

# Samhällsbyggnadsbolaget i Norden AB



## Green Bond Framework

# Introduction

## Company overview

Samhällsbyggnadsbolaget i Norden AB (SBB) was founded in March 2016 by Ilija Batljan with the aim of building a strong and stable Nordic real estate company focused on residential and community service properties. The company's strategy is to have a long-term view on ownership, management and development of rent regulated residential properties in Sweden and low-risk community service properties in the Nordic region. SBB also carries out value-creating activities such as redevelopment and renovations of existing properties as well as conversions of commercial properties in central locations with proximity to efficient infrastructure into residential properties.

SBB is listed on Nasdaq First North Premier.

World in Property has awarded SBB the Property Company of the Year 2017, a price recognizing companies accomplishing significant growth within its field during the year.

## Sustainability

Social engagement is important to SBB and throughout its operations the company wishes to contribute to a sustainable society with functional properties where residents are able to influence their immediate surroundings through close dialogue with SBB as owner and property manager.

SBB works actively with social and environmental sustainability across its operations, and sustainability goals and considerations are integrated in the individual business plans for each geographical region. By integrating environmental and social considerations into the business planning and decision-making processes, the company wishes to contribute to reaching the goal set forth by the Paris Climate Agreement to limit global warming.

SBB also supports the principles of the UN Global Compact and the Sustainable Development Goals,



SDG 11: Make cities and human settlement inclusive, safe, resilient and sustainable

*By 2050, 70 % of the world's population will live in cities, making cities critical in achieving a sustainable future for the world. Businesses, together with Governments at various levels, and civil society organizations and citizens are collectively engaged in pursuing ambitious objectives to make cities more competitive, safe, resource-efficient, resilient and inclusive. Key areas of need in achieving progress on Goal 11 are: 1) identifying and agreeing the most sustainable ways to achieve the targets- what activities should be ceased and which ones accelerated; 2) building appropriate capacity and skills across these stakeholder groups to deliver; 3) attracting/securing finance, innovative designs and delivery models and projects for integrated city infrastructure—including buildings, energy, mobility, telecommunications, water, sanitation and waste management services, and; 4) ensuring practical processes for multi-stakeholder engagement in all stages of urban development that build consensus, inclusion, resilience and sustainability.*

*Businesses can help cities navigate these challenges and turn a high-level vision into practical and implementable action plans. Business can play a vital role not only in providing specific infrastructure, technology, services and financing solutions, but also in contributing to the strategy that will support the overall optimization of urban systems to create inclusive, safe, sustainable, and disaster resilient cities. Cities seeking to realize their sustainability objectives can benefit from engaging with business early in the planning and strategy development process, leveraging the capability of business to identify innovative and cost-effective solutions to complex, cross-cutting urban sustainability challenges.*

SDG Compass <https://sdqcompass.org/sdq/sdq-11/>

where the company has chosen to focus on Goal 11 – “Make cities and human settlements inclusive, safe, resilient and sustainable”.

SBB's strategies for corporate responsibility and sustainability are mainly described in the company's Code of Conduct and Sustainability Policy. All employees are required to keep themselves updated on these policy documents as well as current applicable laws and regulations. Employees are also required to report detected deviations with environmental impacts on managed properties in the company's system for deviation reporting.

## Sustainable property development

With a strong population growth and an increasing number of elderly, the need for both residential and community service properties is on the rise. New properties need to be built, while a large portion of older properties are in need of renovation and modernization to fulfil current requirements and standards. SBB stands well positioned to meet these market developments. As one of the Nordic region's strongest real estate companies focused on community service properties, and with a business plan to construct and modernize properties in a sustainable way, SBB is a long-term partner to many municipalities, county councils and other stakeholders in this sector.

As part of the company's property acquisition process, SBB evaluates the geographical locations in terms of proximity to public transportation. SBB's viewpoint on modern sustainable living is that tenants shall have access to healthcare, schools and care services without having to use a car. Most of the company's acquired development properties are therefore located close to rail, metro or tram stations and all development areas are in designated priority transport locations.

SBB puts high emphasis on reducing the environmental impact throughout the company's operations. This includes choosing energy efficient equipment, using environmentally friendly materials for construction, refurbishing and maintenance activities, reducing waste and promoting recycling as well as minimizing transports.

Upgrading existing residential and community service properties into modern standards yields both environmental and social benefits by reducing energy consumption and greenhouse gas emissions as well as adapting facilities to current community needs. Adapting facilities to current community needs may include refurbishments to better suit modern education and healthcare, improved accessibility for tenants with disabilities, better air quality as well as better indoor climate.

SBB encourages all its partners, suppliers and contractors to follow environmentally friendly procedures. When entering new contracts with such stakeholders, an assessment of their environmental and overall sustainability procedures is part of the decision-making process.





## SBB Green Bonds

By setting up this green bond framework, aligned with the Green Bond Principles published in June 2018 by the International Capital Market Association, SBB offers investors further insights into the company's sustainability strategy and commitments and thereby an opportunity to support the transition to a low carbon economy.

SBB has worked with Danske Bank and DNB to develop this green bond framework. CICERO (Center for International Climate and Environmental Research-Oslo) has provided a second opinion to the green bond framework, which is publicly available at SBB's website: <http://sbbnorden.se/>.

**15<sup>th</sup> June 2018**

Ilija Batljan

*Chief Executive Officer*

Eva-Lotta Stridh

*Chief Financial Officer*

Peter Olausson

*Residential Manager*

# SBB Green Bond Framework

The legal documentation for each individual SBB green bond (Green Bond) shall provide a reference to this framework under the use of proceeds section. SBB can issue Green Bonds as unsubordinated notes and subordinated notes.

## Use of Proceeds

The net proceeds from the issuance of Green Bonds will refinance a, by SBB defined, targeted portfolio of rent regulated residential apartment houses, built between 1900 and 1991 but predominately between the 1950s and 1980s (Green Project Portfolio<sup>1</sup>), and related investments. Meaning, the acquisition of properties and the related investments by SBB promoting the transition to low-carbon and climate resilient growth as determined by SBB and in line with the SBB Sustainability Policy.

SBB is committed to, over a five-year period, performing Green Project Portfolio energy efficiency investments, reducing the purchased amount of energy (kWh) per heated square meter ( $A_{temp}$ ) and year (Energy Reduction) by at least 30 percent<sup>2</sup>. 30 percent less energy consumption corresponds to approximately 870 tonnes of CO<sub>2</sub>-equivalent emissions reduced or avoided annually. An external consultant will verify the reduced energy consumption of the individual properties in the Green Project Portfolio and confirm that the combined energy savings correspond to at least 30 percent compared to the levels prior to renovation and energy efficiency investments.

To achieve an Energy Reduction of at least 30 percent, SBB will perform a number of energy efficiency investments in the targeted Green Project Portfolio. SBB has calculated the approximate energy efficiency outcome of the separate investment categories. iNEX Internationell Exergi AB, a consultancy firm focused on energy,

ventilation, plumbing and thermodynamics, has verified these calculations.

Other relevant investments to increase living conditions in the apartments of the Green Project Portfolio may also be conducted. Such investments may be in the form of climate resilience investments or investments aimed at increasing tenant functionalities.

The value eligible for Green Bond financing is the current market value of the Green Project Portfolio. As SBB invests in the buildings included in the Green Project Portfolio, the market value is likely to increase and make room for additional Green Bond financing. The total amount of Green Bonds outstanding, financing the Green Project Portfolio, cannot surpass the combined market value of the Green Project Portfolio. If any part of the Green Project Portfolio is used for other secured financing, this part cannot be financed with Green Bonds.

If, for any reason, a singular apartment house is sold or for other reasons need to be excluded from the portfolio, SBB will replace the asset with a similar apartment house, as detailed below.

## Green Project Portfolio

The Green Project Portfolio corresponds to a targeted, and by SBB predefined, portfolio of rent regulated residential apartment houses, mainly built in the period between the 1950s and the 1980s, with proximity to public services and public transportation. Details of the Green Project Portfolio are further described in Appendix 1.

These apartment houses were acquired by SBB over a period starting in 2016 and ending in May 2018, with the ambition to renovate into modern sustainable living standards. To SBB, modern sustainable living standards includes proximity to public services and public transportation as well as increased living conditions such as modernisation of

<sup>1</sup> For more information on the Green Project Portfolio, see Appendix.

<sup>2</sup> Subject to yearly temperature harmonization as per Sveriges meteorologiska och hydrologiska institute (SMHI).

the interior, increased tenant functionalities and a substantially lower energy consumption than was the standard when these apartment houses were built.

Differing characteristics among the buildings in the Green Project Portfolio, such as current status and geographical location, may result in different Energy Reduction outcomes for the individual buildings. Some buildings may achieve as much as a 50 to 60 percent energy reduction, whilst others will achieve less. Every single building in the Green Project Portfolio must at least achieve an Energy Reduction of 15 percent in the given timeframe of 5 years.

The Green Project Portfolio consists of rent regulated residential houses having no link to fossil energy generation, nuclear energy generation, research and/or development within weapons and defence, potentially environmentally negative resource extraction (such as rare-earth elements or fossil fuels), gambling or tobacco.

If, for any reason, an asset in the Green Project Portfolio needs to be replaced, the new asset must meet the following criteria;

- Rent regulated residential apartment house<sup>3,4</sup>,
- Built in the 20<sup>th</sup> century, and
- Proximity to public services and public transportation.

## Green Project Portfolio investments

A detailed Energy Reduction action plan will broadly be applied to the Green Project Portfolio. To accommodate for the differing characteristics of the individual buildings in the Green Project Portfolio, such as current status and geographical location, individual Energy Reduction action plans may be applied.

In addition to the Energy Reduction action plan, SBB might use other measures applicable to the specific

building or in line with new technology, such as installation of rooftop solar units.

### *Energy Reduction action plan*

Table 1 outlines the planned investments aiming to reduce the energy consumption of the Green Project Portfolio. Expected energy efficiency outcomes are approximations calculated by SBB and verified by iNEX Internationell Exergi AB. Energy savings may differ between individual buildings due to differing characteristics.

All energy efficiency calculations are based on the assumption that the number of individuals living in and using the premises will remain unchanged. Some investment actions are dedicated towards the same area of improvement, hence all actions listed below cannot be applied to the same building (e.g. depending on circumstances you chose a FTX- or a FX-system).

### *Sustainable living investments*

Sustainable living investments are defined as investments to increase living conditions, such as modernisation of the interior and increased tenant functionalities. It may also include climate resilience investments such as new roofing, renovation of facades and drainage.

Many apartments in the Green Project Portfolio have fewer rooms per square meter compared to apartments built according to current building standards. When performing renovation works, and where possible, SBB therefore often adds an additional room. This enables the apartments to house an increased number of individuals. Given the lower energy consumption of the renovated apartment houses in relation to comparable buildings and the proximity to public communication, it is beneficial to enable for a larger number of tenants.

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<sup>3</sup> No link to fossil energy generation, nuclear energy generation, research and/or development within weapons and defense, potentially environmentally negative resource extraction (such as rare-earth elements or fossil fuels), gambling or tobacco.

<sup>4</sup> If rent regulations for rental residential apartment houses significantly change during the life of the bond, non-regulated residential apartment houses could be included.

**Table 1. Energy efficiency investments**

Action	Lowering the buildings total energy consumption, in percentage	Explanation
<b>Geothermal heating system<sup>5</sup></b>	30-40 percent	When used for both heating of the premises and the tap water.
<b>FTX-system</b>	15-20 percent	Recovers heat from exhaust air with 80% efficiency.
<b>FX-system</b>	10-15 percent	Recovers heat from exhaust air with 50% efficiency.
<b>Exhaust air heat pump</b>	15-25 percent	Leads heat energy from exhaust air to a heat pump.
<b>Pressure and temperature controlled fans</b>	5-10 percent	Reduces ventilation unit electricity consumption by 50 percent and ventilation air heating energy consumption by 15 percent <sup>6</sup> .
<b>Pressure controlled toilet pumps</b>	1 percent	Reduces recirculation pump electricity consumption by 30 percent.
<b>Building automation system<sup>7</sup></b>	10-15 percent	Heat regulation based on weather forecast information.
<b>Adjustment of heating system and installation of thermostatic valves</b>	5-10 percent	Reduces heating energy consumption by 10 percent.
<b>Additional insulation of attics and roofs</b>	5 percent	Reduces heating energy consumption by 10 percent.
<b>Energy efficient windows</b>	3-5 percent	Reduces heating energy consumption by 5 percent.
<b>Efficient water taps</b>	2 percent	Reduces water consumption by 25 percent and tap water heating energy consumption by 10 percent.
<b>LED lighting</b>	5 percent	Reduces lighting electricity consumption by 95 percent.

<sup>5</sup> Coefficient of performance (COP) 3.5 (meaning every added unit of electricity gives 3.5 units of heat).

<sup>6</sup> Heating of ventilation air accounts for about 30 percent of the total building energy consumption.

<sup>7</sup> Supervision, Control and Data Acquisition (SCADA), enabling monitoring and remote operation of properties, for instance energy consumption, ventilation and heating.

## Green Project Portfolio evaluation and selection process

The corporate responsibility principles of SBB build on the ten principles of the UN Global Compact and are recorded in the Code of Conduct and, Sustainability Policy as well as policies concerning human resources, communications, safety and security, risk management and sponsorships. SBB comply with international accounting standards and the Swedish Corporate Governance Code.

### Green Project Portfolio

As with all SBB acquisitions, the acquisitions of the rent regulated residential apartment houses forming the Green Project Portfolio have all been evaluated according to SBB's corporate responsibility principles, laws and regulations.

SBB has experience of working proactively in assessing climate risks with regard to floods by performing adaptation and resilience investments and measures in roads and water barriers to protect against future possible consequences of climate change. Before any real estate acquisition, SBB performs assessments of low points where water could possibly accumulate in heavy downpours. For the avoidance of doubt, none of the buildings in the Green Project Portfolio was assessed to fall into the risk why we don't predict any such investments.

Inclusion in the Green Project Portfolio followed a two-step process. This process is also applicable if, for any reason, a singular apartment house, part of the Green Project Portfolio, is sold or for other reasons need to be excluded from the Green Project Portfolio, and where SBB replaces the asset with a similar apartment house.

- i. The SBB Business Controller team presents relevant buildings, meeting the applicable Green Projects Portfolio criteria to the Green Bond Committee.
- ii. The Green Bond Committee solely makes the decision to include the new building in the

Green Project Portfolio. A decision to include a building will require a consensus decision by the Green Bond Committee. The decision is documented and filed.

The Green Bond Committee consists of:

- SBB Chief Executive Officer
- SBB Chief Financial Officer
- SBB Residential Manager

The list of Green Project Portfolio energy efficiency investments has been defined by SBB in cooperation with iNEX Internationell Exergi AB and these predefined investments categories do not require additional approval from the Green Bond Committee. The annual newsletter will summarize the Green Project Portfolio energy efficiency investments undertaken during the year. Details on reporting are further described under "Reporting and Transparency".

## Management of Proceeds

An amount equal to the Green Bond net proceeds credits a separate account (Separate Account) and will only support SBB's financing of assets in the Green Project Portfolio and related investments, or to repay a Green Bond. The proceeds in such account are kept separated from other accounts to ensure and enable separate monitoring and tracking of the Green Bonds net proceeds. SBB will document all transfers to and from such Separate Account, to secure tracking of the funds and to simplify the annual review. The Treasury Department is responsible for the allocation of Green Bond net proceeds to the relevant and approved Green Project Portfolio assets and their related investments.

In the event the Separate Account has a positive balance, SBB will have the right to either: (i) temporarily deposit such positive balance with approved financial institutions as defined by the company's Financial Policy or (ii) temporarily invest in debt securities from issuers with a minimum credit rating of BBB- from Standard & Poor's or equivalent rating from another rating institute and with a maximum maturity of 12 months.

Temporary investments or deposits will not be made in entities with a business plan focused on fossil energy generation, nuclear energy generation, research and/or other carbon dioxide intense activities, development within weapons and defense, potentially environmentally negative resource extraction (such as rare-earth elements or fossil fuels), gambling or tobacco.

As long as Green Bonds are outstanding and the Separate Account has a positive account balance, such positive account balance will in relation to amounts allocated to Green Projects, be adjusted at least every fiscal quarter. SBB will, until full allocation of such Green Bond net proceeds has taken place, in its reporting disclose the amount of Green Bond net proceeds not yet allocated.

## Reporting and Transparency

SBB will annually, and until the maturity of Green Bonds issued, provide investors with an annual newsletter, publically available on its website <http://sbbnorden.se/>. The annual newsletter will include:

- i. A summary of Green Bond developments.
- ii. The outstanding amounts of issued Green Bonds.
- iii. The balance on the Separate Account (including any, temporary investments or deposits and Green Bond repayments).
- iv. Green Project Portfolio.

SBB intends to show reduced or avoided emission of CO<sub>2</sub>-equivalents in proportion to the eligible part financed or refinanced with net proceed from Green Bonds. SBB will use a baseline calculation method taking into consideration energy savings, avoided energy consumption and reduced usage of fossil energy sources.

Such impact reporting is provided with the reservation that not all related data can be covered and that calculations therefore will be on a best

intention basis. E.g. if energy efficiency investments are still under construction and not yet operational, SBB will provide an approximation of energy consumption savings, confirmed by an external consultant, as presented under the Energy Reduction action plan, until the actual outcome is confirmed.<sup>8</sup>

The following metrics for impact reporting will be included in the annual investor letter:

Per individual apartment house:

- a) Pre and post renovation energy consumption disclosed as absolute consumption (MWh) and intensity (kWh per A<sub>temp</sub>).
- b) The Energy Reduction.
- c) Calculated annual CO<sub>2</sub>-equivalent emissions reduced or avoided (tonnes) and intensity (grams A<sub>temp</sub>).
- d) The percentage of total energy consumption supplied by renewable energy.
- e) The external consultant confirmation to every individual property Energy Reduction of the Green Project Portfolio.

Aggregation of the Green Project Portfolio:

- a) The Energy Reduction.
- b) Calculated annual CO<sub>2</sub>-equivalent emissions reduced or avoided (tonnes).
- c) The external consultant confirmation of the Green Project Portfolio Energy Reduction.



<sup>8</sup> Given that renovation work may include increasing the number or rooms, SBB has the possibility to take the increased number of tenants and thereby the added need of e.g. heated tap water into consideration when calculating Energy Reduction.

# Appendix 1

## Green Project Portfolio

SBB's Green Project Portfolio contains buildings primarily built during the 50's and 70's. The technical standard of the portfolio buildings is comparatively equivalent, where the heating needs are met by district heating except for the "Gångsta 1:2" building, which has a geothermal heat pump topped up with heating oil. For the majority of the buildings, the ventilation solution is mechanical exhaust without recycling, which is typical for buildings built during this period. There are great potential to improve energy performance partly through different heat pump solutions, but mainly by installing solutions for recycling energy from exhaust air as well as wastewater. Additionally, energy consumption can be reduced further by improving the climate scale through, for example, additional insulation of attics and the replacement of windows.

### *A selection of buildings in the Green Project Portfolio*

#### Tellus 1

Residential building built in 1969, comprising 476 apartments in Motala. Renovation of the apartments into new modern standards are taking place continuously and since the autumn of 2017 about 65 apartments have been renovated. In conjunction with the renovations, bathtubs have been replaced with environmentally friendly showers and all apartments are optimized in terms of space by creating additional rooms.



#### Gångsta 1:2

Residential buildings located in the periphery of Sundsvall, where several buildings were constructed as workers' houses for neighbouring industries in the early 1900s. The buildings were supplied entirely by oil until a few years ago when geothermal heating was installed by the former owner. The instalment is, however, undersized and the temperature of the drilling holes is below zero due to a too large energy output, resulting in low efficiency and therefore consumption must be topped up with heating oil.



## Stensiken 1

Residential building located in Tidaholm, comprising 12 residential buildings with a total of 234 apartments. The area has long been viewed as a “bad neighbourhood” which is something SBB aim to change. Since the spring of 2018, investments in modernizations of all apartments have been taking place. In addition, investments will be made in the external environment. There is great potential for energy savings through, among other things, additional insulation of attics in conjunction with renovating the roof.



## Method of calculation

Calculated energy consumption per building in the Green Project Portfolio is presented in the table on the next page. Initial calculation data per building is based on the below model assumptions, as verified by iNEX Internationell Exergi AB:

- Energy figures are based on the 2017 district heating consumptions per building in the Green Project Portfolio. Out of the total district heating consumption, 75 percent is assumed related to heating of the building (calculated annual heating consumption is temperature harmonized) and 25 percent related to tap water heating. Building electricity is assumed to correspond to 10 percent of the district heating consumption (of which ventilation accounts for 50 percent, lighting 40 percent and circulation pumps 10 percent). For explanatory reasons, the 10 percent electricity consumption is additional to the district heating consumption – i.e. the total building energy consumption is, in the initial calculation data model, 110 percent of the district heating consumption (where annual heating consumption is temperature harmonized).
- Total CO<sub>2</sub>-equivalent emissions are calculated based on heating system and its associated average CO<sub>2</sub>-equivalent emissions per MWh and year. CO<sub>2</sub>-equivalent emissions associated with district heating differ depending on distributor and area while emissions associated with electricity and heating oil is based on the Swedish average<sup>9</sup> and a global average for heating oil<sup>10</sup>.
- Total expected reduction in CO<sub>2</sub>-equivalent emissions is calculated assuming the base case scenario of reducing the purchased amount of energy (kWh) per heated square meter ( $A_{temp}$ ) and year by at least 30 percent<sup>11</sup>. Total CO<sub>2</sub>-equivalent emission reduction is calculated to be 259 tonnes for the Gångsta building (the only property in the Green Project Portfolio still using heating oil, displayed in the third row of the table below) due to planned geothermal heating system investments replacing the heating oil component.
- Total Energy Reduction is an estimate and reduction depends on selected energy system solution, the total CO<sub>2</sub>-equivalent emission reduction may be even larger than the 868 tonnes indicated in the below table.

<sup>9</sup> <https://energiradgivningen.se/klimat/miljopaverkan-fran-el>

<sup>10</sup> <https://www.iea.org/publications/freepublications/publication/CO2EmissionsfromFuelCombustionHighlights2017.pdf>

<sup>11</sup> Subject to yearly temperature harmonization as per Sveriges meteorologiska och hydrologiska institute (SMHI)

## Calculation model of energy consumption and emissions of the portfolio

Property name	Municipality	Building year	Area (m2)	Atemp (m2)	Actual annual district heating consumption (MWh) 2017	Comment	Electricity (MWh)	Building heating from district heating (MWh) (temperature harmonized)	Building heating from oil (MWh)	Tap water heating (MWh) (distict heating)	Total (MWh)	Temperature harmonization factor	Energy performance (kWh/Atemp (m2) and year)	Tonnes CO2-equivalent emissions for district heating /MWh	Share of fossil fuels (%) in the distributor's district heating production	Swedish average CO2/KWh electricity	Tonnes CO2-equivalent emissions/ year
Tellus 1	Motala	1969	36,423	45,529	4,946	1	495	4,080		1236	5,811	1.1	128	0.0250	3%	0.0250	145
Härsta 9:3	Sundsvall	1974	19,216	24,020	3,687	1	369	2,959		922	4,249	1.07	177	0.0830	2%	0.0250	331
Gångsta 1:2	Sundsvall	1900	10,227	12,784		2	1560		350		1,910	1.07	149			0.0250	275
Västland 26:39	Sundsvall	1967	13,406	16,758	2,374	1	237	1,905		594	2,736	1.07	163	0.0830	2%	0.0250	213
Häggesta 4:21	Bollnäs	1967	392	490	96	1	10	74		24	108	1.04	220	0.0780	1%	0.0250	8
Säversta 7:75	Bollnäs	1957	1,586	1,983	344	1	34	268		86	389	1.04	196	0.0780	1%	0.0250	29
Häggesta 7:101+ 7:102	Bollnäs	1973	18,502	23,128	3,568	1	357	2,783		892	4,032	1.04	174	0.0780	1%	0.0250	296
Ren 30:204-351	Bollnäs	1982	13,951	17,439	2,375	1	237	1,852		594	2,684	1.04	154	0.0780	1%	0.0250	197
Ren 30:353+ 30:352	Bollnäs	1983	5,087	6,359	896	1	90	699		224	1,013	1.04	159	0.0780	1%	0.0250	74
Annexet 2	Bollnäs	1937	1,387	1,734	193	1	19	151		48	219	1.04	126	0.0780	1%	0.0250	16
Balder 2, 3 och 4	Bollnäs	1946	912	1,140	198	1	20	154		49	223	1.04	196	0.0780	1%	0.0250	16
Gnistan 2	Bollnäs	1900	1,660	2,075	214	1	21	167		54	242	1.04	117	0.0780	1%	0.0250	18
Korsnäs 2:26,7:1,8:1,2:13	Falun	1900-51,53,61	3,928	4,910	656	1	66	512		164	741	1.04	151	0.0240	4%	0.0250	18
Lilla Näs 3:41	Falun	1958	2,751	3,439	556	1	56	434		139	628	1.04	183	0.0240	4%	0.0250	15
Lilla Näs 3:42-3:43	Falun	1958	3,123	3,904	570	1	57	445		142	644	1.04	165	0.0240	4%	0.0250	16
Fålnäs 4:4 och 4:8	Söderhamn	1991	2,155	2,694	327	3	33	255		82	369	1.04	137	0.0160	0%	0.0250	6
Brunnsbacken 1	Söderhamn	1981	6,225	7,781	1,112	3	111	868		278	1,257	1.04	162	0.0160	0%	0.0250	21
Siskan 3 och 4	Söderhamn	1969	8,962	11,203	1,659	3	166	1,294		415	1,875	1.04	167	0.0160	0%	0.0250	31
Klövervallen 1	Borlänge	1952	10,146	12,683	1,513	1	151	1,180		378	1,710	1.04	135	0.0660	1%	0.0250	107
Årtskidan 1	Borlänge	1952	3,369	4,211	542	1	54	422		135	612	1.04	145	0.0660	1%	0.0250	38
Veteaxet 1	Borlänge	1952	672	840	109	1	11	85		27	124	1.04	147	0.0660	1%	0.0250	8
Kvarnsveden 3:196 & 3:19	Borlänge	1952-1955	9,141	11,426	1,808	4	181	1,410		452	2,043	1.04	179	0.0660	1%	0.0250	127
Yggdrasil 1&2	Skara	1970-1972	9,897	12,371	1,571	1	157	1,273		393	1,823	1.08	147	0.0270	1%	0.0250	49
Valhall 5	Skara	1969	1,455	1,819	440	1	44	357		110	511	1.08	281	0.0270	1%	0.0250	14
Hermod 1-4	Skara	1963	12,198	15,248	1,604	1	160	1,299		401	1,860	1.08	122	0.0270	1%	0.0250	50
Stensiken 1	Tidaholm	1969-1971	17,600	22,000	2,278	1	228	1,845		569	2,642	1.08	120	0.0340	1%	0.0250	88
Letten 1,2	Karlstad	1968	14,381	17,976	2,052	1	205	1,662		513	2,380	1.08	132	0.0440	2%	0.0250	101

<b>Total: 42,835</b>	<b>Green Project Portfolio total annual tonnes of CO2-equivalent emissions: 2,307</b>
	<b>Green Project Portfolio annual minimum reduction (30%): 868</b>

**Comment:**

1. Actual consumption  
2. Geothermal heat pump + oil (consumption calculated based on purchased energy)  
3. April 2017-March 2018  
4. Calculated annual consumption

The part derived from electricity of the Green Project Portfolio total annual tonnes of CO<sub>2</sub>-equivalent emissions, as per calculation above, is based on the Swedish average baseline emission factor for electricity of 25g CO<sub>2</sub> per kWh electricity. In the Position Paper on Green Bond Impact Reporting published in October 2017 by a group of Nordic public sector issuers, Nordic issuers of green bonds are recommended to use the European mainland mix including Norway of 380g CO<sub>2</sub> per kWh electricity.<sup>12</sup> To promote comparability and standardization, calculations to the right are based on both baseline electricity emission factors.

	Baseline electricity emission factor	
	25g CO2 per kWh electricity	380g CO2 per kWh electricity
Green Project Portfolio total annual tonnes of CO2-equivalent emissions	2,307	4,127
Green Project Portfolio annual minimum reduction (30%)	868	1,237

<sup>12</sup> [https://kommuninvest.se/wp-content/uploads/2017/10/NPSI\\_Position\\_paper\\_2017.pdf](https://kommuninvest.se/wp-content/uploads/2017/10/NPSI_Position_paper_2017.pdf)