Kommuninvest Green Bonds Impact Report

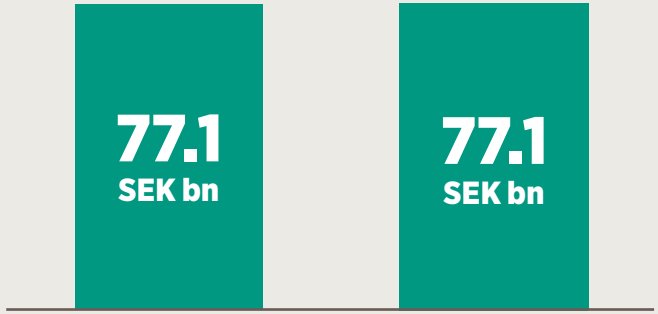
2023

KOMMUNINVEST

This report in brief

Report on 606 Swedish local government investment projects financed by Kommuninvest Green Bonds as of year-end 2023.

At 31 December 2023, Kommuninvest had disbursed a total of SEK 77.1 (65.3) billion, equivalent to USD 7.7/EUR 6.9 billion, in Green Loans to investment projects aligned with our Green Bond Framework. This report presents the expected annual impacts of these projects, the governance process to verify and select them and the impact reporting methodology we apply. Unless otherwise indicated, reported impact is Scope 1 and 2 according to the Greenhouse Gas Protocol. Impact is reported for the aggregated portfolio of eligible assets as of 31 December 2023, representing Kommuninvest's financed impact.



1) Total amount of Green Loans divided by total loan portfolio.
2) Total amount of Green Bonds outstanding divided by total amount of debt outstanding.

Annual greenhouse gas (GHG) emissions savings

668,485 tCO_2

612,497 tCO_2
avoided annual emissions[3]

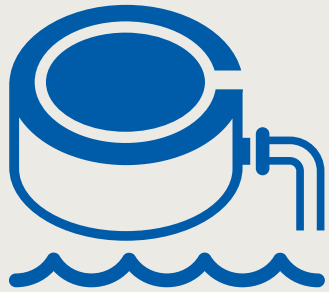
55,988 tCO_2
reduced annual emissions[4]

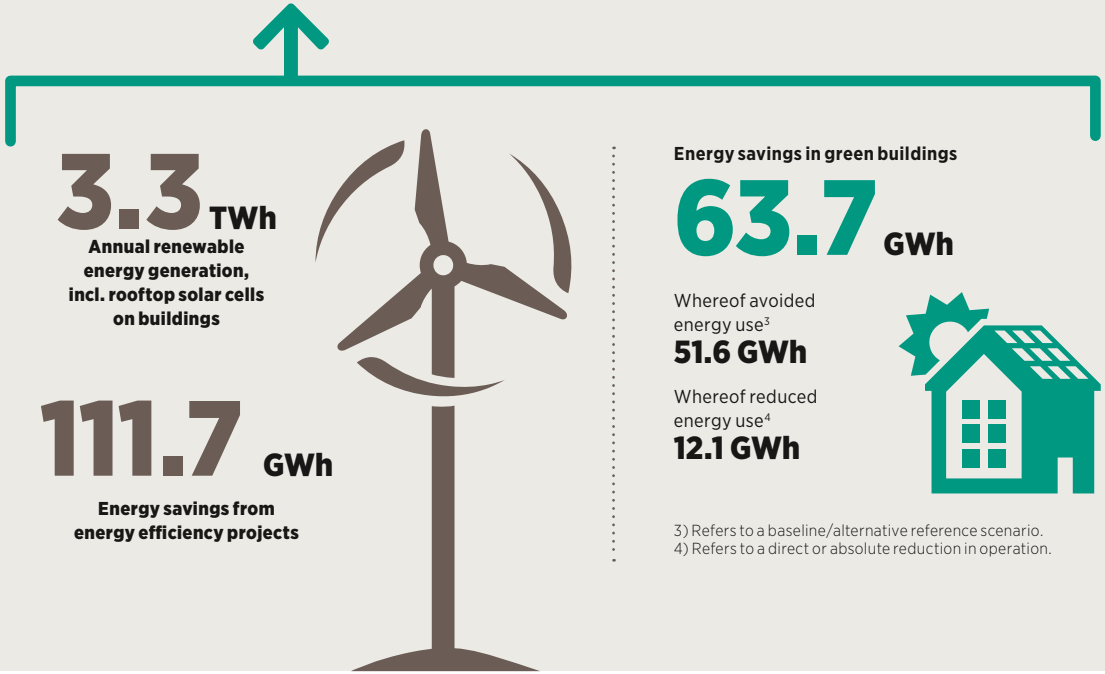
9.6 tCO_2 per SEK mn

Impact in tonnes CO_2 per SEK million in Green Loan disbursements

260,926

Increase in capacity, water and wastewater facilities, p.e.





3.3 TWh
Annual renewable energy generation, incl. rooftop solar cells on buildings

111.7 GWh
Energy savings from energy efficiency projects

Energy savings in green buildings

63.7 GWh

Whereof avoided energy use[3]
51.6 GWh

Whereof reduced energy use[4]
12.1 GWh

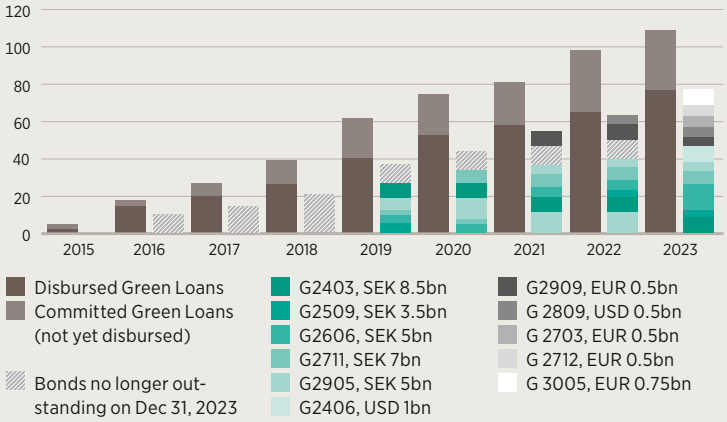
3) Refers to a baseline/alternative reference scenario.
4) Refers to a direct or absolute reduction in operation.

Executive Summary

as of 31 Dec 2023

Green Loans and Green Bonds

SEK bn

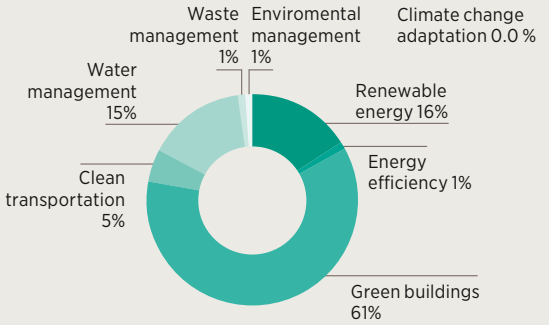


Basic information

Green Bond Frameworks applied	Report comprises projects financed under frameworks dated May 2021, March 2018, January 2016 and May 2015
Related Green Bond ISIN(s)	XS1968465572, XS2530407340, XS2351401109, XS2259127269, XS2402061530, XS2311395169, XS2725836097, XS2597673263, XS2676440048, XS2462606489, XS2625986836
External verifier of allocation report	KPMG
Reporting period	Reporting for calendar year 2023. Comprises all eligible projects financed and outstanding, from start of the green bonds programme in 2015 until year-end 2023.
Report publication date	April 11, 2024
Frequency of reporting	Annual
Next reporting planned for	March 2025
Reporting approach	Portfolio-based and project-by-project reporting

Green project portfolio distribution

based on disbursed amounts



CO_2 impact and Green indicators

based on outstanding disbursed amounts[1]

Project category	GHG emissions reduced/ avoided, tonnes CO_2e/year	Outstanding disbursed amounts to projects, SEK mn	Impact, tonnes CO_2e per SEK mn
Renewable energy	552,552	12,620	44
Green buildings	7,541	46,664	0.16
Energy efficiency	54,927	545	101
Clean transportation	43,966	4,206	10
Waste management	7,823	11,652	1
Water management	1,613	804	2
Climate change adaptation	n/a	0	n/a
Enviromental manegement	n/a	576	n/a
Total	**668,422**	**77,067**	
Disbursed amounts with CO_2 impact		**69,970**	
Impact, tonnes CO_2e per SEK mn (all projects)			**8.7**
Impact, tonnes CO_2e per SEK mn (projects with reported CO_2-impact)			**9.6**
Annual renewable energy generation, MWh			**3,288,081**
Annual energy reduced/avoided, MWh			**175,037**

1) Calculated impact in terms of CO_2 reduced or avoided is reported for projects where data is available. For Clean transportation, Waste management and Water management this is not always the case, affecting reported impact per SEKm for these project categories. Reported numbers represent both ex-ante estimates and ex-post outcomes, see reporting methodology on pages 48–51. Project-by-project-reporting is available in spreadsheet format at kommuninvest.se ==> For investors ==> Green Bonds ==> Impact Reporting.

Impact attributable to green bond investors[1]	**100%**
Whereof impact attributable to each Green Bond outstanding as of 31 Dec, 2023	
G2403: SEK 8.5bn, maturing 27 March, 2024	11%
G2509: SEK 3.5bn, maturing 27 March, 2024	5%
G2606: SEK 14bn, maturing 10 June, 2026	18%
G2711: SEK 7bn, maturing 26 November, 2027	9%
G2905: SEK 5bn, maturing 16 May, 2029	6%
G2406: USD 1bn, maturing 19 June, 2024	11%
G2809: USD 0.5 bn, maturing 29 September 2028	7%
G2703: EUR 0.5 bn, maturing 15 March 2027	7%
G2712: EUR 0.5 bn, maturing 8 December 2027	8%
G2909: EUR 0.5 bn, maturing 3 September 2029	7%
G3005: EUR 0.75 bn, maturing 23 May 2030	11%

1) Total amount of outstanding green bonds divided by total outstanding disbursed amounts to projects (in SEK).

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Cover page: Shutterstock

About Kommuninvest

Kommuninvest is a Swedish municipal cooperation set up in 1986 to provide cost-efficient and sustainable financing for local government investments in housing, infrastructure, schools, hospitals etc. The cooperation comprises 295 out of Sweden's 310 local governments, of which 280 municipalities and 15 regions. Kommuninvest is their largest lender and among the largest credit institutions in Sweden. At year-end 2023, total assets were SEK 569 billion (USD 57 billion[1]). The head office is located in Örebro.

1) USD/SEK= 10.0507 as of 31 Dec, 2023

About this report

This report was written and compiled by: **Björn Bergstrand,** Head of Sustainability, **Hanna Leife,** Sustainability Strategist, and **Alexandra Törnstrand,** Sustainability Analyst

Any errors, omissions or otherwise are our responsibility.Project impact reporting is based on data collected from financed projects during Q1-2024. The data has been reviewed by Kommuninvest however their accuracy has not been verified by neither Kommuninvest nor a third party. Climate impact calculations have been made by Kommuninvest, and their accuracy has not been verified by a third party. The information has been reviewed and approved for publication by the Kommuninvest Environmental Committee, whose members are presented on page 8.

Green Bonds summary

Green Bonds outstanding

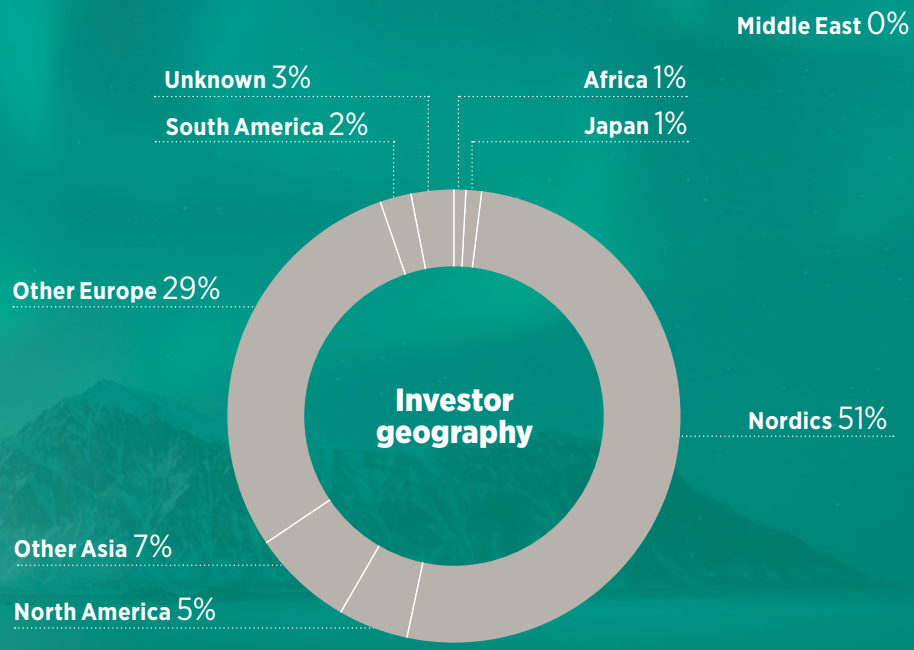
77.1

Billion SEK

Green Bond Ratio

14.0%

(share of funding)



Kommuninvest issued its first green bond in 2016 and has since evolved to become the largest Nordic issuer of green bonds. Demand for our issuances is broad-based, encompassing dedicated green investors across the globe.

At year-end 2023, the equivalent of SEK 77.1 billion was outstanding in eleven green bonds denominated in SEK, USD and EUR. The green bonds framework, most recently updated in 2021, allows financing in eight project categories. The framework has a second opinion from CICERO with an overall "medium green" shading, the opinion is available for download in the green bonds section of Kommuninvest's website.

Outstanding Green Bonds

Bond ID	ISIN	Maturity	Amount Issued
G2403	XS1968465572	27 March, 2024	SEK 8.5 bn
G2509	XS2530407340	1 September, 2025	SEK 3.5 bn
G2606	XS2351401109	10 June, 2026	SEK 14 bn
G2711	XS2259127269	26 November, 2027	SEK 7 bn
G2905	XS2402061530	16 May, 2029	SEK 5 bn
G2406	XS2311395169	20 June, 2024	USD 1 bn
G2809	XS2725836097	29 September, 2028	USD 500 mn
G2703	XS2597673263	15 March, 2027	EUR 500 mn
G2712	XS2676440048	8 December, 2027	EUR 500 mn
G2909	XS2462606489	3 September, 2029	EUR 500 mn
G3005	XS2625986836	23 May, 2030	EUR 750 mn

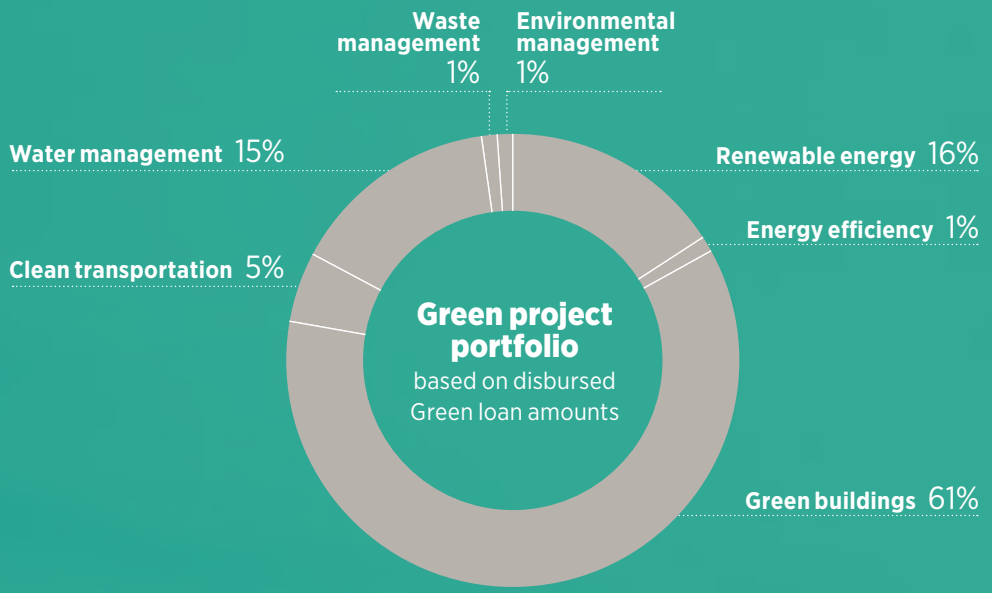
Green Loans summary

Green Loans
(disbursed and outstanding)

77.1
Billion SEK

Green Loan Ratio
(share of lending)

15.1%

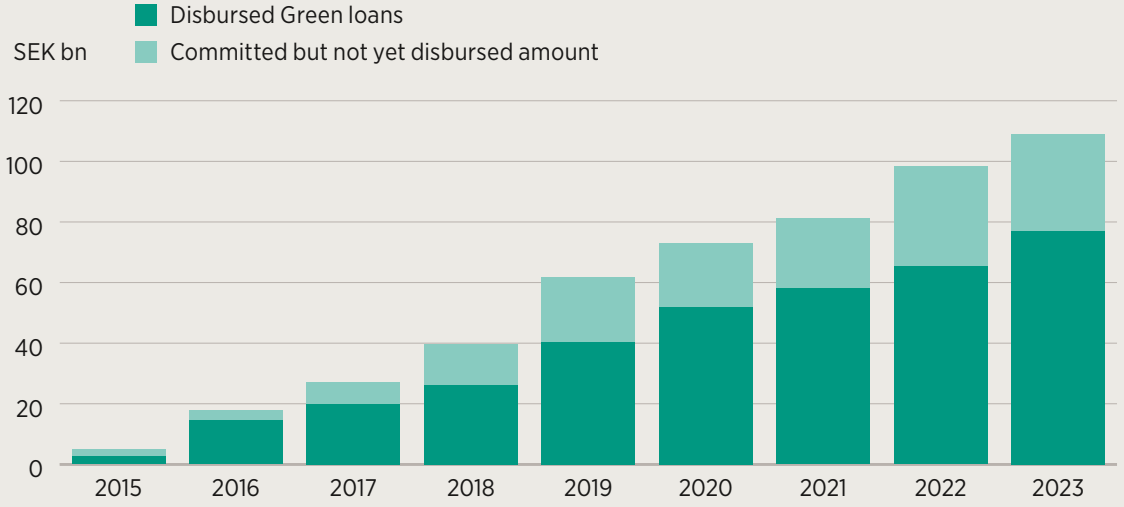


Kommuninvest began offering reduced-rate Green Loans in 2015, for investments that contribute to addressing local and regional climate and environmental objectives. The Green Loans are financed by green bonds.

The demand for Green Loans has increased substantially since launch, outpacing the general borrowing trend amongst Swedish municipalities and regions. In 2023, Kommuninvest's Green Loan portfolio increased by SEK 11.8 billion to a total of SEK 77.1 billion (based on disbursed amounts).

Growth of the Green Loan portfolio accounted for more than 30 percent of Kommuninvest's total lending growth. As a result, the Green Loan Ratio increased to 15.1 (13.6) percent.

Green loans 2015–2023



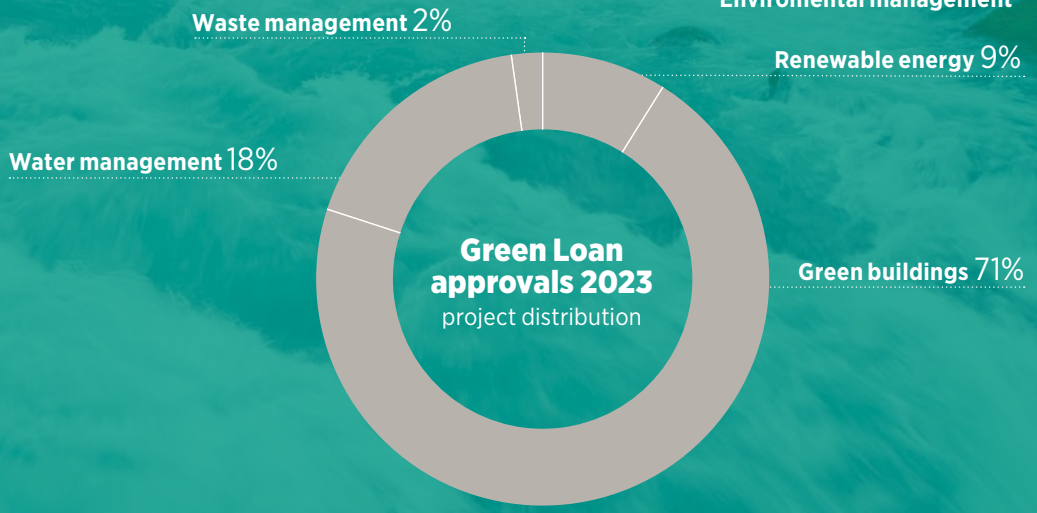
2023 in review

New Green Loan approvals

85

Green Bonds issued

6



Kommuninvest's green financing framework has grown every year since inception. In 2023, 85 (51) investment projects were awarded Green Loan status and total Green Loan disbursements increased by 18 percent to SEK 77.1 (65.3) billion.

Six green bonds were issued during the year, including two SEK bonds of 5 and 4 billion respectively, one USD 500 million bond and three euro-denominated green bonds, each one for EUR 500 million.

The process of gradually adapting Green Loan criteria to the EU Taxonomy continued during the year, see fact box, marked by a public consultation during October-November 2023 on proposed new criteria. Kommuninvest expects to launch an updated green bonds framework in 2024.

Addressing the EU Taxonomy in Green Loans criteria

Since 2022, Kommuninvest has engaged in a comprehensive review of its Green Loans criteria. Based on the recommendations from its Green Bonds Environmental Committee, the aim is to undertake a gradual/partial EU Taxonomy adaptation of the framework. The objective for the first update is for all project categories where the Committee has deemed it feasible and reasonable to meet the Taxonomy eligibility criteria for "significant contribution" to at least one of the EU's six environmental objectives. Following a public consultation during 2023, which garnered formal responses from more than 50 stakeholders, Kommuninvest is engaged in updating its green bonds framework. At the time of writing, Kommuninvest has communicated an ambition to launch the update during Q2 2024, entering into effect from Q3 2024.

Towards a new phase

Now in its 10th year, Kommuninvest's Green Loan programme continues to support the green transition in Swedish cities and regions. More than 40 percent of Swedes live in cities aiming for net-zero by 2030.

From its start in 2015, with a Green Loan for a wind farm development in northern Sweden, Kommuninvest's green financing programme has grown to become one of the largest in the Nordic countries.

It has also grown to represent an increasingly larger share of Kommuninvest's overall loan portfolio, accounting for 15 percent of all outstanding loans at year-end 2023. Over 600 municipal investment projects across Sweden were financed green.

In a further sign of the attractiveness of green financing, demand for Kommuninvest's Green Loans has continued to grow at a more rapid pace than for its traditional loan products.

Progressive climate and environmental work undertaken at the local and regional level explains why so many Swedish cities have set net zero climate objectives already for 2030. Kommuninvest, which represent the whole local government sector, has aligned its own climate objective with that of Sweden's, aiming for net zero financed emissions by 2045.

As members of the Kommuninvest Green Bonds Environmental Committee it is our responsibility to ensure that the green bonds framework is fit for purpose. We were therefore pleased to note that the public consultation held in late 2023, on proposed framework amendments, met such widespread interest and support.

The adaptation of the framework to the EU Taxonomy, to be undertaken during 2024, is a milestone for the green programme, intended to further support Kommuninvest's members and client in their transition journey and, to investors, reaffirm Kommuninvest's commitment to robustness and good governance in green financing.

It is also satisfying to see that Kommuninvest, together with a group of other Nordic public sector issuers, in early 2024 launched updated impact reporting recommendations, through the Nordic Position Paper initiative. Ensuring transparency and credible methodology in green bonds reporting is key to maintaining trust from investors.

We place strong emphasis on the climate work undertaken on the ground, and are proud of Swedish achievements. This impact report includes a number of highlights from across our country and we invite you to take part of the case studies dispersed in the report.

Finally, a word of thanks to the green bond investor community, for your support of Swedish transition work and of Kommuninvest's issuances in green format.

The Kommuninvest Green Bonds Environmental Committee
Hanna Ryman, Municipality of Örebro; Andreas Hagnell, Swedish Association of Local Authorities and Regions; Susanne Arneborg, City of Borås (chairperson); Lisa Järner, City of Mölndal; Charlotte Billgren, Tekniska verken i Linköping AB.

Net-zero by 2045

Kommuninvest's sustainable finance solutions are intended to promote efficient use of public resources, financial stability and the local government sector's work with reaching net-zero climate objectives.

Through its financing of local government investments, Kommuninvest contributes to sustainable welfare in Sweden's municipalities and regions. A strong ownership structure, supported by a joint and several guarantee provided by its owners, the 295 municipalities and regions that are members of Kommuninvest Cooperative Society, allows Kommuninvest to fund its operations in a cost-efficient and stable manner. The members' broad mandate and borrowing needs, in combination with Kommuninvest's position as the leading provider of members' funding, generate economies of scale.

Tailored sustainable finance products such as Green Loans provides targeted support of the sustainability work undertaken by Kommuninvest's members. Since the launch in 2015, Kommuninvest's green financing programme has been widely recognised. In 2022, the programme received the Swedish environmental objectives award, Miljömålspriset, for its contribution to Sweden's climate change mitigation objective.

Management of ESG risk in lending operations

Kommuninvest's approach to managing ESG risk is increasingly integrated into credit processes. Regarding environmental and climate risks, Kommuninvest has developed a methodology for identifying and defining the factors of greatest potential financial impact on borrowers, addressing physical risks as well as and transition risks. The first iteration of the model, developed during 2022–2023, includes four factors including key performance indicators that are integrated into the credit assessment and monitoring processes: risks of flooding, landslide or erosion; water contamination or shortage; negative impact on water supply; GHG emissions. Work is on-going regarding social risks associated with Kommuninvest's borrowers and a first iteration of a methodology is expected to be implemented into the credit assessment and monitoring processes during 2024.

Kommuninvest's climate goal

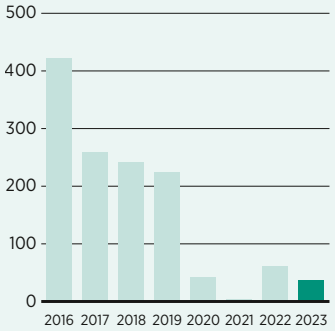
In 2022, we established our climate goal: to be a tool and support for the municipal and regional sector to reach Sweden's goal of zero net emissions of greenhouse gases into the atmosphere by the year 2045. The goal has been formalized in Kommuninvest's Climate Plan.

The target means that the municipal and regional operations financed by Kommuninvest shall have zero net greenhouse gas emissions by 2045. To monitor progress in the desired direction, work is underway to establish a baseline for financed emissions and, subsequently, a financed emissions reductions pathway aligned with established financial market practices. The focus is initially on the lending portfolio because that part of the balance sheet has the clearest connection to the GHG emissions that we finance.

Reductions in own operations

In addition to the measures being implemented to help decrease indirect emissions through the financial operations, continuously decreasing Kommuninvest's direct climate footprint remains a priority. In focus are the office operations, which are mainly conducted in a building that we own, and business travel.

CO_2 emissions from business travel, tonnes



Source: Big Travel, until 2020 with adjustment by Kommuninvest for so-called RFI factor regarding the high altitude effects of air travel.

Business travel historically formed a significant part of Kommuninvest's total climate impact. Following the Corona pandemic, when business travel effectively ceased altogehter, a certain normalisation has occurred over the past two years, however at significantly lower levels than before.

We monitor and report on direct emissions annually. For 2023, we reported for the first time direct emissions below 1 tonne CO_2e per employee and below 100 tonnes CO_2e for the operation as a whole. Over a five-year-period, direct emissions have been more than halved.

Contributing factors are related to measures undertaken in the office premises, including adding renewable energy capacity and switching to district cooling to reduce electricity use, as well as a transformation in business travel, with an increased use of digital meetings and train travel.

The Sustainable Development Goals (the 2030 Agenda) in municipalities and regions

The 2030 Agenda has had a major impact in many Swedish municipalities and regions, including by integrating the Agenda into target-setting and budgetary processes, monitoring systems, surveys and strategic plans. Surveys indicate increasingly mature integration of the Agenda in local government governance processes. All in all, work performed at the local and regional level is an important contribution to the Agenda's impact at the national and international level.


Environmental and climate work

Find out more in our Sustainability Report 2023, see Annual Report 2023 page 12–22.

SELECTED ESG INDICATORS – KOMMUNINVEST GROUP

	Unit	2023	2022	2021
Loan volumes – sustainable finance				
Total lending to municipalities, regions, municipal companies, etc.	SEK, million	508,802.2	470,675.8	460,650.3
Share of the sector's financing	%	59.6	59.3	57.9
Green Loans, volume outstanding, disbursed	SEK, million	79,422	66,428	60,209
Social Sustainability Loans, volume outstanding, committed (disbursed) volume	SEK, million	6,718 (2,135)	1,746 (1,001)	614 (207)
Energy consumption in own operations				
Total energy consumption (in buildings)[1]	kWh	516,958	536,811	561,117
Total CO_2 impact of energy consumption (in buildings)	Tonnes	59	95	119
Change in energy consumption, compared with the preceding year	%	-3.7	-4.3	8.2
Business travel				
Total business travel[2]	Km	388,678	494,654	77,515
Rail travel in Sweden	Km	194,386	203,382	44,504
Total CO_2 emissions from business travel	Tonnes	38	61	5
Total climate footprint – own operations				
Total climate footprint of the operations, CO_2e	Tonnes	97	156	124
Total climate footprint per employee, CO_2e	Tonnes	0.9	1.6	1.2
Employee statistics				
Total number of employees, including those in part-time and probationary employment[3]	Number	109	105	118
Proportion of women/men – total	%	42/58	40/60	41/59
Proportion of women/men – all managers	%	53/47	36/64	38/62
Proportion of women/men – Executive Management Team	%	56/44	43/57	43/57
Personnel turnover	%	12	15	9
Participation in employee survey	%	92	96	89
Proportion of employees with university education	%	93	92	89
Proportion of employees who had development interviews	%	100	100	100
Proportion of employees who have undergone sustainability training	%	95	87	83

1) Gross solar production: 21,621 kWh (reading on 11 January 2024) of which 20,942 kWh was used for the building's own energy consumption, while 679 kWh was delivered to the grid.

2) Data for 2021 has been corrected from 76,865 to 77,515 due to previous incorrect reading.

3) Number of employees refers to the total headcount, including full and part-time employees, those on parental leave and temporary employees. The total number of permanent and probationary employees was 104 at the end of 2023.

Striving for robust and transparent reporting

Project evaluation and selection
Green Loan applications are reviewed and finally approved by the Kommuninvest Green Bonds Environmental Committee (the Committee), an advisory committee comprising Swedish local government climate specialists.

As the first step, investment projects are identified, verified and selected by the environmental functions and treasury departments in Kommuninvest's member municipalities and regions. Applications are then screened by Kommuninvest's Lending department. On at least a quarterly basis, projects are reviewed and approved or rejected by consensus vote in the Committee.

The Committee, which is elected by the Board of Kommuninvest, consists of expert officials from at least three member municipalities and regions as well as experts from other relevant public sector organisations or academia/non-governmental organizations.

Annual external review
Kommuninvest regularly publishes an external review regarding its Green Bonds Framework, in line with the recommendations of the Green Bond Principles. The report, performed by an external part, includes review measures on the allocation of green bond proceeds to eligible investment projects. Green Bond proceeds and disbursements to Green Loans are tracked by Kommuninvest according to internal instructions and leveraging amongst others a dedicated green register.

Alignment with the SDGs and EU objectives
All projects financed by Kommuninvest Green Loans target, to a varying degree, different Sustainable Development Goals and EU environmental objectives. An overview of the applicable goals and objectives relevant to the project categories of the framework is provided in the Project portfolio summary on page 17.

EU Taxonomy addressed in next framework update
In 2022, Kommuninvest resolved to initiate work to gradually/partially adapt its green bonds framework to the EU Taxonomy. A public consultation on new criteria for Green Loans was launched in 2023. Work

About this report

- The report outlines the allocation of Green Bond proceeds to Green Loans that finance eligible green investment projects in Swedish municipalities and regions, including their expected or actual impact.
- Each investment project has been selected, reviewed and approved as described in the section on project evaluation and selection below. The complete green bonds framework, set up to align with the ICMA Green Bond Principles, is available online.
- The report covers green investment projects that, to the best of Kommuninvest's knowledge, meet the eligibility criteria applicable upon original inclusion in the portfolio of eligible projects. Projects that no longer meet the eligibility criteria have been excluded from the reporting, see section on portfolio exclusions below.
- Kommuninvest reports on a portfolio basis in Swedish kronor (SEK) based on nominal amounts. Green Bonds issued in EUR and USD are converted to SEK using the F/X rate as per the date of issuance.
- Kommuninvest reports impact based on the financed share of the project's total investment cost. Impacts are based on outstanding disbursed amounts to projects (net of redemptions).
- Reporting is undertaken in accordance with recommendations outlined in the Nordic Public Sector Issuers: Position Paper on Green Bonds Impact Reporting.

is underway to launch an updated framework during 2024, with a focus on the EU Taxonomy substantial contribution criteria. There are currently no plans to issue green bonds aligned with the EU Green Bonds Standard.

Share of financing and refinancing

Kommuninvest deploys a bottom-up approach to green financing, whereby eligible investment projects are identified and pre-financed first, and Green Bonds are issued as the second step.

This approach, we believe, has a number of distinct advantages:

i) It enables Kommuninvest to manage its green framework in a conservative manner, with the size of the portfolio of approved Eligible Projects guiding the volume of Green Bonds issuance. As a rule, Kommuninvest aims for aggregated Green Bond Proceeds not to exceed total disbursements to Green Loans.

ii) It provides investors with transparency regarding which Eligible Projects the Green Bonds will finance, including the composition of green assets, as well as assurance that Green Bond proceeds will be matched to actual Green Loan disbursements.

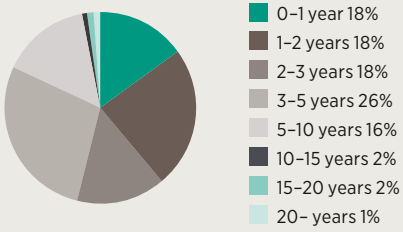
We define new financing as the committed volume of Green Loans during the reporting year. Refinancing is defined as the committed volume of Green Loans before the reporting year.

The table below provides historical data on the share of financing and refinancing in the portfolio. For comparison, the table also includes the outcome of calculations based on allocated amounts, as advocated by the EU Green Bond Standard (EU GBS).

Portfolio exclusions and other amendments

As part of the annual impact reporting process, we may identify investment projects which no longer comply with framework requirements. If the financed project no longer meets the eligibility criteria, or for other reasons loses its eligibility, the loan is initially excluded from the pool of green loans, pending investigation and rectification by the client. If no rectification is expected or undertaken, the loan loses its Green Loan label. We also consolidate those Green Loans

Maturity profile Green Loans
as of 31 Dec 2023



Share of financing and refinancing

Status per end of reporting year	2019	2020	2021	2022	2023
Kommuninvest Green Bonds Framework					
Committed amount in Green Loans, SEK billion	61,8	74,7	81,2	98,6	108,9
Disbursed amount in Green Loans, SEK billion	40,3	52,5	58,1	65,3	77,1
Share of financing and refinancing					
Share of financing (committed amount[1] to projects during the year of reporting)	36%	17%	8%	18%	9%
Share of refinancing (committed amount[1] to projects before the year of reporting)	64%	83%	92%	82%	91%
Comparison: Reporting following the EU GBS approach					
Share of financing (allocated amount to projects financed after bond issuance)[2]	0%	0%	0%	0%	0%
Share of refinancing (allocated amount to projects financed before bond issuance)	100%	100%	100%	100%	100%

1) Committed amount is chosen over allocated/disbursed amount, as the committed amount captures disbursements that will be made in the future.

2) Share of financing will always be 0%, given Kommuninvest's Green Bonds issuance model, whereby green bonds are issued in relation to the total volume of outstanding disbursed Green Loans.

that correspond to the same physical investment project.

The above affects the number of reported projects, the disbursed Green Loan volume and the Green Loan Ratio. As a result, reported such values in this report differ from those in our annual report. This report totals 606 projects at year-end 2023, compared with 645 in the annual report.

Look-back period/allocation period

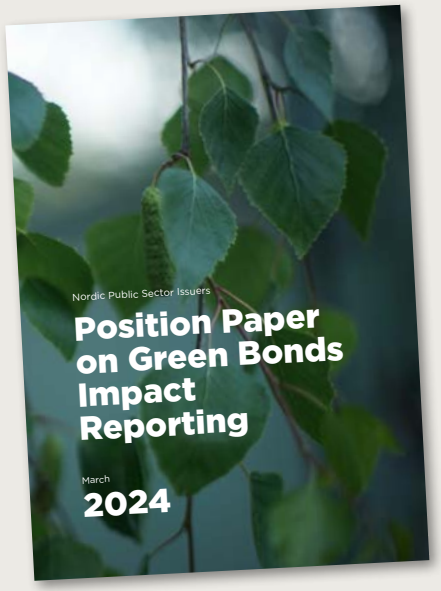
Under Swedish law, local governments are solely allowed to borrow external funds for investments. Kommuninvest deems such investments to be capital expenditures. Kommuninvest does not deploy a look-back period for capital expenditures.

For conservative purposes, and in accordance with Kommuninvest's internal instructions, Kommuninvest manages green bond proceeds with an ambition that the total volume of disbursed Green Loans always exceeds the total volume of Green Bonds outstanding. Any shortfall should be rectified within 12 months of issuance.

Framework age limit

Kommuninvest monitors ongoing developments in the sustainable finance market and continually seeks to have a framework adapted to accepted market practice. Therefore, the framework is regularly updated, as has been the case three times since 2015. However, Kommuninvest does not deploy a strict limit as regards the age of the framework.

Key reporting methodology



Kommuninvest reports impact from financed green investment projects based on jointly established Nordic guidelines: the Nordic Position Paper on Green Bonds Impact Reporting. These guidelines build on and complement international recommendations.

The main reporting principles are introduced below. Please see pages 48–57 for further information about reporting methodology and baseline choices.

- A project's impact is quantified based on the share of the investment cost that has been financed by Kommuninvest and on Green Loans disbursed and outstanding.
- Calculations are based on projected (ex-ante) values; unless actual outcomes (ex-post) are available.
- Projects which no longer comply with the requirements of the Green Bonds framework are excluded from the reporting.
- CO_2 emissions and emissions reductions are reported as scopes 1 and 2 as defined by the Greenhouse Gas Protocol, ie. direct emissions from projects and indirect emissions from the production of electricity and/or district heating.
- As of the 2023 reporting year, greenhouse gas emissions savings from electrical energy production and electrical energy savings are calculated using an emission factor for electricity production in mainland EU and Norway of 191 g CO_2/kWh (previously 315 g CO_2/kWh), reflecting revised baseline emission factors in the 2024 edition of the Position Paper.
- We report impact from activities financed by green bonds on a yearly basis.

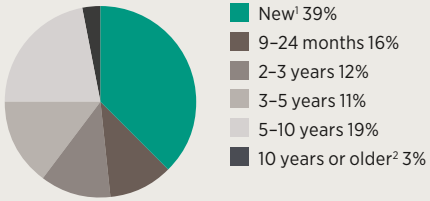
Physical age of financed projects

Whilst the physical age of financed projects do not form part of eligibility criteria for Green Loans, Kommuninvest reports the age distribution of the investment projects that form part of the Green Loans portfolio. As at year-end 2023, 39 percent of the portfolio was comprised of investment projects that were deemed as new, ie. that were either planned, on-going or a maximum of nine months had passed since their completion. A further 28 percent of the portfolio were projects where 9–36 months had passed since completion.

Age distribution of Eligible Projects

as of 31 Dec 2023

Based on project completion and committed amounts



1) Planned, on-going or a maximum of nine months has passed since completion

2) Adjusted to include projects where project completion date refers to date of transaction (#12, #51, #144 – acquisition finance for hydro power stations).

Major framework developments

The green bonds framework applicable as per the cut-off-date for the 2023 impact report was established in 2021. Eligible projects that form part of the reporting have been included in the portfolio subject to the respective framework eligibility criteria established in the original 2015/2016 version as well as the 2018 and 2021 updates.

The graph and table provide further details regarding the composition of the current Green Loans portfolio as well as the key changes introduced in the 2018 and 2021 framework, which mostly concerned the Green Buildings project category of the framework.

Key framework updates, by framework vintage (FV)

Major changes introduced in 2021 and 2018 updates compared with original 2015/2016 version

Green buildings	FV 2015/2016	FV 2018	FV 2021
Residential buildings[1]	-25% (vs. BBR 21)	-15% (vs. BBR 25)	-20% (vs. BBR 29)
Non-residential buildings[1]	-25% (vs. BBR 21)	-20% (vs. BBR 25)	-20% (vs. BBR 29)
Major renovations[2]	-35%	-30%	-30%
Energy efficiency measures[2]	-25%	-30%	-30%
Measures to reduce life-cycle impact[3]			Yes
Calculation of embedded impact[3]			Yes
Renewable energy			
Hydropower, new financing[4]			Max. 10 MW[4]

1) Requirement for reduction in energy use/primary energy demand, in relation to the specified version of the Swedish Building Regulation, BBR.

2) Requirement for reduction in energy use/primary energy demand.

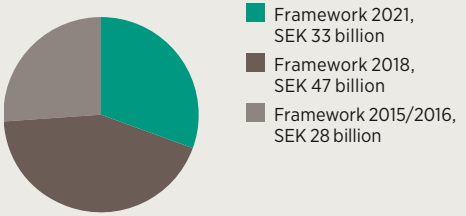
3) As of 2022, requirement to implement both life-cycle-oriented climate measures in the project, as a minimum for the building frame, and to calculate embedded impact from the construction phase.

4) New financing restricted to small-scale hydropower (max. 10 MW installed capacity). New financing also eligible for upgrades to existing plants in excess 10 MW, providing no increase of water reservoir or that project is for pumped-storage hydroelectricity. Refinancing of existing hydropower still deemed eligible.

Green Loan portfolio by framework vintage

as of 31 Dec 2023

Based on committed amounts



KOMMUNINVEST GREEN TEAM

Alexandra Törnstrand,
Sustainability Analyst

Björn Bergstrand,
Head of Sustainability

Daniel Nykvist,
Deputy Head of Advisory

David Ljung,
Head of Lending & Advisory

The Kommuninvest Green Bonds and Green Loans Programme engages numerous staff across company functions, including lending, debt management, investor relations, sustainability, communications, IT, and research.

The smaller group of people presented here are more deeply involved in the Programme. The Programme is co-led by David Ljung, Head of Lending and Björn Bergstrand, Head of Sustainability.

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Patrik Stenman,
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Tobias Landström,
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Project categories

Kommuninvest Green Bonds finance investment projects in Sweden undertaken by our member municipalities and regions. We finance projects within eight areas of investment and subject to meeting pre-determined sustainability criteria.

The following pages present an overview of the green project categories and their impact, as well as lists of the approved projects which were approved during 2023. The complete project-by-project reporting, covering all investment projects in the Green Loan portfolio as of year-end 2023, is available at the Green Bonds section of Kommuninvests website, kommuninvest.se

All projects must

Promote the transition to a low-carbon and climate-resilient society

- ✓ Be part of the systematic environmental work in the applicant municipality or region
- ✓ Be related to Sweden's national environmental objectives, or to regional environmental goals
- ✓ Target either mitigation of climate change, adaptation to climate change, or be a project related to environmental management in other areas than climate change

Project portfolio summary

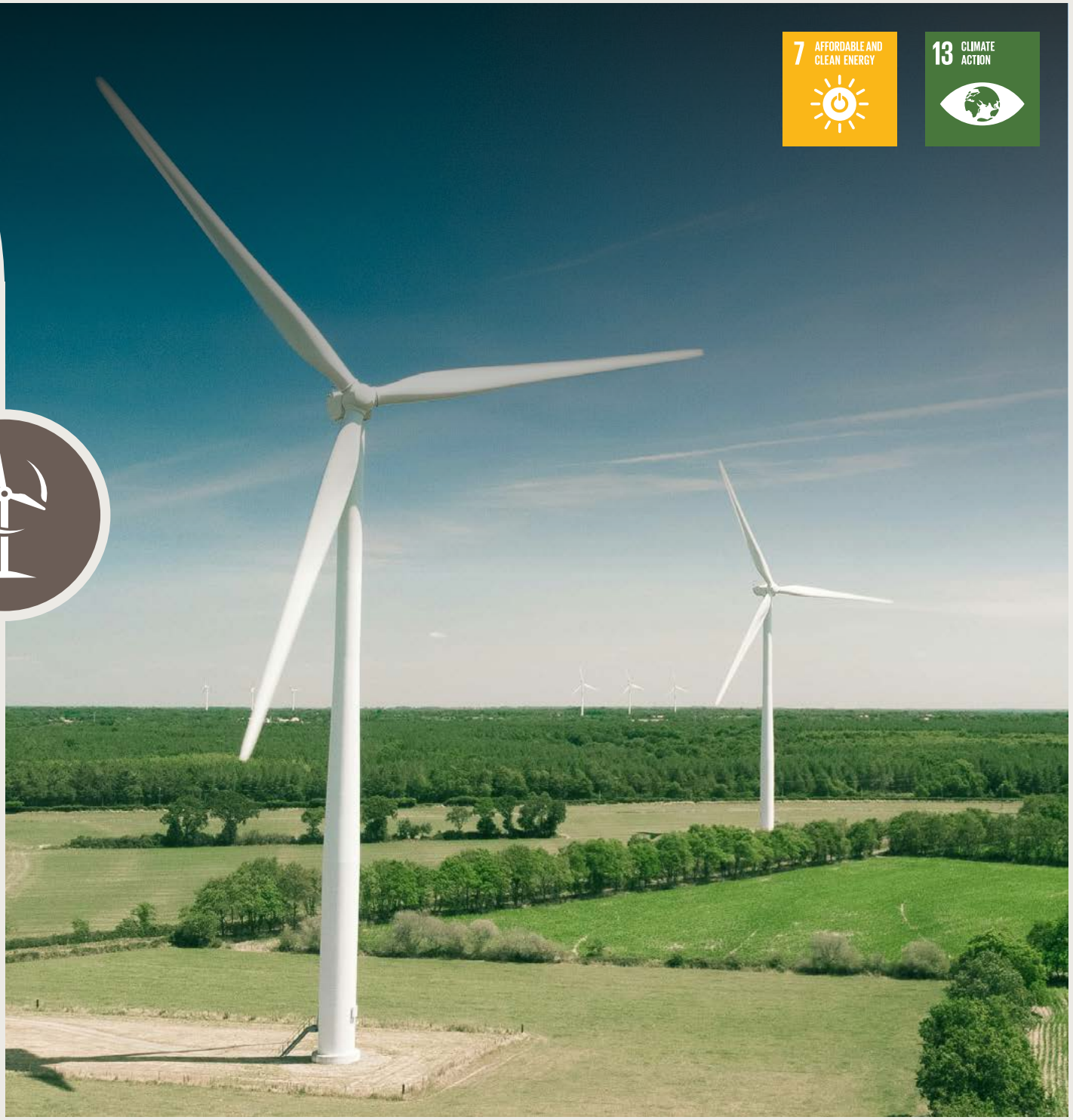
Project category	Sustainable Development Goals	EU Environmental Objectives	Total # projects	New projects in 2023	Disbursed Green Loans, SEK mn	Renewable energy production (MWh/year)	Energy reduced and avoided (MWh/year)[1]	GHG emissions reduced/avoided, tonnes CO_2e/year[1]	Committed Green Loans, SEK million	Disbursed Green Loans, SEK million
Renewable energy		Climate change mitigation	81	13	12,620	3,280,843	n/a	552,552	15,225	12,620
Energy efficiency		Climate change mitigation	11	1	545	n/a	111,721	54,927	677	545
Green buildings		Climate change mitigation	365	58	46,664	7,238	63,316	7,541	62,352	46,664
Water management[1/2]		Sustainable use and protection of water and marine resources	97	11	11,652	13,977	n/a	1,613	20,094	11,652
Clean transportation		Climate change mitigation	21	1	4,206	n/a	n/a	43,966	8,970	4,206
Waste management		Transition to a circular economy, Pollution prevetion and control	21	1	804	n/a	n/a	7,823	912	804
Climate change adaptation		Climate change adaptation	1	0	0	n/a	n/a	n/a	16	0
Environmental management		Protection and restoration of biodiversity and ecosystems	9	0	576	n/a	n/a	n/a	599	576
Total			**606**	**85**	**77,067**	**3,302,058**	**175,037**	**668,422**	**108,844**	**77,067**

1) Renewable Energy Production refers to the production of energy and biogas after investment, regardless of previous production

2) GHG emissions reduced/avoided refers to that energy production in these projects replaces the production of district heating and that biogas production in th projects replaces diesel fuels

Renewable energy

Investments in this category aim to reap the energy potential of the wind, the sun, the ground, the sea, bio-materials and other renewable energy carriers, and to replace non-sustainable energy sources. Projects include production and distribution of renewable energy including wind, wave, solar, hydro, geothermal, bioenergy, biogas and excess heat.



Green loans to Renewable energy

Total number of projects:	**81**
Total amounts disbursed and outstanding:	**12,620** MSEK

Estimated annual impact of green loans[1]

Estimated installed effect (total):	**141,423 MW**
Estimated annual energy production:	**3,280,843 MWh**
Greenhouse gas emissions avoided, per year:	**552,552 tonnes CO_2e**

1) Refers to the Green Loan share of project impacts. The impact attributable to Green Bond investors is presented on page 3.

Renewable energy: Projects approved in 2023

Borrower	Project ID	Project description	Construction period ending (Year)	Kommuninvest share of financing, %	Committed Amount, SEK million (MSEK)	Disbursed Amount, SEK million (MSEK)	Estimated impact, Kommuninvest share	
							Renewable energy generation, MWh	GHG-emissions reduced/avoided tCO_2e/year
Skövde Municipality	1251	Installation of solar panels on existing properties to boost municipal renewable energy production and reduce the climate and environmental impact of energy consumption.	2021-11-30	100%	9	9	706	135
Aktiebolaget Borlänge Energi	1253	Following Kvarnsvedens Pappersbruk's closure and site demolition, a battery factory will emerge. Borlänge Energi, already utilizing flue gas condensation for heat recovery, plans to acquire the mill's bio-boilers. This move prevents 100 GWh of oil burning by replacing lost heat supply, ensuring heat for the new battery factory and expanding the district heating network.	2023-09-30	86%	565	500	215,517	22,248
Oxelösunds Municipality	1267	With the district heating pipeline, Nyköping's existing combined heat and power plant can be used to produce district heating, avoiding the need for a hot water plant that doesn't generate also electricity. The pipeline is also adapted to receive excess heat from SSAB in Oxelösund.	2026-02-01	0%	120	0	0	0
Arjeplogs Municipality	1273	New small solid-fuel boiler eliminates summer oil use, saving 250 m^3 of fuel oil. Electrostatic precipitator reduces dust emissions by 60%, saving 2 tons annually.	2023-10-31	31%	10	4	985	267
Arvidsjaurs Energi AB	1286	Phasing out peat as fuel for heat production, shifting to biofuel as the primary source. Key benefits include reduced emissions and decreased chemical use during combustion.	2023-01-01	98%	10	10	43,120	16,413
Krambo AB	1292	Installation of solar panels for environmentally friendly electricity production and consumption.	2024-04-29	0%	1.5	0	0	0
Krambo AB	1293	Installation of solar panels for environmentally friendly electricity production and consumption.	2024-04-29	0%	1.5	0	0	0
Mölndals Stad	1324	Building constructed for daily activities promotes social sustainability by providing a fulfilling workplace for people with disabilities. The project application solely covers the installation of solar energy and geothermal heating.	2024-12-30	0%	1	0	0	0
Falköpings Municipality	1325	Falköping's biogas facility turns food waste and agricultural residues into biogas, supporting a circular economy and sustainable agriculture with biofertilizer as a byproduct.	2021-12-31	0%	37	0	0	0
Kungälvs Municipality	1328	Kungälv Energi aims to provide secure, fossil-free, sustainable, and cost-effective district heating, contributing to municipal profits and aligning with strategic goals. The project ensures heating remains renewable, supporting urban growth and reducing reliance on fossil electricity.	2024-06-14	43%	188	80	18,085	110

Complete project-by-project-reporting in spreadsheet format is available in the impact reporting section for Green Bonds at kommuninvest.se

Renewable energy: Projects approved in 2023

Aktiebolaget Sjöbohem	1330	The project integrates solar and wind power across multiple properties over several years, partially converting energy to hydrogen for the vehicle fleet and electricity generation.	2024-12-31	0%	38	0	0	0
Västra Mälardalens Energi och Miljö AB	1334	New bio-based solid fuel boiler enhances energy efficiency and reduces CO_2 emissions by approximatly 11,000 tons/year, significantly lowering reserve fuel use and municipal water consumption.	2025-01-31	27%	150	63	21,856	3,348
Kraftstaden Fastigheter Trollhättan AB	1358	During facade renovation, a solar panel system was installed, providing renewable, flowing, and locally produced energy.	2023-09-30	0%	2,2	0	0	0

Complete project-by-project-reporting in spreadsheet format is available in the impact reporting section for Green Bonds at kommuninvest.se

Energy efficiency

Projects within this category reduce the energy requirements in existing (predominantly fossil-free) energy systems and phase out the use of fossil energy sources. Projects may be related to district heating/cooling, electricity grids/smart grids, energy recovery and storage.

Green loans to energy efficiency

Total number of projects:	**11**
Total amounts disbursed and outstanding:	**545** MSEK

Estimated annual impact of Green Loans[1]

Total energy savings:	**111,721 MWh**
– whereof Avoided energy use[2]	n.a.
– whereof Reduced energy use[3]	111,721 MWh
Greenhouse gas emissions reduced, per year:	**54,927 tonnes CO_2e**

1) Refers to the Green Loan share of project impacts. The impact attributable to Green Bond investors is presented on page 3.

2) Avoided energy use refers to a baseline/alternative reference scenario. Net value, inclusive of energy production in green buildings.

3) Reduced energy use refers to a direct or absolute reduction in operation.

Energy efficiency: Projects approved in 2023

Borrower	Project ID	Project description	Construction period ending (Year)	Kommuninvest share of financing, %	Committed Amount, SEK million (MSEK)	Disbursed Amount, SEK million (MSEK)	Estimated impact, Kommuninvest share	
							Total energy savings, MWh	GHG-emissions reduced/avoided tCO_2e/year
Ockelbo Municipality	1352	Replacement of the municipality's current street and road lighting fixtures with LED, totaling 2,750 units.	2024-12-31	0%	20	0	0	0

Complete project-by-project-reporting in spreadsheet format is available in the impact reporting section for Green Bonds at kommuninvest.se

CASE: ENERGY EFFICIENCY

Switching to LED for street lighting

As part of its strategic environmental programme for 2022–2026, the municipality of Ockelbo municipality is carrying out a comprehensive modernization of its road and street lighting. By replacing the current luminaires with 2,750 LED units, the municipality expects to reduce energy use by more than 80 percent, marking an important contribution to local sustainability objectives.

The procurement has focused on high-quality LED lighting to maximize light output and energy savings, but also introduces digital lighting control to optimize the provision of lighting according to the needs. Overall, both the municipality's energy costs and total carbon footprint can be reduced. The municipality also underlines its commitment to a circular economy through recycling of the replaced fixtures. Through the project, Ockelbo municipality contributes to a brighter, safer and more energy-efficient future for its residents.

Client: Ockelbo municipality

Project category:	**Energy efficiency**
Objectives: Reducing energy use from street lighting	
Total investment:	**SEK 19.7 million**
Green loans from Kommuninvest (committed):	**SEK 19.7 million**
Green loans from Kommuninvest (disbursed):	**SEK 0 million**
Completed (year):	**2024**
Total energy use/year (Before)	**1,137 MWh**
Total energy use/year (After)	**208 MWh**
Estimated CO_2 emission reductions	**n.a.**

Green buildings

New or existing residential and non-residential buildings with an energy performance per sq.m. that is at least 20 percent better than the Swedish building code. Also major renovations of buildings that reduce energy use by at least 30 percent or to compliance with the Swedish building code, and energy efficiency measures in partial systems that reduce energy use by at least 30 percent.

Green loans to buildings

Total number of projects:	**365**
Total amounts disbursed and outstanding:	**46,664** MSEK

Estimated annual impact of Green Loans[1]

Total energy savings:[2]	**63,724 MWh**
– whereof avoided energy use[3]	**51,612 MWh**
– whereof reduced energy use[4]	**12,112 MWh**
Greenhouse gas emissions savings, per year:	**7,604 tonnes CO_2e**
– whereof Avoided energy use	**6,543 tonnes CO_2e**
– whereof Reduced energy use	**1,061 tonnes CO_2e**
Solar energy production in buildings	**7,401 MWh**

1) Refers to the Green Loan share of project impacts. The impact attributable to Green Bond investors is presented on page 3.

2) Calculated total savings related to reduced energy consumption and solar energy production

3) Avoided energy use refers to a baseline/alternative reference scenario.

4) Reduced energy use refers to a direct or absolute reduction in operation.

Green buildings: Projects approved in 2023

Borrower	Project ID	Sub-category	Project description	Construction period ending	Kommuninvest Share of Financing, %	Committed Amount, SEK million	Disbursed Amount, SEK million	Estimated annual impact, Kommuninvest share		
								Total energy savings, MWh*	Of which solar energy production, MWh*	GHG-emissions reduced/ avoided, tCO_2e/ year*
Gävle Municipality	1129	New buildings	New building certified as Miljöbyggnad Silver, featuring 100% fossil-free electricity and heating, low-energy use, and environmentally friendly materials.	2017-01-31	100%	30	30	46	20	7
Gävle Municipality	1130	New buildings	Building certified as Miljöbyggnad Silver with 100% fossil-free electricity and heating, low-energy consumption, and materials chosen for minimal environmental impact.	2016-12-30	100%	36	36	116	0	11
Gävle Municipality	1131	New buildings	Miljöbyggnad Silver-certified building with high environmental standards, using only fossil-free energy sources and materials with reduced environmental and chemical impact.	2019-04-30	100%	115	115	261	0	31
Gävle Municipality	1132	New buildings	Miljöbyggnad Silver certified new building/ addition featuring entirely fossil-free utilities and environmentally friendly materials, exceeding legal requirements for sustainability.	2016-08-31	100%	14	14	21	0	3
Säterbostäder Aktiebolag	1247	New buildings	Building constructed with materials meeting Miljöbyggnad Silver standards, including solar panel installation.	2023-09-30	97%	43	43	38	17	6
Aktiebolaget Stora Tunabyggen	1248	Greater renovations	Building achieves low energy consumption of 63 kWh per sq.m. and year with solar panels providing over 75% of its annual electricity, aligning with Miljöbyggnad Silver and strict material guidelines.	2024-08-31	90%	225	225	92	71	16
Partillebo AB	1252	New buildings	New building with sedum roofs to reduce stormwater network load, solar panels, Miljöbyggnad Silver certification, and materials approved by Byggvarubedömningen.	2023-12-31	92%	200	200	58	20	11
Oxelösund Municipality	1254	New buildings	New preschool construction with an expected energy performance of 41.1 kWh per sqm and year. Built with a timber frame, high-quality insulation, heat recovery ventilation, and equipped with solar panels.	2023-06-30	71%	40	40	53	1	6
Uddevalla Municipality	1256	New buildings	Building with low energy consumption, equipped with solar panels, and material selection based on Byggvarubedömningen.	2023-03-31	83%	150	150	149	117	26

Complete project-by-project-reporting in spreadsheet format is available in the impact reporting section for Green Bonds at kommuninvest.se

Green buildings: Projects approved in 2023

Borrower	Project ID	Sub-category	Project description	Construction period ending	Kommuninvest Share of Financing, %	Committed Amount, SEK million	Disbursed Amount, SEK million	Estimated annual impact, Kommuninvest share		
								Total energy savings, MWh*	Of which solar energy production, MWh*	GHG-emissions reduced/ avoided, tCO_2e/ year*
Dals-Ed Municipality	1258	New buildings	Building with a timber frame and climate-improved concrete, solar panels on the roof, and heat recovery system.	2022-10-30	41%	36	15	8	2	1
Skövde Municipality	1259	New buildings	Construction of a twelve-story residential building with 132 student apartments, centrally located near a college, minimizing the need for a car. The building features rooftop solar panels.	2021-06-23	84%	100	100	141	0	17
Skövde Municipality	1260	New buildings	In the Mossagården area, 90 security apartments are being constructed across three buildings, mostly two-bedrooms, with about 20% studios and a few three-bedrooms. These apartments offer enhanced accessibility and multiple communal spaces.	2023-03-15	97%	140	140	358	0	33
Örnsköldsvik Municipality	1262	New buildings	Building with low energy use as a key climate benefit. Features include timber frames, recycled paper and gypsum fiberboard walls, optimized concrete hollow-core slabs, mostly Svan eco-labeled linoleum flooring, and where unsuitable, unglued loose-lay plastic mats for chemical considerations.	2021-06-30	88%	40	39	44	0	5
Uddevalla Municipality	1263	New buildings	Building reuses concrete frame, selects materials based on Byggvarubedömningen, and achieves low energy consumption.	2022-12-30	100%	100	100	334	149	54
Uddevalla Municipality	1264	New buildings	Building with low energy consumption and material selection based on Byggvarubedömningen.	2021-12-31	100%	100	100	75	28	11
Uddevalla Municipality	1265	New buildings	Building with low energy consumption and material selection based on Byggvarubedömningen.	2021-01-31	100%	100	100	204	67	30
Askersunds-bostäder Aktiebolag	1266	Greater renovations	Building converted from direct electric heating to district heating, with additional insulation on walls and floors, and equipped with an FTX ventilation system.	2018-06-29	0%	60	0	0	0	0

Complete project-by-project-reporting in spreadsheet format is available in the impact reporting section for Green Bonds at kommuninvest.se

Green buildings: Projects approved in 2023

Borrower	Project ID	Sub-category	Project description	Construction period ending	Kommuninvest Share of Financing, %	Committed Amount, SEK million	Disbursed Amount, SEK million	Estimated annual impact, Kommuninvest share		
								Total energy savings, MWh*	Of which solar energy production, MWh*	GHG-emissions reduced/ avoided, tCO_2e/ year*
Säterbostäder Aktiebolag	1268	New buildings	Building with a timber frame, all materials recommended by Basta, Sunda Hus, or Byggvarubedömningen databases. Solar panels. Low-energy building consuming a maximum of 56 kWh per sq.m. Energy-efficient appliances. Electric car chargers. Good sound and lighting environment.	2023-12-31	26%	27	8	4	2	1
Vingåkers Kommun-fastigheter AB	1270	New buildings	Preschool for 120 children with a timber frame, underfloor heating, and rooftop solar panels.	2023-12-31	52%	37	20	59	9	9
Region Örebro Län	1277	New buildings	Gold-rated Miljöbyggnad building uses geoenergy, recovers server room heat, and has rooftop solar panels generating 51 MWh annually, with efficient ventilation and local-ized electric water heaters.	2022-04-29	100%	268	268	192	25	37
Region Örebro Län	1278	New buildings	Building constructed to Miljöbyggnad stand-ards, preliminarily certified Silver, uses geoenergy for climate control and renewable electricity. Rooftop solar panels and a storm-water reservoir support irrigation and reduce runoff.	2022-11-30	100%	83	83	54	22	10
Region Örebro Län	1279	New buildings	Initially rated Miljöbyggnad Silver now achieves Gold upon verification submitted to SGBC. Utilizes geoenergy for seasonal cli-mate control, renewable electricity, sedum roof, and local stormwater management to reduce municipal system load.	2019-12-19	100%	128	128	319	0	36
Sävsjö Municipality	1280	New buildings	Buildings to follow Miljöbyggnad Silver 3.0 standards (uncertified), with sedum plant roof coverings on auxiliary buildings and solar panels on school buildings. Material and system choices prioritize cost, benefit, lifespan, and environmental impact, aiming for a healthy indoor environment and compli-ance with Byggvarubedömningen.	2024-10-31	0%	100	0	0	0	0

Complete project-by-project-reporting in spreadsheet format is available in the impact reporting section for Green Bonds at kommuninvest.se

CASE: GREEN BUILDINGS

Showcasing sustainable rental housing of the future

In the Vagnsboden project in Umeå municipality, 144 rental apartments equipped with advanced sustainability technology are being built on historic land where the K4 regiment was once located. To enhance energy efficiency of the building, 500 sq.m. of rooftop solar cells generate 80 MWh annually, a wastewater energy recapturing system contributes an additional 200 MWh. The use of climate-improved concrete means less CO_2 emissions from the construction phase. An underground garage with bicycle parking provides convenient and dry storage, to encourage bicycling year-round.

In a unique feature to the project, work rooms have been established which tenants can book to facilitate working from home. The construction also integrates energy-efficient ventilation systems and a stormwater management system designed for 100-year rainfalls. Requirements have been placed on material waste from construction to be sorted and included in circular material flows. Sustainable building materials, assessed and registered in *Byggvarubedömningen*, have been used.

Client: Umeå Municipality (for AB Bostaden, municipal residential housing company)

Project category:	**Green buildings**
Objectives: New energy and carbon efficient residential housing.	
Total investment:	**SEK 395 million**
Green loans from Kommuninvest (committed):	**SEK 395 million**
Green loans from Kommuninvest (disbursed):	**SEK 395 million**
Completed (year):	**2024**
Total estimated energy use/year:	**53 kWh/m²**
Total energy requirement (BBR29, Atemp):	**75 kWh/m²**
Estimated annual CO_2 emissions savings per year (in use):	**66 tonnes CO_2e**

Bild: White Arkitekter

Green buildings: Projects approved in 2023

Borrower	Project ID	Sub-category	Project description	Construction period ending	Kommuninvest Share of Financing, %	Committed Amount, SEK million	Disbursed Amount, SEK million	Estimated annual impact, Kommuninvest share		
								Total energy savings, MWh*	Of which solar energy production, MWh*	GHG-emissions reduced/ avoided, tCO_2e/ year*
Aktiebolaget Götenebostäder	1285	New buildings	In partnership with UNESCO's Vänerskärgården with Kinnekulle Biosphere, this densification project adds two new buildings on a property already containing three residential houses and one secure living facility, enhancing outdoor space with tenant input. It features sedum roofs, local stormwater management, reused materials, EV charging, and a 'night sky art gallery', meeting high energy and sustainability standards.	2023-10-01	72%	82	74	143	16	17
Stiftelsen Östhammars-hem	1298	Greater renovations	Energy efficiency project replacing direct electric heating with geothermal heat, upgrading windows for energy efficiency, and installing solar panels on new substations. Insulating glazing (555 units) installed inside existing windows to address heat loss, reducing environmental impact from manufacturing new energy glass windows.	2023-11-01	100%	38	38	0	0	0
Uddevalla Municipality	1310	New buildings	Building with low heat loss and efficient electricity use. Solar panels and a battery storage system are connected, resulting in a very low energy performance.	2022-12-12	100%	85	85	163	57	22
Aktiebolaget Väsbyhem	1311	New buildings	Building with solar panel system expected to supply approximately 30 MWh of surplus electricity to the grid during summer. Apartment buildings feature a timber frame for lower environmental impact. The top floor has timber partition walls. Electric vehicle charging and bicycle parking available. Equipped with Class A water-efficient fixtures, LED lighting, FTX-A ventilation, and stormwater delay and purification system.	2025-06-30	58%	500	398	214	95	34
Karlstad Municipality	1312	New buildings	Building project not only aimed for low energy consumption but also sought to enhance sustainability by offering central housing options, reducing tenant transportation needs. Material selection was based on our building material assessment.	2021-12-31	96%	61	61	84	0	9

Complete project-by-project-reporting in spreadsheet format is available in the impact reporting section for Green Bonds at kommuninvest.se

Green buildings: Projects approved in 2023

Borrower	Project ID	Sub-category	Project description	Construction period ending	Kommuninvest Share of Financing, %	Committed Amount, SEK million	Disbursed Amount, SEK million	Estimated annual impact, Kommuninvest share		
								Total energy savings, MWh*	Of which solar energy production, MWh*	GHG-emissions reduced/ avoided, tCO_2e/ year*
Jönköpings Rådhus AB	1313	New buildings	Building with low energy use, aiming for 60-71% of BBR 29 standards. All houses feature rooftop solar panels and unique grey-water recycling, reducing drinking water needs. Five houses are occupied, with energy declarations showing consumption well below 80% of BBR requirements.	2024-08-01	47%	200	200	100	0	7
Gävle Municipality	1314	New buildings	New school construction certified as Miljöbyggnad Silver, featuring low energy consumption, 100% fossil-free electricity, and heating. Compliance with energy, indoor environment, and material criteria verified by independent third parties. Building materials are recommended or accepted by Byggvarubedömningen to ensure selection based on chemical content and lifecycle environmental impact. The project also included the installation of solar panels on the roof.	2020-05-29	100%	47	47	40	0	4
Gävle Municipality	1315	New buildings	New construction certified as Miljöbyggnad 2.2 Silver, with low energy use and 100% fossil-free electricity and heating. Materials are chosen based on their environmental impact and chemical content, verified by independent experts to meet Miljöbyggnad's criteria.	2019-06-20	100%	37	37	88	0	10
Gävle Municipality	1316	New buildings	New construction certified as Miljöbyggnad 3.0 Silver features low energy use and 100% fossil-free utilities. Compliance with energy, indoor environment, and materials criteria, verified by independent experts, ensures selections based on environmental impact and chemical content. The project includes solar panel installation.	2020-08-10	100%	39	39	32	0	3
Skövde Municipality	1317	New buildings	Björkbacken preschool blends with nature using green roofs and solar panels, timber construction, heat-treated wood facade, and geothermal heating as a primary energy source.	2023-03-31	100%	72	72	43	1	8

Complete project-by-project-reporting in spreadsheet format is available in the impact reporting section for Green Bonds at kommuninvest.se

Green buildings: Projects approved in 2023

Borrower	Project ID	Sub-category	Project description	Construction period ending	Kommuninvest Share of Financing, %	Committed Amount, SEK million	Disbursed Amount, SEK million	Estimated annual impact, Kommuninvest share		
								Total energy savings, MWh*	Of which solar energy production, MWh*	GHG-emissions reduced/ avoided, tCO_2e/ year*
Varbergs Municipality	1318	New buildings	Trönninge school project meets Miljöbyggnad Gold with specific measures: energy use, solar heat load, energy type, radon, ventilation, NO_2 levels, moisture safety, and legionella all achieve Gold; thermal winter/summer climate, daylight, and sound environment reach Silver. Achieves near-passive house standard and building materials are documented for environmental impact, prioritizing those without hazardous substances.	2017-05-31	91%	251	228	353	103	56
Varbergs Municipality	1319	New buildings	Building's energy performance achieving energy class A and primarily heated by district heating. Materials registered in a digital logbook, with only the highest-rated products in Sundahus Miljödata used.	2017-06-30	100%	130	130	499	0	65
Skövde Municipality	1322	New buildings	Ekedal Elderly Center project focused on future-ready senior living construction, utilizing modern technology and sustainable materials. Aimed for Miljöbyggnad Silver in energy efficiency without certification. Solar panels installed on new roofs with an estimated annual production of 59 MWh.	2022-04-04	100%	151	151	275	146	42
Malung-Sälen Municipality	1323	New buildings	Swimming hall project designed for Miljöbyggnad Silver, featuring two large recyclable steel pools. Solar panels with 143 kW capacity to generate 125 MWh annually. It will utilize waste heat from a nearby ice rink, enhancing energy efficiency.	2024-06-28	20%	252	50	49	12	7
Gävle Municipality	1326	New buildings	New school construction certified as Miljöbyggnad Silver, featuring low energy use, 100% fossil-free electricity and heating. Materials meet environmental standards per Byggvarubedömningen, ensuring sustainable choices.	2019-08-21	100%	110	110	205	0	21

Complete project-by-project-reporting in spreadsheet format is available in the impact reporting section for Green Bonds at kommuninvest.se

CASE: GREEN BUILDINGS

Holistic approach to renovation and expansion

The new Ramneröd school in Uddevalla municipality has undergone a transformation that puts sustainability first. The project, which almost double capacity, includes two completely renovated buildings and one new, and capitalizes on the reuse of an existing concrete frame from 1968. The sports building has new changing rooms and a new gymnasium. The new three-story building comprises catering kitchen, dining room, administration and the main entrance.

The project addresses climate-related risk through stormwater retention reservoirs, which improve stormwater management and reduce the risk of flooding. Existing constructions have also been cleaned from asbestos and PCBs.

Rooftop solar panels produce approx. 40 kWh/m² per year, contribution not only to reducing energy consumption and operating costs, but also to the city's overall environmental objectives and related policies.

Client: Uddevalla municipality

Project category:	**Green buildings**
Objectives: Renovation/extension with holistic approach.	
Total investment:	**SEK 300 million**
Green loans from Kommuninvest (committed):	**SEK 300 million**
Green loans from Kommuninvest (disbursed):	**SEK 300 million**
Completed (year):	**2022**
Total energy use/year (kWh/m² Atemp):	**23 kWh/m²**
Total energy requirement (BBR29) (kWh/m² Atemp):	**80 kWh/m²**
Estimated CO_2 emission reductions per year (in use):	**95 tonnes CO_2e**

Green buildings: Projects approved in 2023

Borrower	Project ID	Sub-category	Project description	Construction period ending	Kommuninvest Share of Financing, %	Committed Amount, SEK million	Disbursed Amount, SEK million	Estimated annual impact, Kommuninvest share		
								Total energy savings, MWh*	Of which solar energy production, MWh*	GHG-emissions reduced/ avoided, tCO_2e/ year*
Upplands Väsby Municipality	1329	New buildings	Smedsgärdsskolan is a new, climate-smart primary school for 600 students. The school will meet Miljöbyggnad 3.2 Silver and Passive House Classic standards, optimizing energy use with a requirement for a tight building envelope and a total primary energy need of max 60 kWh per sq.m and year. Solar panels to cover at least 75% of the building's electricity needs, excluding operational electricity.	2026-08-31	0%	300	0	0	0	0
Upplands Väsby Municipality	1331	New buildings	New construction of a full-size sports hall with associated access and outdoor environment, designed to meet Miljöbyggnad Silver and Passive House Classic standards. Certification for Miljöbyggnad Silver not applicable.	2025-12-31	0%	89	0	0	0	0
Piteå Municipality	1332	New buildings	New building emphasizing sustainable construction, addressing eight of Miljöbyggnad's 15 criteria: solar heat load, energy use, renewable energy share, sound, moisture safety, radon, construction logbook, and phasing out hazardous substances. Maintenance-free facade and winter heating from Smurfit Kappa's waste heat.	2024-09-02	0%	90	0	0	0	0
Piteå Municipality	1333	New buildings	The new residence is designed with a central hub and numerous accessible meeting places for residents, the core of the operation beeing the professional treatment of individuals with dementia and their families. The construction is focusing on ten of Miljöbyggnad's 15 criteria including solar heat load, energy usage, renewable energy share, sound, moisture safety, daylight, radon, moisture management, construction logbook, and phasing out hazardous substances. Rooftop solar panels tol generate 13 MWh, covering a large portion of the building's energy needs. In winter, the building is heated using waste heat from Smurfit Kappa.	2025-07-01	0%	180	0	0	0	0
Kommunfastigheter I Arboga AB	1335	New buildings	New construction of a primary school with a timber frame and solar panels.	2026-06-30	14%	485	70	110	49	18

Complete project-by-project-reporting in spreadsheet format is available in the impact reporting section for Green Bonds at kommuninvest.se

Green buildings: Projects approved in 2023

Borrower	Project ID	Sub-category	Project description	Construction period ending	Kommuninvest Share of Financing, %	Committed Amount, SEK million	Disbursed Amount, SEK million	Estimated annual impact, Kommuninvest share		
								Total energy savings, MWh*	Of which solar energy production, MWh*	GHG-emissions reduced/ avoided, tCO_2e/ year*
Karlshamns-bostäder Aktiebolag	1337	Greater renova-tions	In the project, all plumbing and HVAC sys-tems were replaced and optimized, with new ventilation systems installed. Solar panels were also installed on the roofs.	2023-09-30	25%	52	52	0	0	0
AB Nybro Brunn	1338	New buildings	New construction features a timber frame, biochar, wood facade, 120 kW solar panels, and extensive use of wood throughout.	2025-04-30	0%	230	0	0	0	0
Karlstad Municipality	1341	New buildings	New preschool construction replaced an obsolete building not meeting indoor climate and technical standards. Certified to Miljöbyggnad Silver, it emphasizes good indoor air quality, avoidance of hazardous chemicals, and low climate impact with energy performance near Gold level, verified by measurements.	2021-08-01	91%	40	39	76	22	11
Finspång Municipality	1342	New buildings	Preschool with low energy use, rooftop solar panels, and FTX system for heat recovery. Built to Miljöbyggnad Silver standards. Renewable electricity is purchased. All prod-ucts are logged in SundaHus.	2023-07-13	99%	63	63	47	14	9
Oxelösund Municipality	1343	Greater renova-tions	Major renovation of Peterslundsskolan, built in the late '70s and previously unrenovated, includes benefits like lower energy usage, added solar panels, climate-improved con-crete, and asbestos removal.	2025-02-28	78%	100	100	0	0	0
Eskilstuna Municipality	1345	New buildings	Building designed and constructed to Miljöbyggnad Silver standards (not certified), with materials logged in Sunda Hus. Solar panels enhance renewable energy produc-tion.	2018-12-01	92%	172	172	249	15	27
Eskilstuna Municipality	1346	New buildings	Project includes two SABO Kombohus, pro-cured according to their climate require-ments for new buildings. Each house type has a climate declaration showing embodied emissions from the building material, totaling 203 kg CO_2 per sq.m.	2020-07-31	94%	55	55	58	0	6

Complete project-by-project-reporting in spreadsheet format is available in the impact reporting section for Green Bonds at kommuninvest.se

CASE: GREEN BUILDINGS

Sound investment in environment and health

Region Örebro County, which provides healthcare services to 12 municipalities, has built a new health center in Lindesberg, which also integrates housing units for the municipal real estate company, FALAB.

Built in wood, the health centre is located centrally in the urban area, in a park with 150 trees. Consisting of two buildings, one for the health centre and one for residential units and linked by a common gallery in glass. Built according to Environmental Building certification and awarded Gold upon verification, partly as a result of sustainable building materials, assessed and registered in *Byggvarubedömningen*. A thermal energy plant provides free cooling during summer months and heats the ventilation during the winter. The building is equipped with a sedum roof and the management of stormwater is mainly done locally in order to limit the load on the municipal stormwater system.

Prior to construction, a risk analysis was carried out regarding torrential rain/flooding risks, which has also been integrated into the strategic design of the building's functions.

Client: Region Örebro county

Project category:	**Green buildings**
Objectives: Regional sustainable development: health-promoting indoor environments, resource efficiency, reduced environmental and climate impact.	
Total investment:	**SEK 128 million**
Green loans from Kommuninvest (committed):	**SEK 128 million**
Green loans from Kommuninvest (disbursed):	**SEK 128 million**
Completed (year):	**2019**
Total energy use/year (kWh/m² Atemp):	**39 kWh/m²**
Total energy requirement (BBR29) (kWh/m² Atemp):	**95 kWh/m²**
Estimated CO_2 emission reductions per year (in use):	**36 tonnes CO_2e**

Bild: White Arkitekter

Green buildings: Projects approved in 2023

Borrower	Project ID	Sub-category	Project description	Construction period ending	Kommuninvest Share of Financing, %	Committed Amount, SEK million	Disbursed Amount, SEK million	Estimated annual impact, Kommuninvest share		
								Total energy savings, MWh*	Of which solar energy production, MWh*	GHG-emissions reduced/ avoided, tCO_2e/ year*
Eskilstuna Municipality	1347	New buildings	SABO Kombohus project meets specific climate requirements for new construction, with climate declarations for each house type detailing emissions by building material, totaling 203 kg CO_2 per sq.m. A 13 kW solar panel system enhances renewable energy production.	2022-05-01	96%	229	229	658	0	69
Eskilstuna Municipality	1348	New buildings	SABO Kombohus project, adhering to climate requirements for new builds, features climate declarations with embodied emissions from the building materials, totaling 203 kg CO_2 per sq.m. A 28 kW solar panel system boosts renewable energy production.	2023-12-15	100%	211	211	206	0	19
Eskilstuna Municipality	1349	New buildings	Three Kombohus Tetris lamella buildings, procured according to SABO's climate requirements, feature timber frames from northern Swedish forests and solar panels for renewable energy. A central battery storage maximizes solar usage and reduces grid strain during peak hours. The area includes an electric car pool to decrease fossil fuel use among tenants, who also have access to personal energy use monitoring to raise awareness of their emissions.	2023-10-01	99%	191	191	113	22	22
Eskilstuna Municipality	1350	New buildings	Project includes 9 of SABO's Kombohus small houses, procured to meet climate criteria. Timber frames reduce construction emissions. Charging stations at all units facilitate a shift from fossil transportation. Tenants can track energy use via an app, raising emissions awareness.	2024-11-01	99%	123	123	32	0	6
Eskilstuna Municipality	1351	Greater renovations	Renovation of a building from 1964, with materials used logged in SundaHus, primarily rated A, B, and C+. Replaced old ventilation with FTX systems for heat recovery from apartments.	2022-01-01	94%	35	35	0	0	0
Umeå Municipality	1353	New buildings	144 modern rental apartments being built on historical grounds, featuring solar panels, wastewater recycling, and climate-reducing concrete. Includes underground parking and workspaces.	2024-12-02	100%	395	395	420	210	66

Complete project-by-project-reporting in spreadsheet format is available in the impact reporting section for Green Bonds at kommuninvest.se

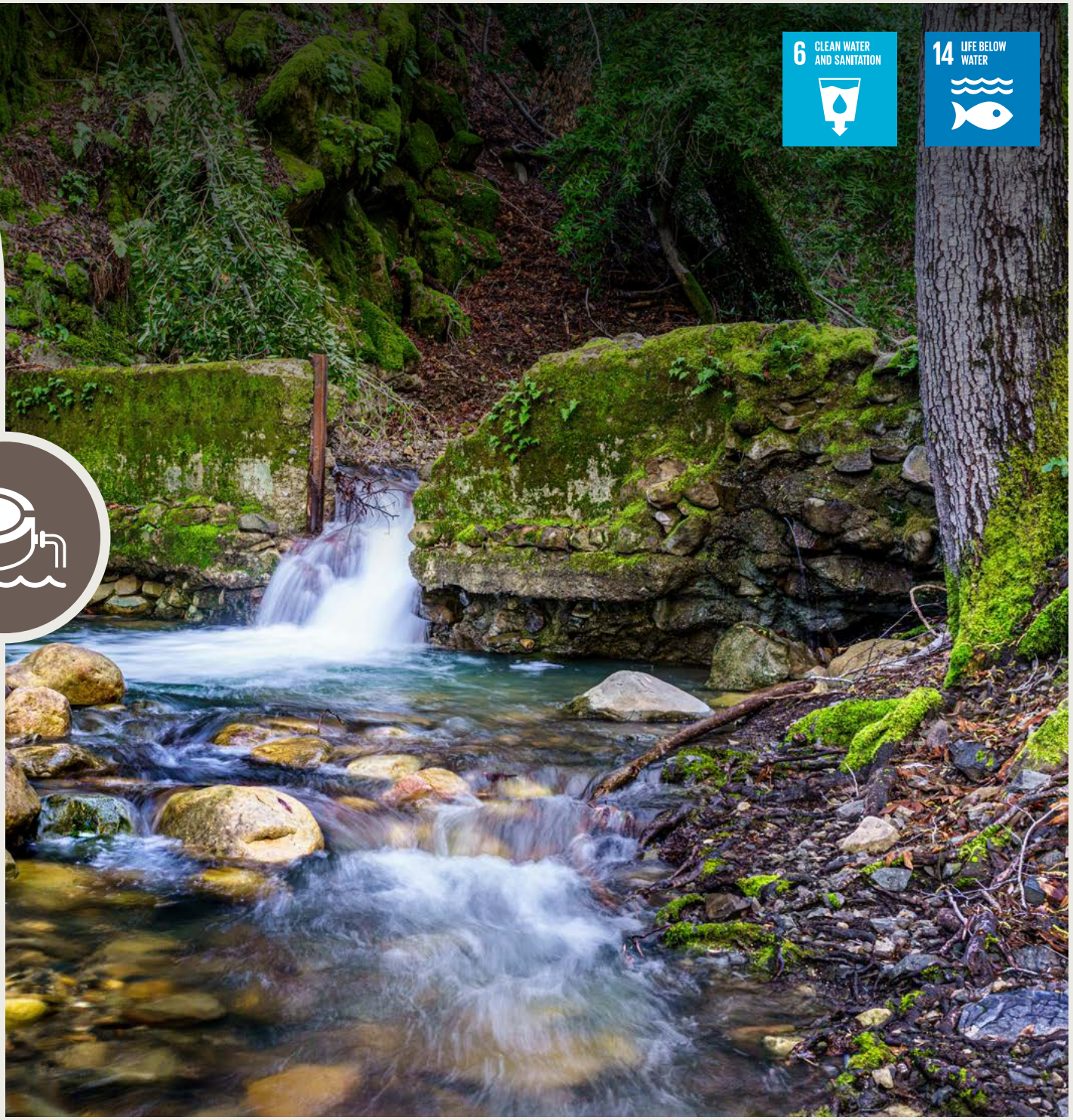
Green buildings: Projects approved in 2023

Borrower	Project ID	Sub-category	Project description	Construction period ending	Kommuninvest Share of Financing, %	Committed Amount, SEK million	Disbursed Amount, SEK million	Estimated annual impact, Kommuninvest share		
								Total energy savings, MWh*	Of which solar energy production, MWh*	GHG-emissions reduced/ avoided, tCO_2e/ year*
Kraftstaden Fastigheter Trollhättan AB	1354	New buildings	New construction of an F-5 school, preliminarily certified as Miljöbyggnad 3.1 with a Silver rating. Mainly timber frame. Roof solar panels expected to produce 100 MWh annually.	2023-10-01	79%	45	45	20	9	4
Kraftstaden Fastigheter Trollhättan AB	1355	New buildings	New school construction to be certified as Miljöbyggnad 4.0 Silver with additional NollCO_2 certification. Primarily timber frame. Roof solar panels with an estimated annual production of 19 MWh.	2025-02-23	67%	110	110	40	13	8

Complete project-by-project-reporting in spreadsheet format is available in the impact reporting section for Green Bonds at kommuninvest.se

Water and waste-water management

Construction and upgrading of freshwater and waste-water systems to accommodate population growth and higher precipitation levels and to meet environmental regulations. Project that apply innovative technologies to reduce levels of harmful substances and make good use of the resources contained in wastewater. Examples: water and wastewater networks, water treatment plants, treatment of discharges to watercourses, and investment in energy and heat recovery from water and wastewater networks.



Green loans to water and wastewater management

Total number of projects: **97**

Total amounts disbursed and outstanding: **11,652** MSEK

Estimated impact of Green Loans[1]

Increase in capacity: **260,926 population equivalents**

1) Refers to the Green Loan share of project impacts. The impact attributable to Green Bond investors is presented on page 3.

Water and wastewater management: Projects approved in 2023

Borrower	Project ID	Project description	Construction period ending (Year)	Kommuninvest Share of Financing, %	Committed Amount, SEK million	Disbursed Amount, SEK million	Estimated annual impact, Kommuninvest share		
							Renewable energy generation, MWh	GHG-emissions reduced/ avoided, tCO_2e/ year	Person equivalents change
Arjeplogs Kaommun	1271	Upgraded wastewater treatment facility enhances capacity from 450 to 1,500 PE, reduces emissions, and increases energy efficiency with modern pumps and heating. Includes Jäckvik water plant upgrades.	2024-12-31	0%	28	0	0	0	0
Kalmar Vatten AB	1272	The wastewater treatment plant is preparing to meet forthcoming stricter requirements by 2030. The project includes advanced purification technology, including preparations for pharmaceutical removal, implementing ultrafiltration, producing recycled water, utilizing biogas for energy, and installing solar panels.	2027-07-01	60%	2085	1245	2,270	1,110	n/a
Trollhättan Energi Aktiebolag	1276	VA renovation project replacing old combined sewer systems with separate wastewater and stormwater pipes, reducing overflow and basement flooding risks, and decreasing environmental impact from sewage discharges.	2024-12-06	100%	10	10	0	n/a	n/a
Leva Vatten AB	1282	The project consolidates wastewater treatment to Långeviksverket, enhancing nitrogen removal and reducing emissions by shutting down two smaller, less efficient plants. This strategic move minimizes environmental impact, facilitates connections to new VA districts by 2050, and optimizes energy use while maintaining biogas plant operations. The initiative is also aimed at achieving revaq certification for sludge, independent of this upgrade.	2025-04-30	30%	100	30	131	35	n/a
Aneby Miljö och Vatten AB	1283	Vireda's water services area now connects to Stora and Lilla Hultrum through transfer lines, replacing old facilities with new, energy-efficient water and wastewater treatment plants, ensuring long-term drinking water supply.	2023-04-30	100%	40	40	0	-8	50
Pajala Kommun	1284	The project aims to reduce nitrogen and phosphorus emissions to meet set requirements and achieve biological purification.	2023-12-31	55%	30	30	0	-41	n/a
Borgholm Energi AB	1288	Upgrading 700 properties from individual to collective sewage systems reducing emissions and contributing to biogas production for district heating. Threated wastewater is reused by local farmers. The projects also eliminating the need for tanker trucks to empty the individual systems.	2025-12-30	4%	300	11	23	6	55

Complete project-by-project-reporting in spreadsheet format is available in the impact reporting section for Green Bonds at kommuninvest.se

Water and wastewater management: Projects approved in 2023

Borrower	Project ID	Project description	Construction period ending (Year)	Kommuninvest Share of Financing, %	Committed Amount, SEK million	Disbursed Amount, SEK million	Estimated annual impact, Kommuninvest share		
							Renewable energy generation, MWh	GHG-emissions reduced/ avoided, tCO_2e/ year	Person equivalents change
Falköpings Kommun	1321	Broddetorp's renovation and investment project separates wastewater and stormwater, closing the Broddetorp treatment plant to pump sewage to Horshaga plant in Skara, doubling nitrogen reduction and cutting energy and chemical use by 75% and 70%, respectively. The project includes relining leaky pipes and expanding stormwater systems, reducing environmental impact, CO_2 emissions from transport, and making the sewage network less vulnerable to heavy rainfall. It also enables properties with private sewage to connect to the municipal system, enhancing treatment efficiency and environmental protection.	2024-12-31	97%	16.5	16.5	0	6	243
Örnsköldsviks Kommun	1336	Expanding Örnsköldsvik's urban area drinking water network to include areas currently relying on private wells, ensuring safe water access. The project also extends the sewage network for connection to municipal treatment, reducing nitrogen, phosphorus, and oxygen-demanding substance emissions, benefiting sensitive recipients.	2024-12-31	100%	61	61	91	20	239
Vansbro Teknik AB	1339	Wastewater treatment plant enhanced with a pre-sedimentation step to reduce BOD and phosphorus emissions. Transitioned from pellets/oil to solar and geothermal energy, increasing energy efficiency and reducing consumption.	2024-12-31	0%	90	0	0	0	n/a
Trosa Kommun	1344	Trosa municipality collaborates with SYVAB for wastewater management, aiming for higher purification and efficient sludge recycling, supporting population growth and environmental goals with a new transfer line.	2027-06-30	0%	277	0	0	0	n/a

Complete project-by-project-reporting in spreadsheet format is available in the impact reporting section for Green Bonds at kommuninvest.se

Clean transportation

Transport solutions that result in minimal or zero emissions. Project examples may include trains, underground, trams and hybrid buses. Also infrastructure supporting public transportation and other sustainable transportation, such as pedestrian and cycle paths, charging points for electric vehicles and fueling stations for renewable fuels.

Green loans to clean transportation

Total number of projects: **21**

Total amounts disbursed and outstanding: **4,206** MSEK

Estimated annual impact of Green Loans[1]

Greenhouse gas emissions avoided, per year: **43,966 tonnes CO_2e**

1) Refers to the Green Loan share of project impacts. The impact attributable to Green Bond investors is presented on page 3.

Clean transportation: Projects approved in 2023

Borrower	Project ID	Project description	Construction period ending (Year)	Kommuninvest Share of Financing, %	Committed Amount, SEK million	Disbursed Amount, SEK million	Estimated impact, Kommuninvest share	
							Total energy savings, MWh	GHG-emissions reduced/avoided tCO_2e/year
Öckerö Rederi AB	1250	Investment in electrifying public transport vessels, transitioning from MK1 diesel to electric, serving an estimated 100,000 passengers annually.	2023-12-06	0%	12	0	0	0

Complete project-by-project-reporting in spreadsheet format is available in the impact reporting section for Green Bonds at kommuninvest.se

CASE: CLEAN TRANSPORTATION

Electrifying ferry transport, adapting jetties in the process

The municipal ferry operator Öckerö Rederi AB is electrifying its fleet between Öckerö, Björkö, Kalvsund and Grötö, through a conversion from diesel to electric operation. This change, which began in December 2023, represents a major step towards reducing emissions with an expected 235 tonnes CO_2 and improved air quality for the 100,000 passengers annually.

In the conversion to electric operation, it is also ensured that the ferry will be operated exclusively on renewable energy, marked with Good Environmental Choice. Battery charging takes place at the Öckerö ferry port during both daytime and nighttime.

Floating jetties are an important part of the project, to cope with climate-related risks such as increased sea water levels and more frequent extreme weather conditions. They ensure service access and operational reliability also under changing climate conditions.

Öckerö Rederi's investment reflects a vision of a sustainable future where public transport is not only efficient, but also adapted to effectively deal with climate challenges.

Client: Öckerö Rederi AB

Project category:	**Clean transportation**
Objectives: Reducing carbon emissions from ferry traffic.	
Total investment:	**SEK 35 million**
Green loans from Kommuninvest (committed):	**SEK 12 million**
Green loans from Kommuninvest (disbursed):	**SEK 0 million**
Completed (year):	**2024**

Waste management

Investments are intended to ensure sustainable, energy efficient and resource-saving waste management. Eligible projects include the construction of new waste management facilities, upgrades/expansion of existing ones; waste collection systems that minimise transport requirements and increase recycling scope, etc.

Green loans to Renewable energy

Total number of projects:	**21**
Total amounts disbursed and outstanding:	**804** MSEK

Estimated annual impact of Green Loans[1]

Increase in capacity:	**n/a**
Greenhouse gas emissions reduced and avoided, per year:	**7,823 tonnes CO_2e**

1) Refers to the Green Loan share of project impacts. The impact attributable to Green Bond investors is presented on page 3.

Waste management: Projects approved in 2023

Borrower	Project ID	Project description	Construction period ending (Year)	Kommuninvest Share of Financing, %	Committed Amount, SEK million	Disbursed Amount, SEK million	Estimated impact, Kommuninvest share	
							Total energy savings, MWh	GHG-emissions reduced/avoided tCO_2e/year
Borås stad	1281	Project by Borås Energi och Miljö AB enhances recycling in Borås, deploying 38,000 multi-bin and 6,000 food waste containers, aiming to cut CO_2 emissions by 3,000 tons yearly.	2023-12-31	100%	147	147	n/a	n/a

Complete project-by-project-reporting in spreadsheet format is available in the impact reporting section for Green Bonds at kommuninvest.se

Climate change adaptation

Investments in this category are intended to improve local adaptation to climate change. This includes facilities and installations to manage urban runoff, floods, landslides, avalanches, rising sea levels, and other challenges due to changed weather and climate conditions. Measures undertaken may be related to buildings, infrastructure and sensitive surroundings.

Green loans to climate change adaptation

Total number of projects:	**1**
Total amounts disbursed and outstanding:	**0** MSEK

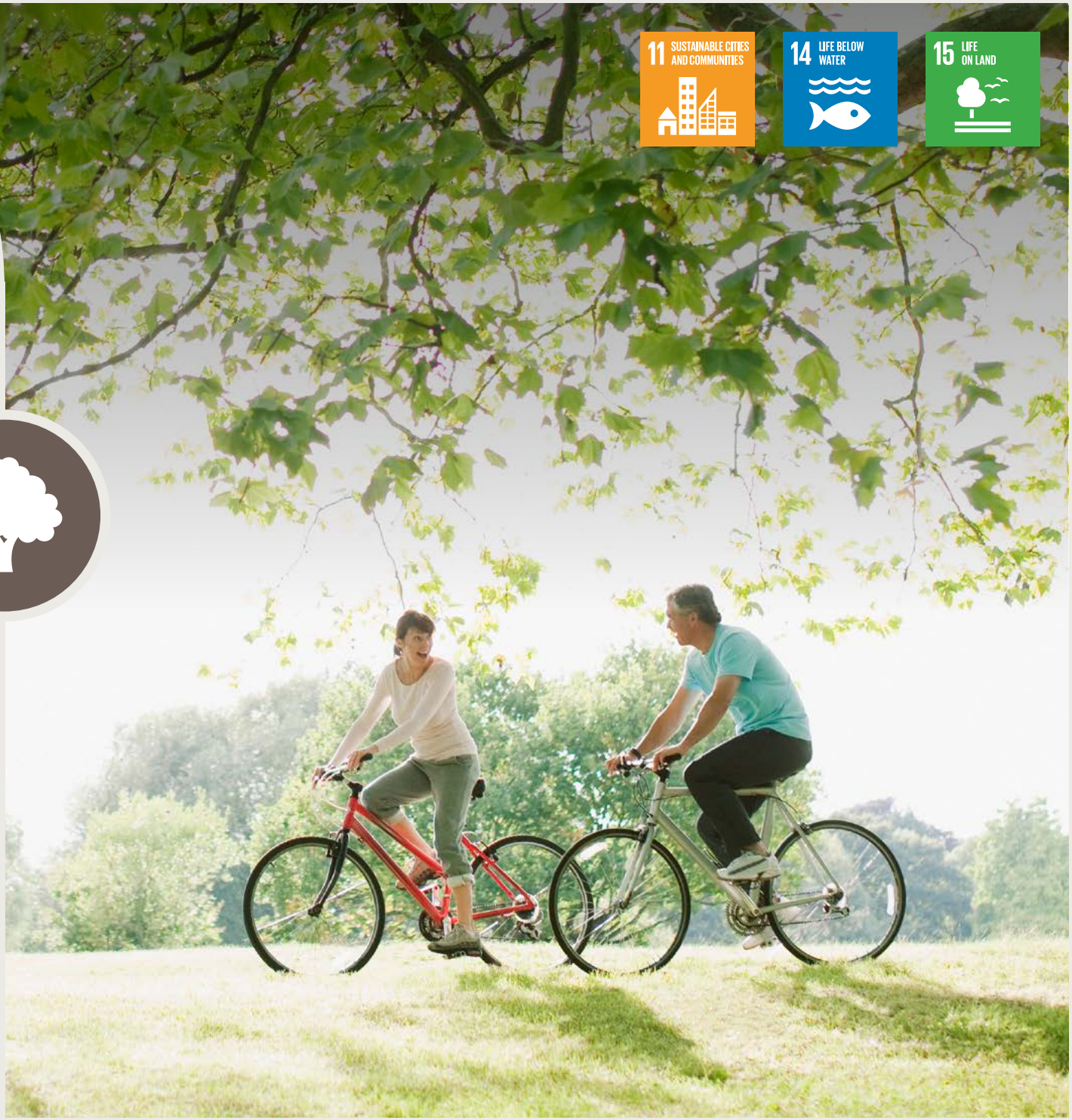
Estimated impact of Green Loans[1]

Increase in capacity:	**n/a**

1) Refers to the Green Loan share of project impacts. The impact attributable to Green Bond investors is presented on page 3.

Environmental management

This category covers a range of projects that intend to ensure sustainable land use. This may include projects such as restoration of biodiversity, planting forests, cleaning up of harmful substances, developing land into recreational space, facilitating walking, cycling and public transportation solutions. Measures may include nature conservation and improving eco-system services.



Green loans to environmental management

Total number of projects: **9**

Total amounts disbursed and outstanding: **576** MSEK

Estimated impact of Green Loans[1]

Area, hectares	**50.4**

1) Refers to the Green Loan share of project impacts. The impact attributable to Green Bond investors is presented on page 3.

Impact reporting methodology

Introduction

The purpose of this impact report is to illustrate the climate and environmental impacts that have resulted or are projected to result from projects financed through the Kommuninvest Green Bonds Framework. Kommuninvest is committed to transparent reporting and conservative assessments when reporting these results.

As of 31 December 2023, Kommuninvest had financed Eligible Projects in all eight Framework project categories: Renewable energy; Energy efficiency in energy systems; Green buildings and energy efficiency; Clean transportation; Waste management; Water and wastewater management; Climate change adaptation and Environmental management.

Investments in the first five of these categories typically lead to direct reductions in greenhouse gas emissions, primarily through provision of added renewable energy capacity, through establishment of more energy efficient housing or other property construction or through direct energy efficiency measures. In the case of water and waste water management, investments typically result in reducing emissions of nutrients and oxygen-consuming substances, as well as increased biogas production, but may also lead to an increase in greenhouse gas emissions due to expansion of purification operations and an associated increase in energy consumption. Remaining categories target climate change adaptation and other environmental objectives including reducing leakage of toxic substances.

Interpret results with caution

A number of key result indicators including indicators targeting renewable energy generation, energy savings and reduced and avoided GHG emissions have been selected and where possible quantified. However, it is important to consider the following aspects in order to adequately interpret the reported results:

- Uncertainty and comparability: Estimations of impact indicators and projections of impacts are based on certain assumptions. Kommuninvest aims to make sound, conservative and reasonable assumptions based on, inter alia, current information and data provided by its borrowers. Actual results may differ from initial projections as a result of unforeseen project outcomes, behavior and slow start-up periods.
- Qualitative results: The projects listed within this report may have impacts across a wider range of indicators than those included in this report. Where quantitative data is unavailable, qualitative data, to the extent possible, have been included to illustrate the type and direction of other beneficial impacts.

- Ex-ante and ex-post: Both impact analysis (*ex-ante*) and impact reporting (*ex-post*) will be used to report the impacts of a project. Kommuninvest aims to report actual results where feasible, and has included information to that effect in the project disclosures in this report and online. As required by the Kommuninvest Green Bonds Framework, all Eligible Projects must promote the transition to a low-carbon and climate-resilient society.

Adhering to harmonised guidelines

The impact indicators focus on results deemed relevant to Green Bond investors, and seeks to be aligned with the recommendations outlined in the Nordic Position Paper[1] (see page 13).

In many respects, this means alignment also with the IFI Harmonized Framework for Impact Reporting[2], published by a group of international financial institutions, and with impact reporting recommendations as outlined by the Green Bond Principles[3].

The indicators are intended to illustrate the type and scale of expected results in a variety of projects. It is important to note that, because of the wide range of project categories, comparability between projects (and other project portfolios) may be limited.

Calculation of climate impact

The environmental impact of Eligible Projects is calculated using actual or estimated annual impact, compared to an alternative base scenario where the investment has not taken place or where it has been completed solely meeting regulatory requirements.

The impact of reduction in greenhouse gas emissions is measured in CO_2-equivalents (CO_2e) while energy savings are measured in MWh. Other units of measurements may be used when appropriate. All project climate impact calculations are based on the share of financing provided by Kommuninvest and the actual disbursements to the project. We report the impact of investments on an ex-ante basis, i.e. on the basis of estimates. If we have access to ex-post data, i.e. actual outcomes, we will report on these. The project-by-project disclosures indicate whether impact is reported based on estimates or actual outcomes.

Approach

The impact of Eligible Projects funded by Kommuninvest can be calculated in a number of ways:

- by reference to the reduction in energy consumption or added renewable energy capacity, and thus the greenhouse gas emissions avoided as a result of energy savings or crowding out dirtier alternatives (mitigation projects).
- the contribution made to strengthening local adaptation to climate change (adaptation projects).
- the environmental benefits achieved in other ways than through mitigation or adaptation measures (environmental management projects).

Green buildings and Renewable energy

As of 31 December 2023, 61 (62) percent of the disbursements were for Green building projects and 16 (16) percent for Renewable energy projects, project categories which are deemed greenhouse gas mitigation investments.

To calculate the climate and environmental impact, the completed project has to be compared with an alternative scenario. In some cases, it will be appropriate to consider the investment in relation to a baseline scenario – a reference scenario in which the investment does not exist. In such cases the calculation will be as follows:

Annual climate impact = (emissions produced or energy consumed by the project in a baseline scenario) – (emissions produced or energy consumed by the project after the investment has been completed).

In other cases, for example where the project financed is a new building, the approach is to assume that the investment will be undertaken regardless but that the borrower may choose to adhere to less strict climate standards. In such instances the climate impact is calculated on the basis of an alternative scenario in which the investment meets the minimum requirements contained in the applicable building regulations. The calculation will then be as follows:

Annual climate impact = (emissions produced or energy consumed by an equivalent investment if minimum standards were followed) – (emissions produced or energy consumed by the project after the investment has been completed).

A detailed disclosure of the impact calculations deployed in this report is provided on pages 52–57.

1) Nordic Public Sector Issuers: Position Paper on Green Bonds impact reporting, March 2024

2) International Financial Institutions (IFIs): Green Bonds, Working Towards a Harmonized Framework for Impact Reporting, December 2015

3) See "Handbook – Harmonized Framework for Impact Reporting, June 2023" at the Resource Centre for Green & Social Bonds at icmagroup.com

Impact disclosed in relation to financed portion

This report illustrates the expected or realized environmental impact made possible as a result of projects to which Green Bond proceeds have been allocated. When we report impact, we do so in relation to the share of the project's total investment cost that Kommuninvest has financed, and to amounts disbursed and outstanding to the project.

It is not uncommon that the list of financed projects included in our reporting are projects to which no Green Loans have been disbursed. This is often due to the fact that projects forms part of a portfolio for the same customer, where the total committed amount is not fully utilized and the disbursed financing is allocated to other project(s) in the portfolio. Clients may also have applied for funding for projects yet to be started, or where the client has yet to draw down on the committed funding. Alternatively, the client may intend to use the Green Loan to refinance an existing traditional loan and is awaiting maturity of the latter. However, no environmental impact is reported for Green Loans where no amounts are disbursed and outstanding.

Impact per invested SEK

Measuring the impact of a green investment project in relation to the money that has been invested is a clear and simple metric to evaluate Green Bonds. While this makes it easy to compare Green Bond issues against each other, it may create a false sense of quantitative rigor, as such an approach puts faith in the precision of numbers related to uncertain environmental calculations, which in many cases are performed *ex-ante*.

Such an approach may also fail to recognize that some Green Bond frameworks are broad in scope, targeting environmental project categories that do not provide impacts measurable in CO_2. This could, for instance, be adaptation and water management projects or sustainable buildings that have other significant environmental values apart from the CO_2 avoided/reduced. For Kommuninvest, this specifically applies to the project categories Water and wastewater management, Waste management, Climate change adaptation and Environmental management.

We therefore report impact per invested SEK for investment projects or project categories where the CO_2-impact is quantifiable and relevant. As stated above and for conservative purposes, we report impact based on amounts disbursed to a project. If disbursements are made gradually, environmental impact will also be taken into account gradually. In cases where no disbursements have been made to a project, the environmental benefit for that project will be recognised as zero.

A comparison of impact per invested SEK between the Renewable energy and Green building project categories indicate a considerably higher CO_2e impact for the former vs. the latter. A couple of perspectives are relevant here.

Firstly, the primary purpose of a new building is to provide a specific function as a residential or non-residential building. Energy savings are important, however not the primary investment objective. This in contrast to renewable energy investments, where energy production is in focus. Secondly, the majority of green buildings financed by Kommuninvest are heated through district heating. This means that the major part of energy savings are calculated against a baseline of 51 kg CO_2 per MWh, instead of 191 kg CO_2 per MWh used for electricity savings.

About baselines for CO_2 emissions

Deciding upon a baseline emission factor against which the environmental impact can be measured is important, since the chosen baseline will determine the calculated environmental benefits. Kommuninvest's choice of baselines and methodology for calculating environmental impact are aligned with the recommendations of the Nordic Position Paper.

Outlined below are the baseline choices for the two largest project categories of the Kommuninvest Green Bonds Framework: Renewable energy and Green buildings and energy efficiency. The full disclosure of baselines used in this report is available on page 53.

For electricity, Kommuninvest uses an EU Mainland grid factor including the UK and Norway as the baseline. The rationale is that a non-negligible interconnection between the Nordic countries and European energy markets exist already today and is planned to increase in the coming decades.

The baseline emission factor is constructed using a Combined Margin (CM) for the grid comprised of an existing Operating Margin (OM) and a future Build Margin (BM), as suggested by the IFI Framework for a Harmonized

4) International Financial Institution (IFI) Framework for a Harmonized Approach to Greenhouse Gas Accounting, November 2015; Green Bonds, Working Towards a Harmonized Framework for Impact Reporting, December 2015.

Approach to Greenhouse Gas Reporting[4]. However, Kommuninvest applies the same combination of the OM and BM for all projects, as recommended by the Nordic Position Paper.

For district heating[5] systems, which are fundamentally local/regional and not interconnected on a national or Nordic basis, Kommuninvest has commissioned an external advisor to develop a baseline emission factor for district heating for Sweden, based on avoided mix of best available alternative heating technologies[6].

To calculate the impact and energy efficiency of buildings, the financed building is compared with the requirements of the Swedish national building code (Boverkets Byggregler, BBR).

Methodology for Green Buildings

As mentioned, the impact for green buildings is calculated by comparing the building's expected or actual energy consumption to a reference scenario, where the building is constructed in accordance with legal requirements. The calculation applies emission factors for electricity and district heating to the reported energy consumption for each energy carrier in the building.

For buildings approved in relation to building regulation BBR 21, the data reported to Kommuninvest refers to energy consumption in kWh. This straightforward type of reporting has changed with later updates to the regulation, BBR 25 and BBR 29. According to BBR 25 and BBR 29, the actual consumption is converted to so-called energy performance, with consideration for instance as to whether the building is heated by district heating or electricity. Therefore, for BBR 25- and BBR 29-buildings in the portfolio, the reported values for energy performance that Kommuninvest has received does not correspond to actual energy consumption. In order to recalculate reported energy performance values to actual energy consumption, a conversion methodology has been developed in dialogue with the Kommuninvest Environmental Committee. The first step of this method is to convert reported values for energy performance to actual energy consumption and then calculating the the CO_2e benefit of the lower energy consumption.

Reduced and avoided emissions

Kommuninvest has applied the following approach to define whether a financed investment project results in reduced or avoided emissions.

The climate benefit for all Renewable energy projects is regarded as avoided emissions, since the production of renewable energy is considered to displace alternative more carbon-intensive energy production.

Also for Waste management projects, the climate benefit is regarded as avoided emissions, as most of the quantifiable climate benefit derives from more efficient waste management leading to increased production of biogas.

Regarding Green buildings, Kommuninvest considers the climate benefit from new buildings as avoided emissions, as the alternative is that the building had been constructed in accordance with applicable legal requirements. Climate benefits from energy efficiency projects and major renovations within Green buildings, on the other hand, are regarded as reduced emissions.

For the project categories Energy efficiency in energy systems and Clean transportation, the climate benefit is also regarded as reduced emissions, since the projects financed are mainly considered to result in the replacement of more carbon-intensive alternatives.

Joule conversion

In this report we use watt-hours as the energy unit, with 1 Wh being the equivalent of one watt of power expended for one hour of time. The Joule (J) conversion factor is: 1 Wh = 3.6 kJ; 1kWh = 3.6 MJ, 1 MWh = 3.6 GJ.

5) District heating is a system for 1distributing heat generated in a centralized location for residential and commercial heating requirements. In the Nordic countries, the heat is often obtained from a cogeneration plant burning principally renewable energy sources, including biomass, but plants also use waste and excess heat, and to a minor extent, fossil fuels. District heating plants may also be used to produce electricity (combined power and heating plants, CHP), and cooling.

6) Profu memorandum (in Swedish only): "Stöd till klimatutvärdering av gröna investeringar inom fjärrvärmeområdet – Översyn och uppdatering December 2023". Interested parties can obtain this report by sending a request to: ir@kommuninvest.se

Baselines for CO_2 emissions

The baseline emission factors (used to calculate emissions for the alternative scenario) and project emission factors (used to calculate emissions from actual projects) are presented on the next page. Below, the considerations for electricity and district heating project are outlined.

Electricity

The highly interconnected regional electricity market is the cornerstone of the Nordic energy system, and it can serve as a key enabler for further emissions reductions in the decades ahead. It can also be expected that European energy markets will be increasingly interconnected, with energy traded cross-border to an increasing degree.

In line with the recommendations of the Nordic Position Paper, Kommuninvest has chosen an EU Mainland grid factor including the UK and Norway as the baseline as the relevant baseline for electricity. The rationale is that the Nordic electricity market is already characterised by a high level of interconnection, also with neighboring countries in the Northern European region. Furthermore, the integration of European electricity markets is planned to increase in the coming years and decades, which is the relevant time perspective for most investments. Regardless of whether the energy balance is characterised by an export surplus or a need for imported electricity, added renewable energy capacity and reductions in energy use in the Nordic region translate into the crowding out of more carbon-intensive energy production elsewhere. Using a marginal approach for assessing the environmental benefit, rather than an average approach, is in accordance with a consequential perspective for investments.

In line with IFI recommendations[7], the Nordic Position Paper recommends the use of a Combined Margin (CM) for the grid that is comprised of an Operating Margin (OM) and a Build Margin (BM). However, the Nordic Position Paper deviates slightly from the IFI recommendations as regards intermittent generation, and recommends applying a CM of 1/3 OM and 2/3 BM for all relevant projects. The CM used in this report is 191 kg CO_2e per MWh.

District heating

In the Nordic countries, district heating (the term is explained in footnote 5 on page 51) has successfully enabled the transition from fossil fuel based heating systems to heating systems based primarily on renewable energy sources. Remaining fossil fuel use is today being gradually substituted and phased out.

The systems of district heating (and district cooling) are fundamentally local/regional and not interconnected on a national or Nordic

7) International Financial Institution (IFI) Framework for a Harmonized Approach to Greenhouse Gas Accounting, November 2015.

basis. Kommuninvest has commissioned an external advisor (Profu) to develop a baseline emission factor for district heating for Sweden, based on avoided mix of alternative heating technologies. This estimated baseline figure for district heating in Sweden amounts to 56 kg/MWh, representing an avoided alternative heating mix of 5 percent biofuel boilers, 55 percent geothermal heat pumps, 17 percent air/water heat pumps, 21 percent exhaust air heat pumps and 2 percent gas boilers.

Readers are advised that this figure represents a national average for what are essentially locally based energy systems, in order to facilitate calculations. Using national averages is feasible for most investment projects financed by Kommuninvest, but local circumstances and actual changes in production mix are considered for certain projects related to increased interconnection, energy efficiency and other changes in the production mix.

For the calculation of impact, Kommuninvest compares baseline emissions with actual or expected project emissions. For district heating projects in the renewable energy category, Kommuninvest seeks to calculate project emissions based on the national average emission factor for district heating in Sweden. An additional environmental benefit of 28 kg/MWh, as a national average, is ascribed due to avoided alternative waste treatment (land fill and methane leakage). In certain cases, where financed projects target a change in fuel mix, Kommuninvest calculates impact based on local data.

For district heating projects in the energy efficiency category, we calculate project emissions based on local emissions. No additional benefit for avoided alternative waste treatment is applied.

BASELINE EMISSION FACTORS (USED TO CALCULATE ALTERNATIVE EMISSIONS SCENARIO), SCOPE 1 AND 2

Type	Emission factor	Comment
Variable electricity generation, e.g. wind and solar power projects	191 kg CO_2e/MWh	EU25+UK&Norway: Combined Margin (1/3 Operating Margin (OM) 358 kg CO_2e/ MWh + 2/3 Build Margin (BM) 108 kg CO_2e/ MWh)[1]
Firm electricity generation e.g. hydropower projects	191 kg CO_2e/MWh	See above
Electricity consumption from the grid, e.g. green buildings and energy efficiency projects	191 kg CO_2e/MWh	See above
Electricity generation in district heating projects	191 kg CO_2e/MWh	See above
Heat consumption from the grid, e.g. green building and energy efficiency projects	51,4 kg CO_2e/MWh	Swedish average for heating production from district heating including upstream emissions from production and transport (Scope 3), 2022[2]
Heat generation in district heating projects	56 kg CO_2e/MWh	Estimated national Swedish average for avoided alternative heating[3]
Waste incineration in district heating projects	28 kg CO_2e/MWh	Estimated national Swedish average for avoided alternative waste treatment[4]
Diesel (vehicle fuel)	2.4 kg CO_2e per liter	[5]
Passenger cars	190 gram CO_2e /km	Weighted forecast for average Swedish car fleet in 2021, WTW[6]

1) Calculation by Kommuninvest in November 2019, based on IFI Interim Dataset of Harmonized Grid Factors 11.05.2019, as provided by Nordic Investment Bank.
2) Swedenergy.
3) Profu, 2023.
4) Swedenergy (calculations by Profu).
5) Swedish Energy Agency & The Swedish Construction Federation.
6) The Swedish Transport Administration, 2023.

PROJECT EMISSION FACTORS (USED TO CALCULATE ACTUAL PROJECT EMISSIONS), SCOPE 1 AND 2

Type	Emission factor	Comment
Variable electricity generation, e.g. wind and solar power projects	0 kg CO_2e/MWh	–
Firm electricity generation, e.g. hydropower projects	0 kg CO_2e/MWh	–
Electricity generation in district heating projects	70 kg CO_2e/MWh	Swedish average for electricity production from district heating including upstream emissions from production and transport (Scope 3), 2022[1]
Heating generation in district heating projects	51,4 kg CO_2e/MWh	Swedish average for electricity production from district heating including upstream emissions from production and transport (Scope 3), 2022[1]
Biogas generation projects	0 kg CO_2e/MWh	–

1) Swedenergy.

Collected data and Climate impact calculation

Collected data represents both the information that Kommuninvest asks borrowers to provide in Green Loan applications and annual follow-up reporting, but also additional data collected in dialogue with our green loan borrowers. Not all projects have provided all of the information indicated in this section.

RENEWABLE ENERGY

Eligible Projects in the Renewable energy category exploit or intend to exploit various types of renewable energy sources, in order to expand capacity or replace or offset existing or planned fossil fuel-based energy production and supply.

Renewable energy sources that can be approved for Kommuninvest financing include solar and wind power, geothermal energy, bio-energy, bioenergy and biogas from waste, as well as small-scale hydro power. The maximum share of fossil fuels in district heating projects is 10 percent (peat is treated as a fossil energy source). If fossil waste fractions are used for energy extraction the share of fossil energy is a maximum 20 percent.

The table below outlines the data input collected from Eligible Projects as well as the methodology applied when calculating the environmental impact.

Sub-category	Collected data	Climate impact calculation
Bioenergy	• Annual production of bioenergy (biodiesel, bioethanol, biogas, CNG[1] and other biofuels), measured in MWh. • Annual delivery of specific bioenergy measured in MWh.	Annual climate impact (CO_2e) = Annual production of renewable energy in MWh* baseline emissions factor – Annual production of renewable energy (MWh)* project emission factor. Note: Different baseline emission factors and project emission factors are applied to different sub-categories. These are presented on the preceding page.
Wind, wave, solar and geothermal	• Installed capacity, in MW. • Estimated annual production of electricity, in MWh.	See above
District heating	• Estimated or actual annual output of heating and electricity, in MWh.	See above

1) Compressed Natural Gas (Sw:"fordonsgas") from bioenergy plants

GREEN BUILDINGS

Eligible Projects in this category are intended to reduce energy usage in new or existing buildings, resulting in a reduction in net external energy demand and a reduction in CO_2 emissions.

Impact is reported in relation to the relevant building regulation that has been in force for since the launch of the Kommuninvest Green Bonds Framework (Boverket's Building Regulations BBR 21, BBR 25 and BBR 29).

Sub-category	Collected data	Climate impact calculation
New buildings	• Heated surface area in square metres (Atemp). • Estimated annual heating consumption of the building, measured in kWh/Atemp in accordance with applicable Swedish regulations. • Estimated annual electricity consumption of the building, measured in kWh/Atemp. • Required maximum energy consumption of the building, measured in kWh/Atemp. • Annual production of installed solar panels, measured in kWh/ Atemp.	Annual climate impact (CO_2e) = Energy savings in consumption in MWh * (share of energy used as electricity in the building * baseline factor for electricity + share of energy used as district heating in the building * baseline factor for district heating) + Production of solar energy in MWh * baseline factor for electricity Note: The reference building is assumed not to produce any solar power, and to have a proportion between heat and electricity consumption which is equivalent to the project building.
Energy efficiency	• Heated surface area square metres (Atemp), • Annual energy use before the investment, in MWh. • Annual energy use after the investment, in MWh.	Annual climate impact (CO_2e) = ((Heat consumption of building pre investment in MWh* baseline emissions factor for heat consumption + Electricity consumption of building pre investment in MWh* baseline emissions factor for electricity consumption) – (Heat consumption of building post investment in MWh* baseline emissions factor for heat consumption + electricity consumption of building post investment in MWh* baseline emissions factor for electricity consumption)) Note: The relationship between heat and electricity consumption of the building pre investment may differ from that of the building post investment.
Major renovations	• Heated surface area in square metres (Atemp). • Estimated annual heating consumption of the building before/after renovation, measured in kWh/Atemp in accordance with applicable Swedish regulations. • Estimated annual electricity consumption of the building before/after renovation, measured in kWh/Atemp. • Required maximum energy consumption of the building, measured in kWh/Atemp. • Annual production of installed solar panels, measured in kWh/ Atemp.	Annual climate impact (CO_2e) = ((Heat consumption of building pre investment in MWh* baseline emissions factor for heat consumption + Electricity consumption of building pre investment in MWh* baseline emissions factor for electricity consumption) – (Heat consumption of building post investment in MWh* baseline emissions factor for heat consumption + electricity consumption of building post investment in MWh* baseline emissions factor for electricity consumption)) Note: The relationship between heat and electricity consumption of the building pre-investment may differ from that of the building post investment.

OTHER PROJECT CATEGORIES

For project categories outlined below, no generally applicable calculation model is used, Kommuninvest relies on project data provided by clients. More elaborate impact analysis is possible to undertake in relation to these projects, and we seek to develop our reporting every year. The choice of indicators can also be expected to undergo revision as more knowledge is gathered and best practices are developed.

Public transportation

Eligible Projects are intended to increase transportation of goods and passengers while consuming a minimal or zero amount of fossil fuels, resulting in a reduction of GHG emissions.

Requested data

- Number of kilometres per year with clean transport solutions.
- Number of people the project will affect each year.
- If feasible: Annual energy savings, reduction in greenhouse gas emissions and/or local emissions, or amount of greenhouse gas emissions and/or local emissions that will be avoided as a result of the investment.

Climate impact calculation

Calculation is performed by comparing the investment to an alternative scenario, typically provided by the customer. Here, Kommuninvest applies emissions factors as outlined in the table on page 53. When the client has not provided an alternative scenario, averages and templates are applied in order to reach conclusions.

Waste management

Eligible Projects are intended to either increase recycled waste capacity, improve energy efficiency, reduce the amount of release of harmful substances or meet other appropriate conditions set by Kommuninvest.

Requested data

- Number of tonnes of waste expected to be processed by the facility each year.
- An estimate of the reduction in greenhouse gas emissions/the amount of greenhouse gas emissions that will be avoided as a result of the investment, in tonnes of CO_2e.
- If feasible: Estimate annual energy savings attributable to the investment, in kWh.
- Expected improvement in material recovery rate or other target for improved resource use.
- For biogas plants: Expected annual production volume.

Water and wastewater management

Eligible Projects are intended to reduce leakage or improve filtration of harmful substances in the water purification process, increase output measured in person equivalents (PE) or meet other appropriate conditions set by Kommuninvest.

Requested data

- Number of person equivalents (PE) of water or wastewater the plant processes, identifying any increase that can be attributed to the investment.
- Volume of freshwater and wastewater treated.
- Reductions in emissions of nitrogen, phosphorus and oxygen-consuming substances (BOD).
- Qualitative indicators/targets for adaptation to climate change (managing urban runoff etc.), with a description of weather-related or climate-related problems that will be mitigated by the investment.
- Where relevant, amount of electricity, biogas or other energy carrier expected to be produced each year, identifying any increase that can be attributed to the investment.

Adaptation measures

This category is dedicated towards adaptation measures to new environmental conditions, due to inter alia anticipated increasing rainfall, rising sea levels, or increased drought. Projects deemed eligible on a case by case basis. Relevant indicators are dependent on the characteristics of the project, and determined by Kommuninvest in consultation with the borrower.

Environmental management

Eligible Projects are intended to promote sustainable environment development in areas other than climate change. Measures include preserving biodiversity, sustainable agriculture and improvement of eco-systems. Projects are deemed eligible on a case by case basis. Relevant indicators are dependent on the characteristics of the project, and determined by Kommuninvest in consultation with the borrower.

DEFINITIONS USED IN THIS DOCUMENT

Atemp	All internal area of a building which is heated to more than 10 ºC in sq.m. Atemp is the area which energy consumption in Sweden is calculated.
CO_2e	Carbon dioxide equivalent
kWh, MWh and GWh	Kilowatthour, Megawatthour and Gigawatthour
PE	Population equivalent

Kommuninvest is a Swedish municipal cooperation set up in 1986 to provide cost-efficient and sustainable financing for local government investments in housing, infrastructure, schools, hospitals etc. The cooperation comprises 295 out of Sweden's 310 local governments, of which 280 municipalities and 15 regions. Kommuninvest is the largest lender to the Swedish local government sector and one of the largest credit institutions in Sweden. At year-end 2023, total assets were SEK 569 billion (USD 57 billion). The head office is located in Örebro.

KOMMUNINVEST

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