	40,000	50,000	80%	5,000
Sel municipality	Thoøya water treatment	2019	2019-2022	Creation of a new water supply plant that helps reduce vulnerability in relation to flooding, drought and pollution. The project also includes improving surface runoff pipes as a climate change adaptation measure.	31,840	31,840	34,000	94%	n/a
Vefsn municipality	Mosjøen treatment plant with new treatment technology	2019	2019-2021	New treatment technology will contribute to cleaner discharges. The project also includes climate change adaptation measures.	16,000	16,000	16,000	100%	7,000
FjellVAR	Storanipa wastewater treatment facility	2018	2016-2019	A new wastewater treatment plan with energy recovery solutions such as heat pumps and solar panels.	163,600	157,142	456,000	34%	17,230
Grane municipality	New wastewater treatment facility	2018	2019-2020	A new treatment facility will replace a facility that dates from 1980 which does not satisfy current requirements. The facility will reduce the amount of phosphorus contained in the feed water by at least 90%. The sludge produced by the facility will be sent for conversion into compost.	14,100	13,395	14,100	95%	190
Hias IKS	Water transportation and treatment	2018	2010-2018	Upgrading the water supply in the Hamar region. The project comprises installing a dual water supply, a new zone system for water pressure and emergency back-up power for all pumping stations.	246,268	213,151	275,000	78%	n/a
IVAR IKS	Vågen wastewater pumping station	2018	2017-2019	The station improves capacity and helps improve the management of higher levels of runoff. A new overflow system is being set up so that any overflow will not end up in the Vågen bay or the centre of Sandnes.	30,000	30,000	30,000	100%	n/a
Lindås municipality	Litlås water treatment plant	2018	2017-2021	A new, future-oriented water treatment facility for producing drinking water. The facility makes good use of resources and avoids the need for alternative large-scale long-distance pumping solutions to be built.	116,600	111,647	132,000	88%	10,150
Lyngen municipality	Upgrades to management of water and wastewater	2018	2019-2021	Upgrades that will enhance water supply security and the treatment of wastewater that is currently released untreated. Dimensions of pipe network to be increased to cope with increase in levels of precipitation.	11,500	11,152	11,500	97%	n/a
Rødven Vassverk SA	Drilling of new wells	2018	2018	Drilling of two new wells to increase capacity.	600	555	600	93%	n/a

Water and wastewater management

Borrower	Project name	Last disbursement	Construction period (estimated)	Description	Total disbursed (1000 NOK)	Green loan outstanding (1000 NOK)	Total cost (1000 NOK)	KBN share of financing	Estimated impact, KBN share Increased capacity (population equivalents)
Skjervøy municipality	Refurbishing water and wastewater pipes	2018	2017-2022	Increasing the capacity of the wastewater system to address increased levels of runoff water. The measures include separating runoff water and wastewater, installing a separate pipe for runoff water, and setting up a central operational control system to improve control.	8,200	7,872	32,000	25 %	n/a
Surnadal municipality	Kvanne and Stangvik waterworks	2018	2018-2021	A new, modern waterworks for a section of the municipality which has not previously had a municipal waterworks, as well as construction of a wastewater network. The area has had problems with its water supply due to climate change.	7,000	6,767	27,000	25 %	100
Trondheim municipality	Joint water and wastewater plant for Trondheim and Klæbu	2018	2017-2021	New joint water and wastewater facility that will provide greater capacity and reduce local discharges. The facility is dimensioned with allowance for climate change and local climate change adaptation measures.	140,000	140,000	274,000	51%	3,577
Nesodden municipality	Upgrades to management of water and wastewater	2018	2018-2019	Implementation of a range of measures to upgrade water and wastewater management. Dimensioned using a climate factor of 1.4 to take into account future increases in precipitation, with runoff water processed separately from the wastewater treatment system.	40,000	38,974	40,000	97%	n/a
Dyrøy municipality	New Dyrøy waterworks	2017	2017-2019	New waterworks for inhabitants of Dyrøya, who have previously experienced problems with the purity of their water.	3,900	3,588	50,000	7%	n/a
Eid municipality	Hornindalsvatn Lake as new municipal water supply	2017	2012-2018	Developing Hornindalsvatn Lake as a new water source for Nordfjordeid waterworks.	39,100	37,678	60,000	63%	n/a
Midtre Romerike avløpselskap (MIRA IKS)	New wastewater treatment plant	2017	2014-2016	A new wastewater treatment facility equipped to process sludge and to produce biogas. The project also includes a 35km pipe network, seven pumping stations and four retention basins to manage rainwater.	593,000	544,151	600,000	91%	57,136
Rømskog municipality	New wastewater pipe network	2017	2018	New pipe network for sewage and wastewater which will significantly improve the standard of sewage treatment in the municipality. The new network will also collect grey water that previously went to land disposal.	8,900	8,603	18,602	46%	29
Søndre Follo Renseanlegg IKS	Research study into new treatment plant	2017	2018-2021	Research-based feasibility study in collaboration with the Norwegian University of Life Sciences regarding a new treatment facility, including assessment of different treatment solutions and dimensions.	15,000	15,000	15,000	100%	n/a
Søndre Helgeland Miljøverk	Research-based treatment solution	2017	2016-2017	The removal of heavy metals is the first stage of a research-based development project being undertaken in collaboration with the Norwegian University of Science and Technology. The project as a whole is about reducing emissions from small wastewater systems with limited space for treatment facilities.	5,400	4,725	5,400	88%	35,875
Ulvik herad	Hjeltnes wastewater treatment plant	2017	2017-2018	Upgrading a treatment facility that dates from 1990 with a new sludge separator and greater capacity, among other measures. System for waste gas clean-up.	11,000	9,900	13,550	73%	190

Water and wastewater management

Borrower	Project name	Last disbursement	Construction period (estimated)	Description	Total disbursed (1000 NOK)	Green loan outstanding (1000 NOK)	Total cost (1000 NOK)	KBN share of financing	Estimated impact, KBN share Increased capacity (population equivalents)
Hægebostad municipality	Skeie treatment plant	2017	2016-2017	New energy efficient sewage treatment facility with high-pressure system that reduces sludge output. The sludge will be used in the production of soil improving material.	10,000	9,500	2,500	44%	376
Bardu municipality	Water pipeline from Nordli to Finnkroken	2016	2015-2016	New pipeline to connect existing waterworks and to secure water supply for Bardu and Målselv municipalities. Makes use of natural difference in height to drastically reduce energy used to pump water relative to previous solution. Reduction of 75,000 kWh in the energy requirement for the pumping station.	16,000	14,400	16,000	90%	4,050
HIAS IKS	New water treatment plant	2016	2015-2021	The water treatment process at the new facility will consist of chemical treatment with direct filtration, UV treatment and chlorination. A new treatment process is required because the quality of the untreated water in lake Mjøsa is being adversely affected by climate change.	47,280	43,069	350,000	12%	4,388
HIAS IKS	Upgrading treatment plant	2016	2011-2017	Upgrading HIAS's main treatment facility to address population growth and increased commercial activity in the Hamar area. Introducing an entirely biological treatment process that releases phosphorus and other nutrients that are chemically bonded due to the current chemical treatment process.	181,000	150,949	214,058	70%	n/a
HIAS IKS	Underwater pipeline under Furnesfjorden	2016	2015-2018	New underwater pipeline that doubles the wastewater transfer capacity through lake Mjøsa. The pipeline will avoid the risk of leaks and eutrophication of Mjøsa, which has a vulnerable ecosystem and is a source of drinking water for 80,000 people.	114,000	104,426	170,000	61%	4,297
Oppegård municipality	Upgrades to management of water and wastewater 2013-2015	2015	2013-2015	Refurbishment of wastewater system and improvements to water supply network. Upgrading of waterworks, including installation of UV treatment.	65,101	65,101	92,295	71%	n/a
IVAR IKS	Dual water supply for island communities	2014	2012-2014	New dual water supply to the island communities in Rennesøy and Finnøy municipalities, via a 20km undersea pipeline.	189,500	150,750	189,500	80%	n/a
Tønsberg Renseanlegg IKS	New treatment plant	2014	2014-2018	New treatment plant for wastewater from five municipalities that will significantly increase treatment capacity and reduce emissions.	126,500	106,267	133,000	80%	71,555



PROJECTS

Land use and area development projects

Area development projects that emphasise nature, the environment and the climate, as well as for anti-pollution measures.

6

NUMBER OF
PROJECTS
FINANCED, TOTAL

5

PROJECTS
DISBURSED IN
2019

Green loans to land use and area developments projects

Total outstanding, in 1000 NOK

279,355

*In 2019, 72 percent of KBN's outstanding Green Loans portfolio was financed with green bonds. Hence, green bond investors who wish to calculate their share of impacts should note this share and the table on p. 3. The share of outstanding green loans financed through green bonds may vary from one year to the other.

These projects contribute to...

UN Sustainable Development Goals



Make cities inclusive, safe, resilient and sustainable

Target 11.3) By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries

Target 11.7) By 2030, provide universal access to safe, inclusive and accessible, green and public spaces, in particular for women and children, older persons and persons with disabilities



Conserve and sustainably use the oceans, seas and marine resources

Target) 14.2 By 2020, sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience, and take action for their restoration in order to achieve healthy and productive oceans



Sustainably manage forests, combat desertification, halt and reverse land degradation, halt biodiversity loss

Target 15.1) By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements



The EU Environmental Objectives

1. Climate change mitigation
2. Climate change adaptation
6. Protection of healthy ecosystems

Land use and area development projects

Borrower	Project name	Last disbursement	Project period (estimated)	Description	Total disbursed (1000 NOK)	Green loan outstanding (1000 NOK)	Total cost	KBN share of financing	Area (in total, m ²)
Bærum municipality	Riverside walkway along Sandvikselven river	2019	2018-2020	The new riverside walkway will bring about a greater closeness and connection to the river and will facilitate walking and cycling, while also functioning as a recreational area for the local population.	114,900	114,900	114,900	100%	12,000
Elverum Tomteselskap AS	Ydalir - District of the future in Elverum	2019	2016-2019	A new, environmentally friendly district within walking distance of central Elverum. The investment comprises infrastructure adaptations and preparing residential areas for sale. It will be built as part of a Zero Emission Neighbourhood (ZEN), meaning developers will have to meet strict environmental requirements.	110,000	110,000	140,000	79%	300,000
Holmestrand municipality	Renovating Dunkebekken stream	2019	2019-2022	Piping to redirect precipitation/surface runoff and wastewater away from a stream. Residents benefit from a cleaner stream in the central area. This is a positive measure for natural diversity.	7,593	7,593	40,000	19%	n/a
Krødsherad municipality	Closure of landfill site, Slettemoen	2019	2020-2021	Closure of a land fill site where innovative measures have been taken to reduce emissions and pollution as well as to manage surface runoff. Read more on page 55.	5,000	5,000	10,000	50%	10,000
Sel municipality	Facilitating walking and cycling access to bus station	2019	2019-2021	Renovation of Ola Dahls gate to facilitate walking and cycling. The project is central to a major transport hub project.	1,000	1,000	16,500	6%	n/a
Tromsø Havn	The Clean Tromsøysund Project	2016	2016	Major project to clean the polluted seabed outside Tromsø. The project will help to reduce the level of organic pollutants by 75 percent.	48,686	48,686	129,104	32%	100,000

CASE

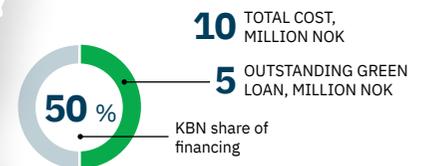
Incorporating climate measures and surface runoff management into land fill closure

Slettemoen land fill site was operative as a waste disposal site for household and trade waste from approx. 1980 to 1995 and has since been used as an interim storage for sludge from sewage and treatment plants.

Upon closing this land fill, Krødsherad municipality has chosen a variety of measures designed to reduce pollution to a minimum. The closure includes covering the land fill with a solid cover and installing terrain surfaces ensuring proper runoff management. A methane oxidation filter is installed to break down greenhouse gases from the organic waste in the land fill. Multi-consult estimates that the filter contributes to a reduction of approx. 5000 tonnes of yearly greenhouse gas emissions.

Krødsherad's choices helps minimize the impact of the closure on the local community.

Slettemoen land fill site,
Krødsherad municipality



Year of completion: 2019

Illustration photo



PROJECTS

Climate change adaptation

Individual climate change adaptation measures that either help ensure local communities are better equipped to withstand current and future changes to the climate or reduce physical climate risk.

7

NUMBER OF PROJECTS FINANCED, TOTAL

3

PROJECTS DISBURSED IN 2019

Green loans to climate change adaptation

Total outstanding, in 1000

96,521

These projects contribute to...

UN Sustainable Development Goals



Ensure healthy lives and promote well-being for all at all ages

Target 3.d) Strengthen the capacity of all countries, in particular developing countries, for early warning, risk reduction and management of national and global health risks.



Make cities inclusive, safe, resilient and sustainable

Target 11.5) By 2030, significantly reduce the number of deaths and the number of people affected and substantially decrease the direct economic losses relative to global gross domestic product caused by disasters, including water-related disasters, with a focus on protecting the poor and people in vulnerable situations.



Take urgent action to combat climate change and its impacts

Target 13.1) Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries.

The EU Environmental Objectives



2. Climate change adaptation

Climate change adaptation

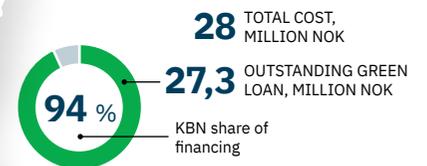
Borrower	Project name	Last disbursement	Project period (estimated)	Description	Total disbursed (1000 NOK)	Outstanding green loan (1000 NOK)	Total cost (1000 NOK)	KBN share of financing
Sel municipality	Flood protection for central Otta	2019	2020-2021	Flood protection measures designed to protect the centre in the event of flooding from the Lågen and Otta rivers, and flood protection measures are also being undertaken to purify flood waters and water from smaller tributaries to the main waterway.	4,000	4,000	25,000	16%
Bærum municipality	Opening of Dælibakken brook	2019	2018-2019	Opening of a brook that previously ran in a pipe. The measure increases the capacity of the brook to divert rainwater and creates a more attractive area in which to go for a walk. Read more on page 58.	27,300	26,220	28,000	94%
Oppdal municipality	Flood protection for a residential area	2019	2019-2020	Creating an intercepting swale to lead surface runoff away from a residential area. The measure addresses both meltwater and flood water from alpine resorts and is intended to protect the residential area from floodwater.	2,400	2,400	2,400	100%
Time municipality	Surface runoff management in Bryne	2018	2018-2022	Climate change adaptations in response to continual flooding of cellars and fields. Measures that have been implemented include developing a retention basin and replacing 70 tanks to separate surface water from wastewater.	50,000	48,333	210,000	23%
Longyearbyen Community Council	New spillway, Isdammen Lake	2017	2017	Construction of a new flood diversion system and elevation of dam crest and road. The new spillway will ensure a safe water supply and prevent flooding of nearby roads.	13,050	12,773	20,000	64%
Åfjord municipality	Landslide prevention, Norddal river	2017	2017	Landslide and flood prevention measures that protect the areas along the river from being hollowed out in the event of floods.	800	747	4,000	19%
Åknes/Tafjord Beredskap IKS	Typhoon/tsunami alert system	2017	2017	Seven siren masts to alert the population of Sykkylven of potential tsunamis caused by rockslides from unstable mountain terrain.	2,275	2,047	3,200	64%

CASE

Opening the Dæli stream contributes to more fish and less flooding

Finding and eliminating sources of pollution can be difficult when everything is laid in pipes underground. This was the case for the Dæli stream in Bærum municipality – previously an ideal stream for trout. The summer of 2020 Bærum will reopen the stream, making it a potential habitat for fish. This is not only beneficial for the biological diversity – it is also an important climate adaptation effort. Opening the stream works as a flood reducing measure; it reduces water speed and increases the capacity of redirecting water, naturally diverting runoff. The stream is located in an area with many hikers who will enjoy pleasant nature experiences in an otherwise urban area.

Dælibekken,
Bærum municipality



Estimated year of completion: 2020

Photo: Sindre Kinge Ltd, Flash studio

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