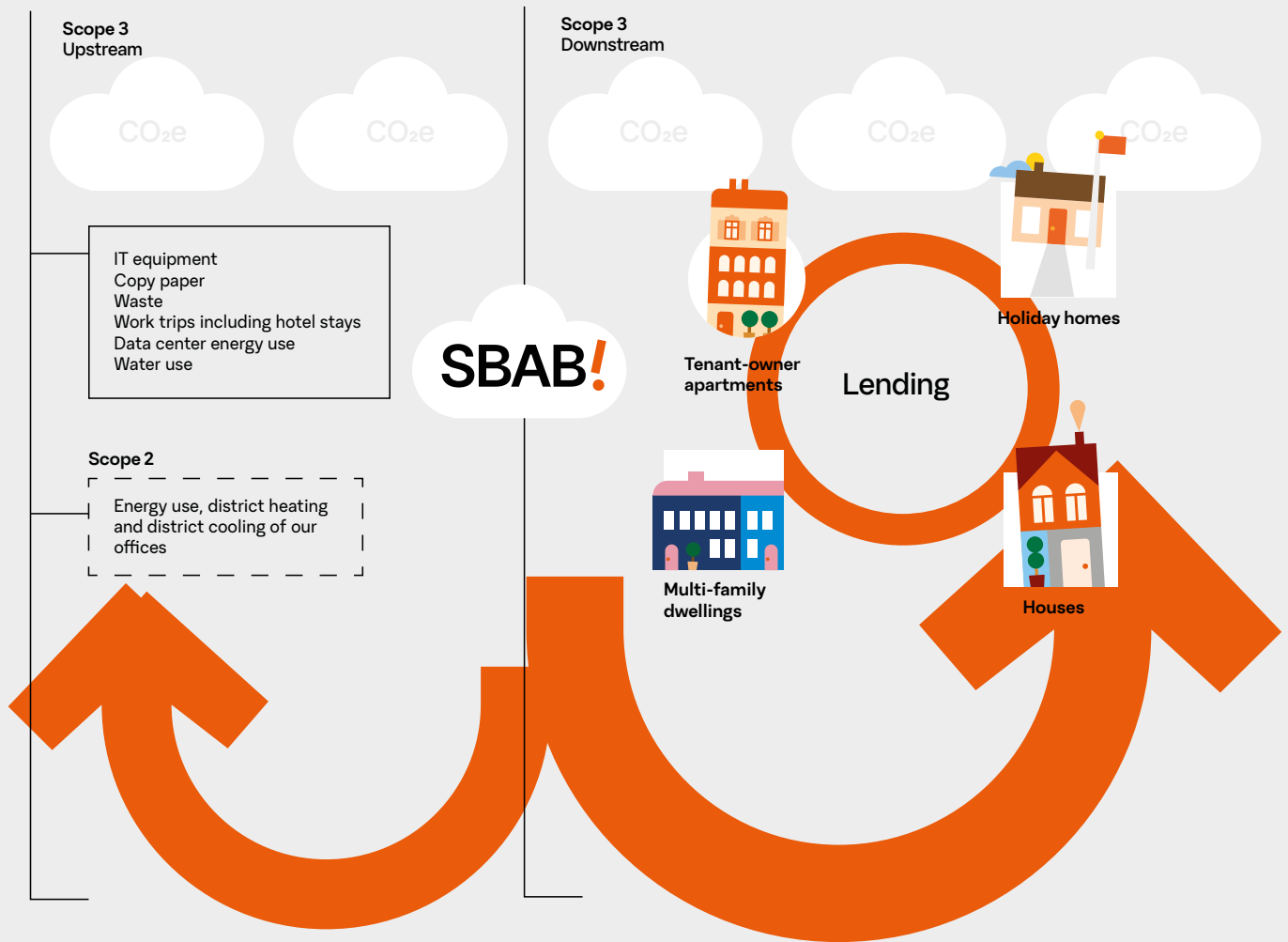


# Climate Report

2022



# SBAB's Value Chain



1) The GHG Protocol includes seven greenhouse gases: Carbon dioxide, CO<sub>2</sub>, Methane gas, CH<sub>4</sub>, Nitrous gases, N<sub>2</sub>O, Hydrofluorocarbons, HFCs, Perfluorocarbons, PFCs, Nitrotrifluoride, NF<sub>3</sub>, and Sulphur hexafluoride, SF<sub>6</sub>. These gases have different global warming potentials (GWP). For example, CO<sub>2</sub>e has potential 1, while CH<sub>4</sub> has potential 25. That is why all gases are converted to carbon dioxide equivalents CO<sub>2</sub>e.

# Introduction

The real estate sector in Sweden is a significant contributor to Sweden's greenhouse gas (GHG) emissions. Our largest climate impact is indirect and through our lending to private, tenant owner association and corporate clients. SBAB prioritizes our work to combat climate change by measuring and reporting our emissions and adopting science based decarbonization targets for our lending portfolio.

The SBAB Climate Report outlines our methodology, data, limitations, and results in calculating our:

- a. financed emissions through lending to private, tenant owner association and corporate clients, and
- b. emissions through our operations.

The Climate Report also presents our decarbonization targets and baselines.



# Financed emissions

## Data and sources

Our dataset includes lending to companies, tenant-owner associations, and private customers, representing our portfolio secured by immovable property located in Sweden. The data used to calculate financed emissions is based on the latest updated information, as of 31 December 2022.

Our largest source of external data is from energy performance certificates (EPC) collected from the Swedish National Board of Housing, Building and Planning (Boverket). The EPC includes data on building type, energy performance (EP), energy

use, energy label, heated floor area (Atemp) and primary heating sources. Data from SBAB's internal systems on the Loan to Value Ratio (LTV) is also used. The LTV is the outstanding loan divided by property value.

The specific emission factors used to calculate our financed emissions, per energy source, is presented below. We apply emission factors for the specific energy source utilized by a building. If the EPC data shows that a building uses a combination of energy sources, an equal distribution between these energy sources and their respective emission factors is applied.

Heating source	Gas emission factor (gCO <sub>2</sub> e /kWh)	Source
Electricity	68.6	IPCC/SCB
Oil	267.3	Natursvårdsverket
District heating	46.1	Energiföretagen
Geothermal heating	0	IPCC / GHG protocol
Gas	204.8	Natursvårdsverket
Biofuel	0	IPCC / GHG protocol

Below is the energy consumption data per building type from the Swedish Energy Authority<sup>2</sup>

Type of building	kWh/m <sup>2</sup>	Source
Single or two-family houses	35	Energimyndigheten (Energiindikatorer i siffror 2022)
Multi-family dwellings	51	Energimyndigheten (Energiindikatorer i siffror 2022)
Premises	127	Energimyndigheten (Energiindikatorer i siffror 2022)
Multi-family dwellings: tenant owner association	15 (29.4% of the electricity usage of apartment buildings)	Boverket - Förslag till svensk tillämpning av nära-nollenergibygnader
Multi-family dwellings: tenant owned apartment	36 (70.6% of the electricity usage of apartment buildings)	Boverket - Förslag till svensk tillämpning av nära-nollenergibygnader

<sup>2</sup> The data is from Energimyndigheten, Energiägget i siffror 2022, latest available data from 2020

### Methodology for properties with an EPC

SBAB's financed emissions calculation is based on the Partnership for Carbon Accounting Financials (PCAF)<sup>3</sup> methodology for real estate exposures. The following formula was used to calculate the financed emissions, with the LTV ratio serving as the attribution factor.

$$\text{Financed emissions} = \sum_{b,e} \underbrace{\frac{\text{Outstanding amount } b}{\text{Property value } b}}_{\text{Attribution Factor}} \times \text{Building energy consumption } b,e \times \text{Emission factor } e$$

(with  $b$  = buildings and  $e$  = energy source)

To transform a buildings energy use to CO<sub>2</sub>e emissions, the following calculation steps are performed:

1. Emission from heating and hot water consumption per square meter [gCO<sub>2</sub>e /m<sup>2</sup>] = Energy Performance [kWh/m<sup>2</sup>] \* Emission factor [gCO<sub>2</sub>e /kWh]<sup>4</sup>
2. Emission from electricity usage per square meter [gCO<sub>2</sub>e /m<sup>2</sup>] = Electricity consumption [kWh/m<sup>2</sup>] \* Emission factor [gCO<sub>2</sub>e /kWh]
3. Building emission [gCO<sub>2</sub>e /m<sup>2</sup>] = Total emission from heating and hot water consumption + Total emission from electricity usage
4. Total emissions from the building [gCO<sub>2</sub>e] = Building emission [gCO<sub>2</sub>e /m<sup>2</sup>] \* Atemp [m<sup>2</sup>]
5. SBAB's total financed emissions per building [gCO<sub>2</sub>e] = Total emissions from the building [gCO<sub>2</sub>e] \* SBAB's share of financing [LTV]

### Methodology for Tenant Owner Associations and Tenant-owned apartments

The PCAF methodology does not currently include a method for calculating emissions for tenant-owner associations and tenant-owned apartments, a very common type of housing in Sweden. In consultation with a group of Swedish banks, a common methodology was developed.

To avoid double counting emissions, we applied an allocation factor of 0,294 to the tenant-owner associations and an allocation factor of 0,706 to the tenant-owned apartments. In addition to this factor, the financed emission calculation of the tenant-owner associations is performed according to the PCAF methodology. For example, this means that if the bank has financed the tenant-owner association fully but none of the tenant-owned apartments, the bank has financed 29.4% of the property's emissions. Conversely, if the bank has not financed the tenant-owner association at all but fully financed the tenant-owned apartments, the bank has financed 70,6% of the property's emissions.

### Tenant Owner Associations Calculation

1. Emission from heating and hot water consumption per square meter [gCO<sub>2</sub>e /m<sup>2</sup>] = (Energy Performance [kWh/m<sup>2</sup>] \* Emission factor [gCO<sub>2</sub>e /kWh]) \* 0.294
2. Emission from electricity usage per square meter [gCO<sub>2</sub>e /m<sup>2</sup>] = (Electricity consumption [kWh/m<sup>2</sup>] \* Emission factor [gCO<sub>2</sub>e /kWh]) \* 0.294
3. Building emission [gCO<sub>2</sub>e /m<sup>2</sup>] = Total emission from heating and hot water consumption + Total emission from electricity usage
4. Total emissions from the building [gCO<sub>2</sub>e] = Building emission [gCO<sub>2</sub>e/m<sup>2</sup>] \* Atemp [m<sup>2</sup>]
5. SBAB's total financed emissions per building [gCO<sub>2</sub>e] = Total emissions from the building [gCO<sub>2</sub>e] \* SBAB's share of financing [LTV]

### Tenant-Owned Apartments<sup>5</sup> Calculation

1. Emission from heating and hot water consumption per square meter [gCO<sub>2</sub>e /m<sup>2</sup>] = (Energy Performance [kWh/m<sup>2</sup>] \* Emission factor [gCO<sub>2</sub>e /kWh]) \* 0.706
2. Emission from electricity usage per square meter [gCO<sub>2</sub>e /m<sup>2</sup>] = (Electricity consumption [kWh/m<sup>2</sup>] \* Emission factor [gCO<sub>2</sub>e /kWh]) \* 0.706
3. Building emission [gCO<sub>2</sub>e /m<sup>2</sup>] = Total emission from heating and hot water consumption + Total emission from electricity usage
4. Average building emission per Tenant Owner Association [gCO<sub>2</sub>e /m<sup>2</sup>] = All building emissions [gCO<sub>2</sub>e] / Number of buildings belonging to the Tenant Owner Association
5. Total emissions from the Tenant Owned Apartment [gCO<sub>2</sub>e] = Average building emission per Tenant Owner Association [gCO<sub>2</sub>e /m<sup>2</sup>] \* Atemp for the Tenant-Owned apartment [m<sup>2</sup>]
6. SBAB's total financed emissions per Tenant Owned Apartment [gCO<sub>2</sub>e] = Total emissions from the Tenant owned apartment [gCO<sub>2</sub>e] \* SBAB share of financing [LTV]

3) Methodology described in The Global GHG Accounting and Reporting Standard for the Financial Industry

4) If the building has two heating sources the assumed distribution between emission factors of the heating sources is 50/50.

5) Calculations are made on all buildings included in the applicable Tenant Owner Association

### Methodology for properties without an EPC

To estimate emissions from those properties where the EPC is not available, properties without an energy label, the energy performance and emissions are estimated using methodology and proxies and data from PCAF. Data on actual building area, is multiplied by the data on average emission intensity per square meter provided by PCAF for different property types. If data on actual building area is not available, average building areas from PCAF will be applied.

PCAF Proxies	Single-family houses	Multi-family dwellings	Premises
Energy intensity (kWh/m <sup>2</sup> )	191	187	267
Emission intensity (kgCO <sub>2</sub> e/m <sup>2</sup> )	9	8	22
Average building area (m <sup>2</sup> )	127	1,092	356

### Data quality score

To transparently disclose the data quality in the analysis, we use the PCAF methodology, which provides a data quality matrix (score of 1 being the highest data quality and 5 the lowest). For our emissions calculated with the use of an energy label and information from an energy declaration, we have a data quality score of three. Since we can match 71.7% of our portfolio to an energy declaration, the majority of our data has a data quality score of three, where we use energy performance and heated floor area data from official energy labels combined with Swedish country-specific average emission factors. For the emissions calculated without an energy label (28.3% of our portfolio), we have a data quality of four if we have floor area, and five if we do not.

### Total financed emissions (2022)

SBAB summarizes our total financed emissions by building type and per energy class to help prioritize and plan our activities connected to the climate target. Total emissions are lower, compared to last year's reported levels, due to updating the methodology and coordinating with other banks to ensure better comparability, and we therefore use 2022 as our baseline year for our climate targets.

Building type	Emissions per building type (Tonne, CO <sub>2</sub> e)	% of portfolio
Single family homes	46,553	35.00
Holiday homes	3,130	1.20
Multi-family dwellings: tenant-owned apartments	27,197	34.50
Other multi-family dwellings including tenant owner associations and rental buildings	46,134	27.60
Commercial real estate: Offices and business locations	1,083	1.70
<b>Total financed emissions</b>	<b>124,098</b>	<b>100</b>

Energy labels	Emissions per energy class (Tonne, CO <sub>2</sub> e)	% of the total portfolio
A	108	0.50
B	2,921	5.40
C	8,236	10.60
D	13,638	15.30
E	30,671	23.40
F	22,320	12.70
G	9,638	3.60
No energy label	36,566	28.50



### Climate Target

SBAB is accelerating the work to combat climate change by adopting decarbonization targets for our lending portfolio for 2038. The target covers our lending to private, commercial and tenant owner association clients and is concentrated in the mortgage and commercial real estate sectors. These new

targets are set using methodologies that are science based and will be validated using the Science Based Targets initiative framework. SBAB has already committed to Science Based Targets initiative. The climate targets are also intensity based and are based on kgCO<sub>2</sub>e per m<sup>2</sup>. The overall target until 2038 is an approximate 50% reduction in emissions from lending to our private, tenant owner and corporate clients (see table below for more precise targets).

Building type	Emission boundaries	Metric	Financed Emissions, Baseline (2022)	2038 target	Pathway
Single family homes	GHG scope 1&2	kgCO <sub>2</sub> e per m <sup>2</sup>	8.7	3.6 (-58%)	CRREM <sup>6</sup>
Holiday homes	GHG scope 1&2	kgCO <sub>2</sub> e per m <sup>2</sup>	9.1	3.6 (-60%)	CRREM
Multi-family dwellings: tenant-owner apartments	GHG scope 1&2	kgCO <sub>2</sub> e per m <sup>2</sup>	6.3	3.3 (-48%)	CRREM
Other forms of multi-family dwellings, including tenant-owner associations and rental buildings	GHG scope 1&2	kgCO <sub>2</sub> e per m <sup>2</sup>	5	3.3 (-34%)	CRREM
Commercial real estate: Offices and business locations	GHG scope 1&2	kgCO <sub>2</sub> e per m <sup>2</sup>	11.9	7.7 (-35%)	CRREM
<b>Total</b>	<b>GHG scope 1&amp;2</b>	<b>kgCO<sub>2</sub>e per m<sup>2</sup></b>	<b>7.5</b>	<b>3,75 (-50%)</b>	<b>CRREM</b>

### Boundaries

SBAB measured emissions from our lending secured by immovable properties in Sweden. However, we have not included emissions from lending to commercial clients for construction. Under 2023, SBAB will measure emissions from our lending for construction (byggnadskreditiv) using proxies to estimate emissions from the building process for our corporate clients.

### Actions to reach decarbonization target

SBAB will steer our clients towards a 1.5-degree scenario world and continue to develop products and services that facilitate the climate transition towards our 2038 targets. Due to the inclusion of the climate target as one of our five central business goals, additional focus will be on our sustainable product and service offering and green bond framework.

Our goal is to improve internal systems to store and access the relevant data to enable efficient steering and to further integrate the financed emissions calculation, climate risk data and EU taxonomy classification into our business strategies and risk evaluations.

SBAB is also committed to improving our data quality and calculations for our financed emissions, given that the target-setting methodology, as well as climate science will evolve over time.

### Limitations

Despite our climate target being one of our five central business goals and prioritized highly within the organization, we understand that our ability to meet our targets is also dependent on an underlying change in society. If the mortgage and commercial real estate sectors are not decarbonizing, SBAB will not succeed in delivering upon our targets. However, SBAB is committed to proactively working together with customers, partners, and civil society on this journey.

Going forward, the aim is to increase the quality of the data and limit the use of estimates. Furthermore, the pathways and climate science continue to develop and the geopolitical situation around the world continues to change. Therefore, the targets will be reviewed at least every five years, to ensure alignment with the latest climate science.

6) Based on the findings of climate science on global warming and on the political decisions agreed upon in the Paris Agreement, the real estate industry requires guidance in order to align the sector's decarbonization ambition regarding the respective 'fair share' of the real estate industry. To enable Net-Zero commitments and ensure a decarbonized economy in 2050, the Carbon Risk Real Estate Monitor initiative (CRREM initiative) has derived country-specific carbon- and energy-reduction pathways that are aligned with the requirements of the Paris Agreement to limit global warming to a maximum of 1.5°C, thus ensuring that defined sector thresholds are not exceeded.

# Emissions from our operations

## Data and sources

Data is collected from SBAB offices in Stockholm, Karlstad, Gothenburg, and Malmö, as well as from the Booli office. Booli is a subsidiary of SBAB. The climate calculations are based on the latest available data as of 31 December 2022.

The tool used to calculate our emissions is Our Impacts<sup>7</sup> and all data and information is verified by external consultants at U&We. The Our Impact tool includes emission factors that are collected from international and scientifically approved sources. In any cases where specific emission factors for Sweden are available, they were used. Sweden specific emission factors were used, for example, for renewable electricity, district heating and emissions data from the Swedish Railways (SJ).

## Data quality

Data can either be actual, i.e., taken from accounting, reports etc., or estimated according to a method of calculation. 84.5 per cent of the emissions for 2022 are based on actual data. This means that in general data quality is very high.

## Methodology

The standard used in the calculation is the Greenhouse Gas Protocol (GHG Protocol), developed by the World Resources Institute and the World Business Council for Sustainable Development.

## Emissions from our operations (2022)

Data in the tables show emissions of greenhouse gases, expressed as carbon dioxide equivalents CO<sub>2</sub>e. The reporting is done in tonnes CO<sub>2</sub>e (tCO<sub>2</sub>e). In 2022, SBAB's total emissions were 311.8 tCO<sub>2</sub>e. We see a 32 per cent decrease as compared to 2021, and a decrease of 48 per cent since our reduction target was set on our base year of 2020.

## Emissions, per emission source

The table shows the emissions from all sources of emission that have been measured.

## Emissions<sup>8</sup>

tCO <sub>2</sub> e	2022	2021	2020	2019	2018	2017	2016
District heating	22.3	29,4	15.7	26.0	24.7	23.9	25.2
District cooling	0	0	0.2				
Electricity	26	37,4	52.6	26.5	12.1	10.8	14.2
Water consumption	0.3	0,5	0.3	0.3	0.4		
Waste for incineration	0.1	0,1	0.1	0.4	0.06	0.4	2.6
Company cars	0	0	0.7	15.4	15.5	21.4	20.5
Flight	38.6	9	35.8	131.6	130.3	115.9	108.2
Trains	0.1	0,1	0	0.4	0.4	0.4	1.5
Copying paper	0	0	0.8	0.7	0.5		
Employees' cars	29.5	22,1	23.6	11.7	5.6	7.3	11.4
Taxi	2.3	0,7	1.1	3.3	3.6	3.7	2.4
Server centres	54.7	31,8	24.8	88.6			
IT equipment	119.4	322,8	439.3	209.2			
Hotel nights	18.5	8	6.8	19.6			
<b>Total</b>	<b>311.8</b>	<b>461.9</b>	<b>601.8</b>	<b>533.7</b>	<b>193.3</b>	<b>183.8</b>	<b>186.0</b>

7) Our Impacts is a tool for organizations that want to collect data to calculate their carbon footprint and set ambitious climate targets. The tool is web-based and thus enables a decentralized data collection. The tool works according to accounting principles and allows for auditors to perform audits directly in the program platform. The tool generates reports on the company's carbon footprint and compiles the results according to the requirements of the GHG Protocol.

8) The emissions from our operations were calculated using a market-based methodology. More information on the methodology and calculations in full can be found in our Climate Accounting 2022 (Klimatbokslut 2022) and Climate Analysis 2022 (Analys Klimatbokslut 2022) published in Swedish on sbab.se



### Reduction target for emissions from our operations

SBAB has a reduction target of 15% until 2025 on scope 2 and 3 upstream<sup>9</sup> (SBAB has no scope 1 emissions). In our process to set a Science Based target, we may need to slightly adjust our current reduction target for emissions from our operations.

A working group with representatives from departments of tech, user experience, facility management and sustainability work actively to achieve our targets and improve our climate impact. We see significant progress with better data quality, ensuring green energy in our server centres and reduced emissions

from the purchase of IT equipment. Moreover, SBAB committed to climate compensating for 100% of our scope 2 and 3 upstream emissions.

Climate compensation in 2020 was done through financing a wind power project in Aruba, an area that is currently largely dependent on coal energy. Climate compensation for 2021 was done via financing a solar power project in Rajasthan, India. Only 9 percent of India's energy is renewable. Both projects are certified Gold Standard, ensuring that the positive climate impact does not come at the expense of other sustainability aspects.

9) Scope 3 downstream, financed emissions, is reported in section 3 of this report.

# Conclusion

SBAB took significant steps in our work with climate with increased focus on the areas where we have the largest potential impact, which is helping our customers be more energy effective and climate smart. By setting a long-term climate target that is one of our five central business goals, we can continually focus

on improving internal data systems, understanding our customer's needs, and developing our products and service offering to support them through the green transition. With our financed emissions reporting, we seek to be transparent and committed to adapt our work to the latest climate science.

**SBAB!**