

Financed emissions and emissions reduction targets of Arion Bank

Estimated emissions for 2022 using PCAF methodology
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Contents

Financed emissions of Arion Bank	3
Main results	4
Financed emissions in 2022	
Methodology and detailed results by asset class	8
Listed equities and bonds	
Business loans and unlisted securities	
Mortgages	
Motor vehicles loans	
Sovereign bonds	
Targets and commitments	14
SBTi and NZBA	
Reduction targets	
Methodology	
Additional material	21
NACE codes	
Updated figures for 2021	





Financed emissions of Arion Bank

Since 2021 Arion Bank has been a signatory to the Partnership for Carbon Accounting Financial (PCAF), a global partnership of financial institutions that work together to develop and implement a harmonized approach to assess and disclose greenhouse gas emissions. Every year, Arion Bank publishes information on the carbon footprint of financed emissions according to PCAF methodology, thereby promoting transparency in progress on climate issues. The analysis is among other things used to deal with climate-related transition risk, develop climate-friendly financial products and set targets in connection with the Paris Agreement and net zero Iceland by 2040.

The analysis is an estimate of the carbon footprint which Arion Bank and, to some extent, its subsidiaries are responsible for through lending and investments on the balance sheet at the end of 2022. The results indicate where the main opportunities are for reducing greenhouse gas emissions. Knowing financed emissions form the basis for emissions reduction targets.

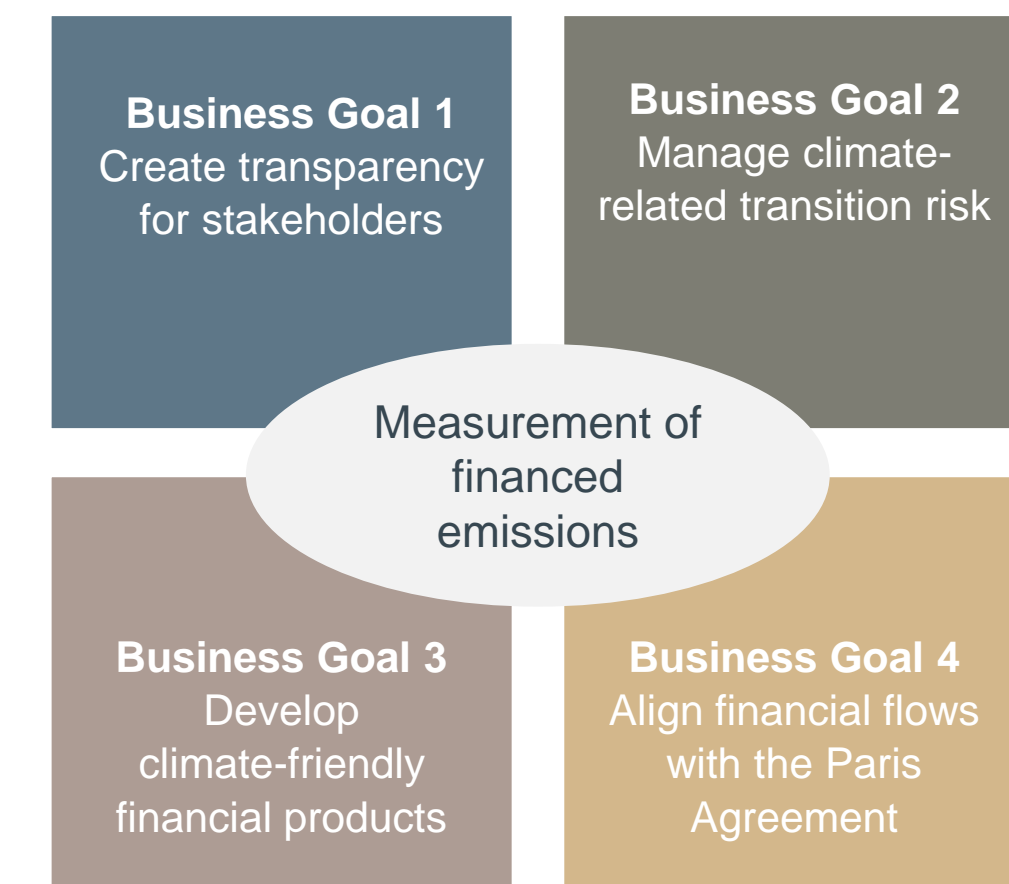
The PCAF methodology is under continuous development and a new asset class has been added since the first report was published, namely sovereign bonds. This category was outside scope in the first report on estimated financed emissions which the Bank published at the beginning of 2022, and which covered 2021. Emissions figures for sovereign bonds are published with and without land use, land-use change and forestry (LULUCF).

In December 2023 the Bank pledged to follow the Science Based Targets initiative (SBTi) when setting financed emissions reduction targets. Validation of these targets by SBTi means that the Bank's targets are science-based and efforts to reduce emissions are based on scenarios where global warming does not exceed 1.5°C. At the same time the Bank also joined Net-Zero Banking Alliance (NZBA), which is the climate accelerator of UNEP FI for banks committed to financing ambitious climate action.

It is important not to stop at estimating financed emissions, but instead to use the analysis in continued target setting and not least in taking action. How a bank manages and shares its financial resources can have a decisive impact on the progress of sustainable development in every country. Arion Bank's environment and climate policy states that the Bank wants to help Iceland become net-zero by 2040. During the year the first targets were adopted on lending to particular sectors where the Bank can have the greatest impact. The targets are in line with the actions of the authorities and the ambitions of the companies in the relevant sectors. The targets are likely to change, not least in the process of getting them validated by SBTi.

Data quality is one of the main challenges when calculating financed emissions as only some of the companies on the Group's balance sheet publish data on own carbon emissions. Alongside the calculations, data is rated for reliability according to PCAF definitions and we are aiming to improve data quality every year. One change which has occurred since the 2021 report on financed emissions was published in 2022 is that in cases where a company does not publish data on own emissions, figures from Vera, Creditinfo's ESG platform, are used.

The Bank's methodology for calculating financed emissions has therefore changed between years and the data quality has improved. For the sake of consistency, financed emissions for 2021 have been recalculated. New figures obtained this way are published in this report for comparison.



Source: PCAF Global GHG accounting and reporting standard for the financial industry



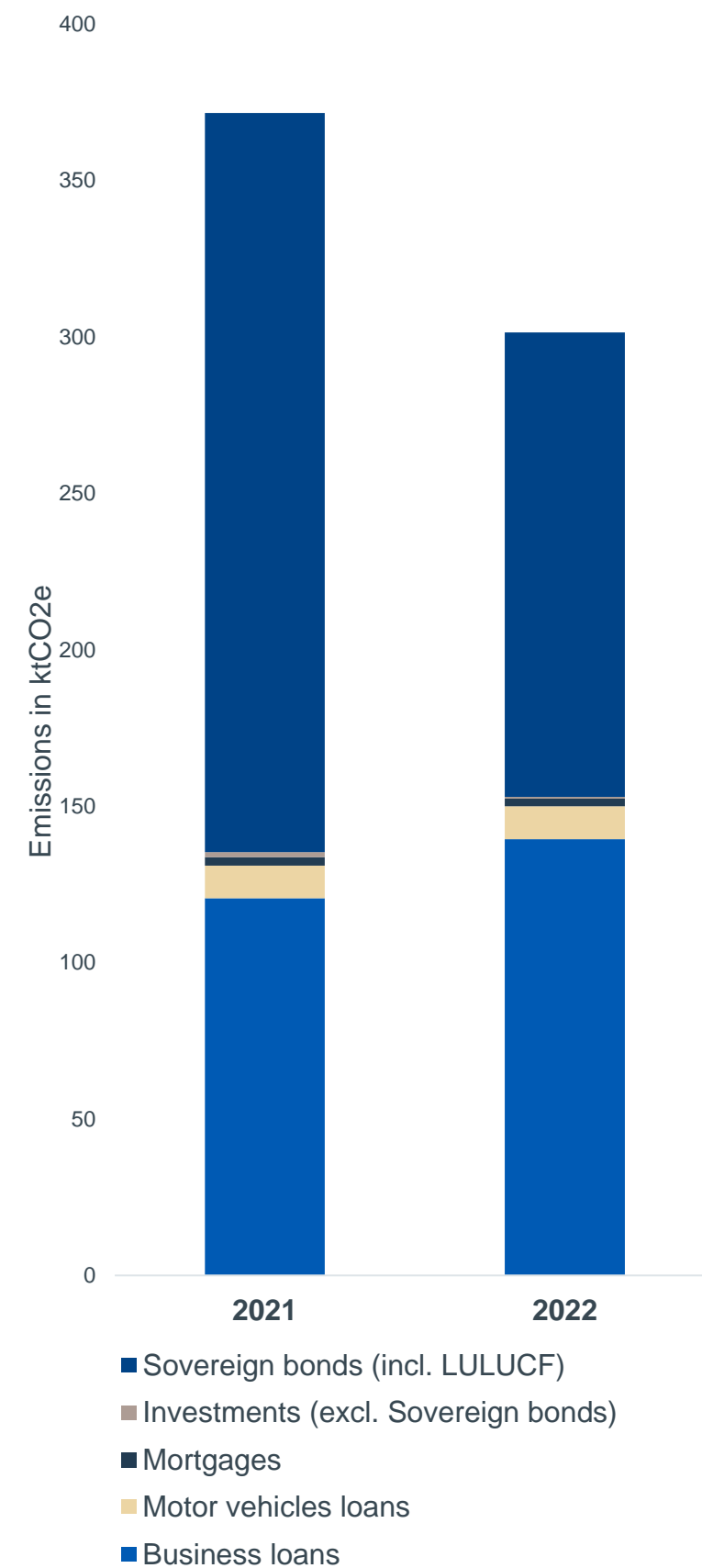
Main results





Main results

Arion Bank's financed emissions



Indirect emissions at Arion Bank in 2022 from the Bank's lending and investments amounted to 153 ktCO₂e, excluding emissions from sovereign bonds. In addition, the Bank's financed emissions from sovereign bonds are 148 ktCO₂e including LULUCF, and 91 ktCO₂e excluding LULUCF. Compared with 2021, the reduction in total emissions is just under 70 ktCO₂e, or 19%.

The Bank's report on financed emissions in 2021 did not cover emissions from sovereign bonds. This information can be found in the annex to this report. At the same as emissions from sovereign bonds (incl. LULUCF) decreased by more than 37% YoY, emissions from the Bank's lending increased by more than 13%. In 2021, there were still restrictions in place due to the global pandemic, and the increase in business loans in 2022 is the reason for this increase. Lower sovereign bond holdings, especially Icelandic bonds, result in lower emissions from sovereign bonds.

However, there is a positive trend in the emissions intensity of the loan portfolio. Emissions intensity is defined as greenhouse gas emissions for each ISK 1 million loaned. The emissions intensity of loans to customers decreased from 0.154 ktCO₂e/ISKm to 0.151 ktCO₂e/ISKm, or by 2%. Business loans have the largest impact, with 90% of emissions relating to this type of loan. Emissions intensity decreased by 5.1% between years in this loan category. Analyzing business loans by economic sector reveals that emissions intensity varies massively between sectors.

Motor vehicle loans come next after business loans in terms of financed emissions, with emissions of 10.5 ktCO₂e in 2022 and emissions intensity of 0.5 tCO₂e/ISKm. Estimated emissions from retail mortgages are only 2.5 ktCO₂e even though this loan category represents about half of the value of the loan portfolio. Emissions intensity of mortgages is therefore by far the lowest compared with other asset categories, or approximately 0.005 tCO₂e/ISKm.

Indirect emissions from investments other than sovereign bonds, i.e. listed and unlisted securities, come to a mere 0.57 ktCO₂e, or just over 0.4% of total financed emissions, and decreases by 1 ktCO₂e from 2021 and emissions intensity decreases by half and is now 0.02 tCO₂e/ISKm.

Approximately 93% of the Bank's loan portfolio has been measured, which is similar to 2021. However, 96% of financial investments have been measured which is a huge increase as sovereign bonds have now been included in calculations.

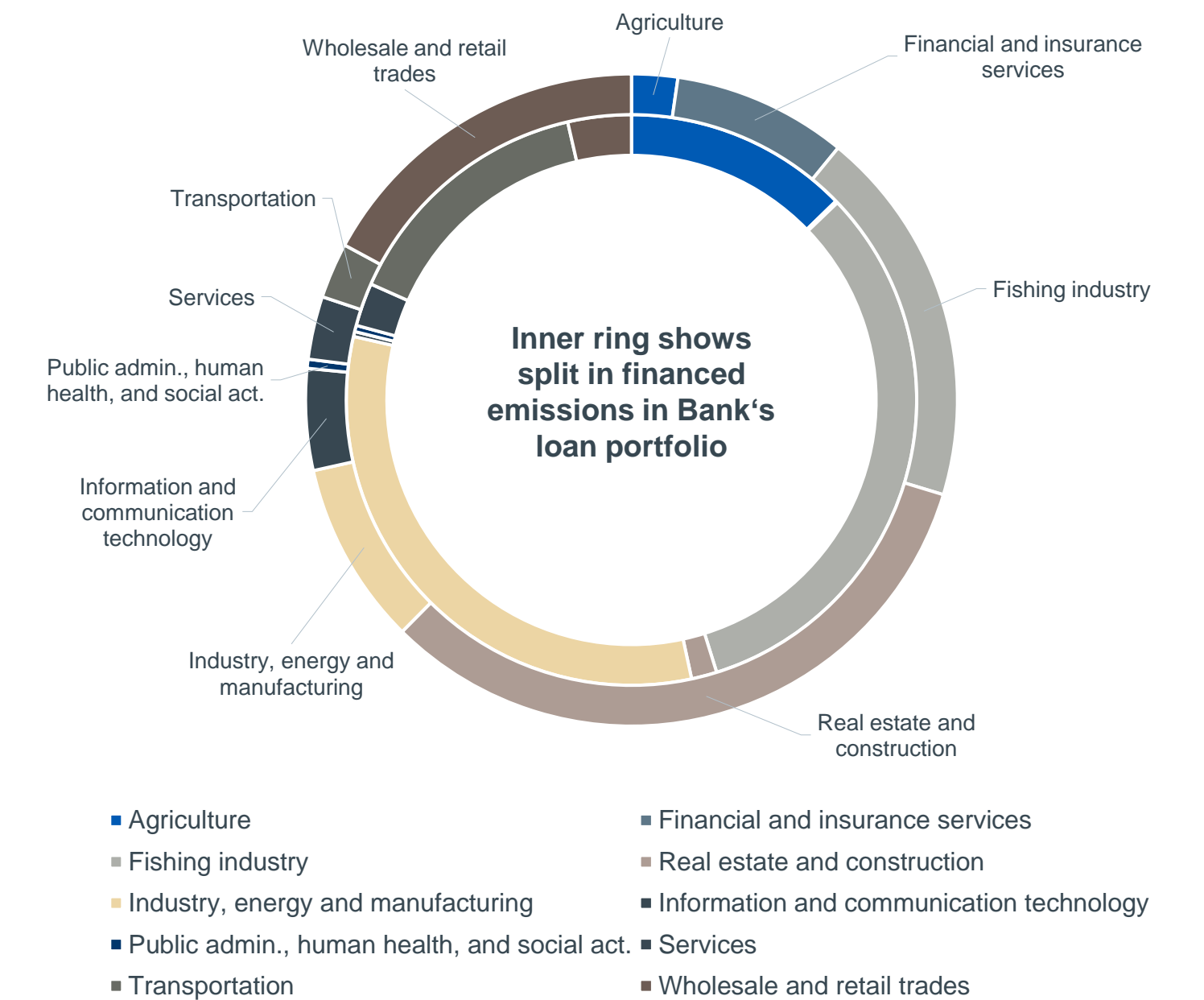
Bank's financed emissions for 2022 including sovereign bonds (incl. LULUCF) totalled

301 ktCO₂e

Bank's financed emissions for 2022 excluding sovereign bonds totalled

153 ktCO₂e

Outer ring shows split in funds in Bank's loan portfolio to companies

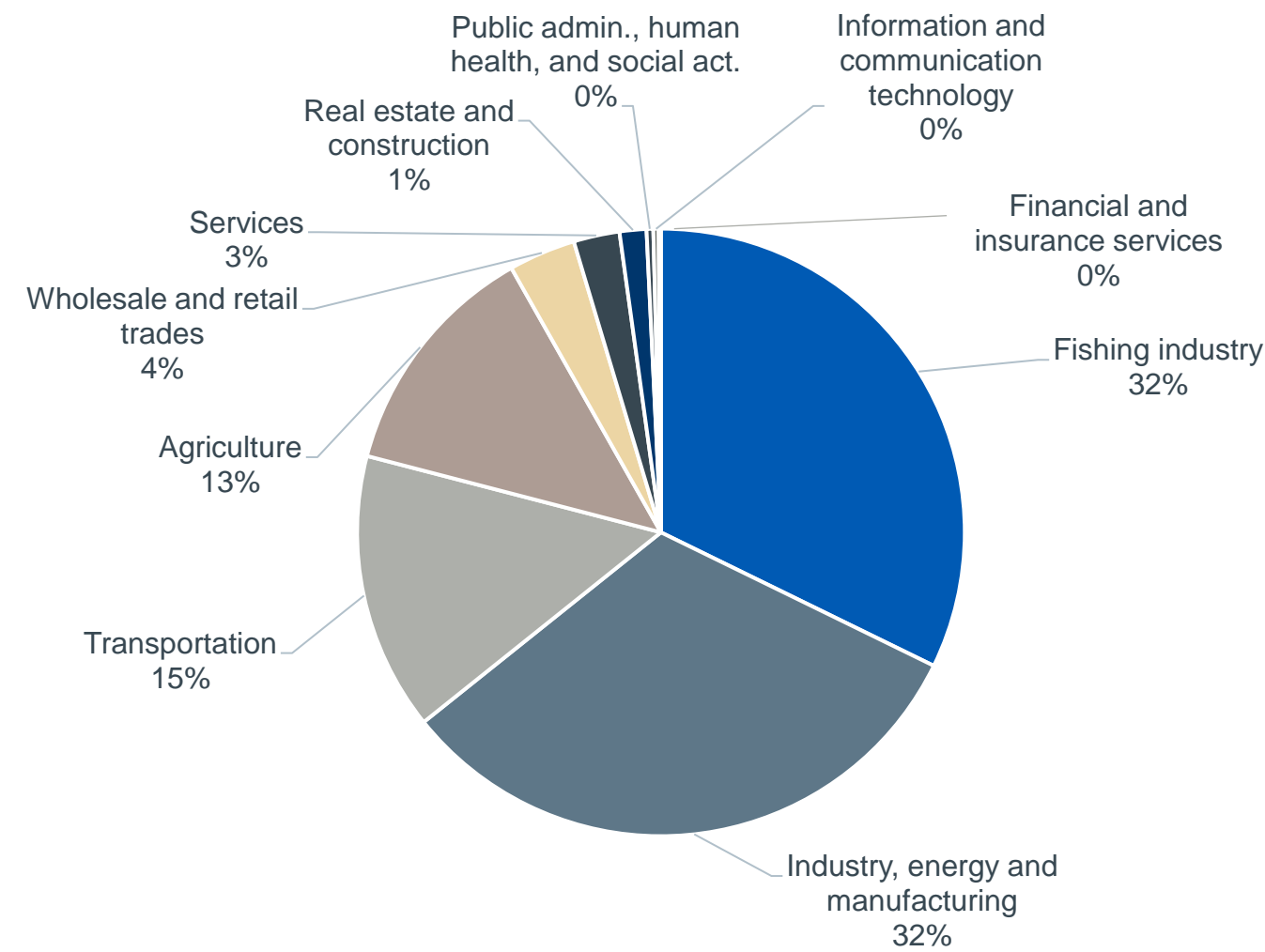




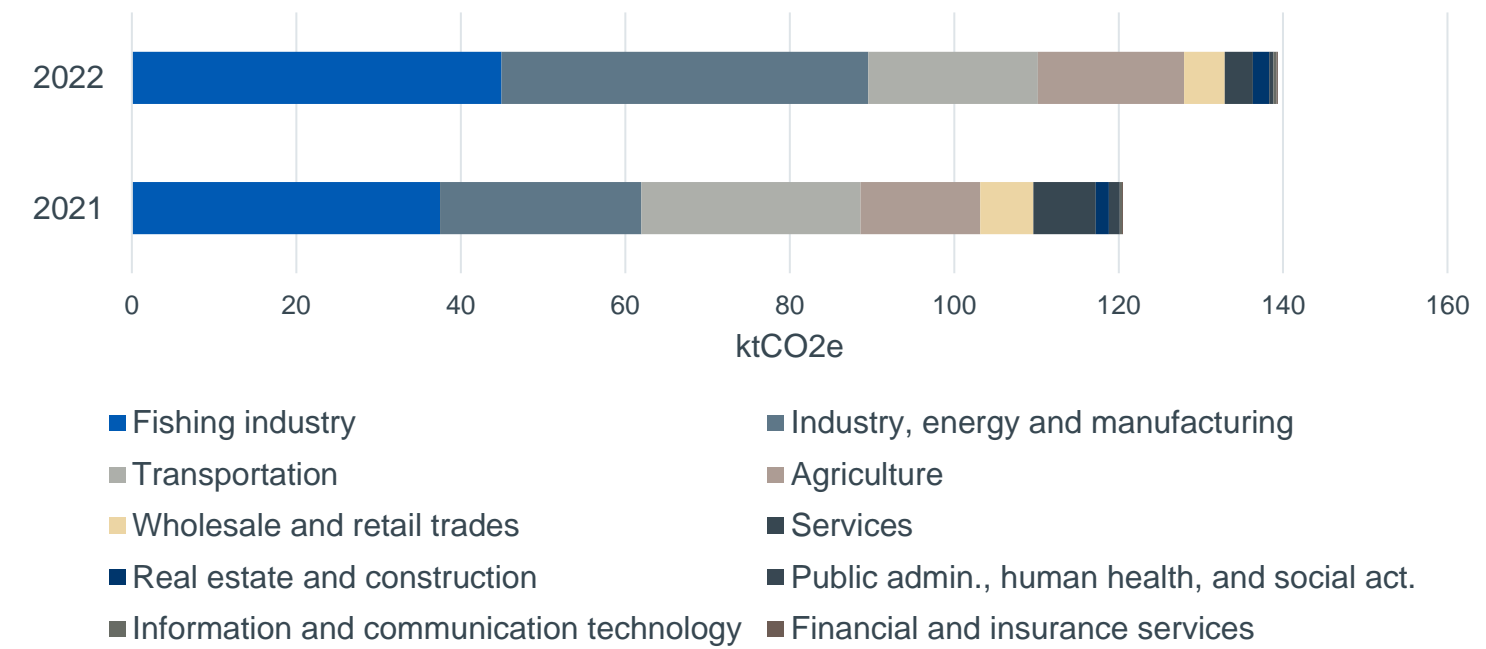
Main results

Business loans

Financed emissions from Arion Bank's business loan portfolio

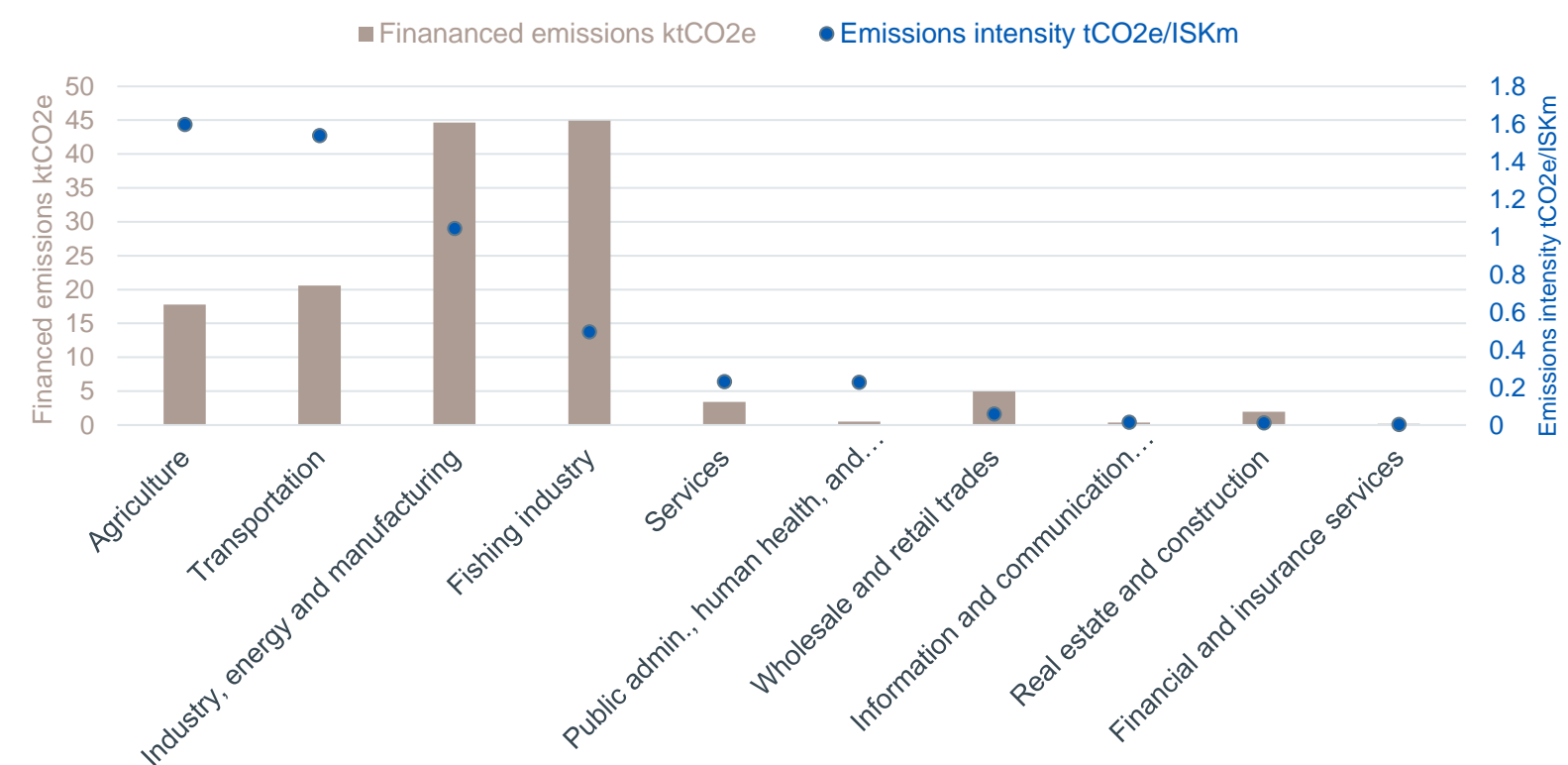


Comparison between 2021 and 2022



Emissions intensity and financed emissions do not always correlate, and both agriculture and transportation have relatively high emissions intensities even though each sector corresponds to only 13-15% of the total emissions from the Bank's business loans. The amount of lending changes between years and therefore the decrease in financed emissions is estimated by comparing emissions intensity rather than real emissions at year-end.

Financed emissions and emissions intensity for different sectors in Arion Bank's loan portfolio

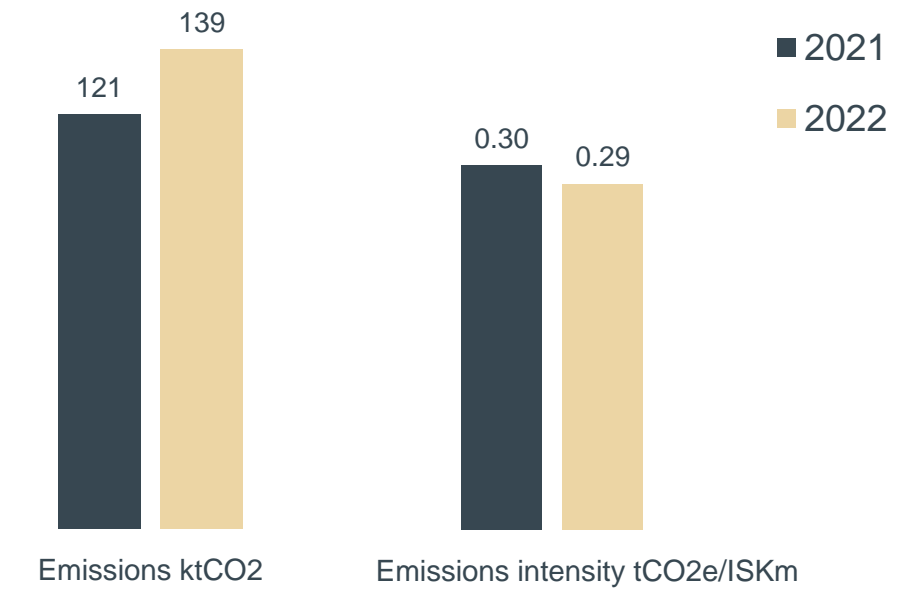


The economic sectors which cause most indirect emissions from the Bank's business loans are seafood, where estimated emissions are 44.9 ktCO2e, and industry, energy and manufacturing, where estimated emissions are 44.6 ktCO2e. These sectors do not, however, have the highest emissions intensity. The highest emissions intensity is in agriculture, 1.6 tCO2e/ISKm, and total emissions from this sector amount to 17.8 ktCO2e.

A comparison of financed emissions from business loans between years shows a total increase from approximately 120 ktCO2e in 2021 to 139 ktCO2e in 2022. However, the emissions intensity of the business loan portfolio decreases from 0.303 tCO2e/ISKm to 0.288 tCO2e/ISKm. This is a positive trend since emissions are relatively lower even though the loan amount increased between 2021 and 2022. The split between sectors remains similar, although the share of industry, energy and manufacturing increased, while the share of transportation decreased. Seafood is significant at Arion Bank by international standards, but the loan book does not contain loans to oil and gas processing which in many cases are the cause of the majority of financed emissions at international banks.

Various measures are already being taken to encourage lower emissions in the most polluting sectors. This includes renewing the fishing fleet, investment in more eco-friendly cooling systems, capturing carbon from exhaust gas in aluminium production, focus on reusing and recycling, strengthening electric power infrastructure, and developing transmission systems so that electricity can be guaranteed throughout the country.

Financed emissions and emissions intensity from Arion Bank's business loan portfolio





Financed emissions for 2022

Breakdown of financed emissions for 2022. Calculations for Arion Bank and part of subsidiaries, hereafter Arion Group.

	Total assets	In scope	Out of scope	Financed emissions	Emissions intensity	Data quality
	ISKm	ISKm	ISKm	ktCO2e	tCO2e/ISKm	Weighted average
Cash and balances with Central Bank	114,118		114,118			
Loans to credit institutions	45,501		45,501			
Loans to customers	1,084,757	1,007,199	77,558	152.4	0.15	3.84
Financial instruments ¹	193,329	141,188	52,141	171.8	1.22	2.05
Investment property	7,862		7,862			
Investments in associates	787		787			
Intangible assets	8,783		8,783			
Tax assets	135		135			
Assets and disposal groups held for sale	61		61			
Other assets	14,223		14,223			
Total assets	1,469,556	1,148,386	321,170	324.2	0.28	3.62

Loans to customers		Individuals		Corporates				
		Individuals	Corporates	Individuals	Corporates			
Overdrafts	46,940		27,116	14,369	5,455	11.0	0.41	3.98
Credit cards	15,947		1,738	14,155	54	1.1	0.61	3.87
Mortgages	574,029	501,853	60,274	11,752	150	10.5	0.02	4.00
Construction loans	28,893		28,893	0	0	0.5	0.02	4.00
Capital lease	8,220	3,701	2,673	388	1,458	3.9	0.61	2.15
Other loans	410,728	12,317	368,633	23,836	5,942	125.4	0.33	3.62
Total	1,084,757	517,871	489,327	64,500	13,059	152.4	0.15	3.84

¹ Included are sovereign bonds (incl. LULUCF)



Methodology and detailed results by asset class





Listed equities and bonds

The results show the financed emission from listed equity and corporate bonds in the balance sheet of the Arion Bank Group at year-end 2022. Green bonds, unit shares, securities used as hedges and derivatives are not included here as the methodology used to calculate the financed emissions for such financial products is still being developed. Sovereign bonds are also not included in this category but will be discussed in a separate section.

The following equation was used to calculate the financed emissions of listed companies:

$$\text{Financed emission} = \sum_f \frac{\text{Outstanding amount}_c}{\text{EVIC}_c} \cdot \text{Company emissions}_c$$

with $c = \text{borrower or investee company}$

Where the enterprise value including cash (EVIC) is composed of:

- Market capitalization of general shares at the end of the accounting year
- Market capitalization of preferred shares at the end of the accounting year
- Book value of total debt
- Non-controlling interests (minority shares)

So that the enterprise value is not negative, cash is not included.

The following equation was used to calculate the financed emissions of unlisted companies with corporate bonds:

$$\text{Financed emission} = \sum_c \frac{\text{Outstanding amount}_c}{\text{Total equity} + \text{debt}_c} \cdot \text{Company emissions}_c$$

with $c = \text{borrower or investee company}$

Data on emissions from companies and sectors were used in calculations in following order or priority depending on access:

Data quality ^a	
From the company's sustainability reporting (Verified)	1
From the company's sustainability reporting (Unverified)	2
Based on the emissions intensity of the sector ^b	4

↑ Certain
 ↓ Uncertain

For those companies which do not publish carbon accounts, estimated emissions are based on recorded ÍSAT sector classification of company.

Financed emissions from listed equities and bonds

Arion Group

	In scope	Book value	Financed emissions	Emissions intensity	Data quality
	% of total	ISKm	ktCO ₂ e	tCO ₂ e/ISKm	Data quality
Listed equities	98.4	6,326	1.19	0.19	2.26
Listed bonds	82.0	28,926	0.08	0.003	2.00
Total	85.0	35,252	1.26	0.04	2.05

Arion Bank

	In scope	Book value	Financed emissions	Emissions intensity	Data quality
	% of total	ISKm	ktCO ₂ e	tCO ₂ e/ISKm	Weighted average
Listed equities	100	1,926	0.26	0.14	2.85
Listed bonds	96.3	21,597	0.04	0.002	2.00
Total	96.6	23,523	0.30	0.013	2.07

^a Ratings for data quality depend on the methodology used in calculations and where the data on carbon emissions is obtained.

^b In cases where a company's emissions needed to be estimated down to operating income, emissions factors were used from Vera, Creditinfo's ESG platform





Business loans and unlisted securities

The following equation was used to calculate the financed emissions of business loans and unlisted equity:

$$Financed\ emission = \sum_c \frac{Outstanding\ amount_c}{Total\ equity + debt_c} \cdot Company\ emissions_c$$

with $c = borrower\ or\ investee\ company$

The following equation was used to calculate the financed emissions of listed companies:

$$Financed\ emission = \sum_f \frac{Outstanding\ amount_c}{EVIC_c} \cdot Company\ emissions_c$$

with $c = borrower\ or\ investee\ company$

When collecting data and information on carbon emissions of companies the Bank has loaned to, the same method was used as for listed equity and corporate bonds. Arion Bank relied on data from Vera, Creditinfo's ESG platform.

Loans by sector are analysed on a group basis.

Arion Group

	In scope	Book value	Financed emissions	Emissions intensity	Data quality
	%	ISKm	ktCO2e	tCO2e/ISKm	Weighted average
Business loans	98.0	484,443	139.39	0.29	3.75
Unlisted equity	25.6	3,145	0.37	0.12	3.56
Total	97.5	487,588	139.76	0.29	3.75

Arion Bank

	In scope	Book value	Financed emissions	Emissions intensity	Data quality
	%	ISKm	ktCO2e	tCO2e/ISKm	Weighted average
Business loans	96.5	486,333	139.39	0.29	3.75
Unlisted equity	45.7	2,322	0.26	0.11	3.78
Total	96.3	488,655	139.65	0.29	3.75

Business loans

Sector	Book value	Financed emissions	Emissions intensity	Data quality
	ISKm	ktCO2e	tCO2e/ISKm	Weighted average
Agriculture	11,131	17.78	1.60	4.00
Financial and insurance services	42,171	0.17	0.00	3.97
Fishing industry	91,467	45.19	0.49	3.59
Industry, energy and manufacturing	44,365	44.67	1.01	3.27
Information and communication technology	24,521	0.39	0.02	3.33
Public administration, human health and social act.	2,199	0.50	0.23	4.00
Real estate and construction	159,595	2.02	0.01	3.96
Services	15,249	3.42	0.22	3.99
Transportation	13,407	20.61	1.54	3.02
Wholesale and retail trades	83,483	5.02	0.06	3.84
Total	487,588	139.77	0.29	3.75

^c EVIC is defined in more detail in the section on listed equity and corporate bonds





Mortgages

The results show financed emissions of Arion Bank's mortgage portfolio. The calculations apply to carbon emissions from the energy consumption of real estate under Scope 1 and Scope 2. The results show the estimated emissions for retail mortgages at the end of 2022. All the Group's mortgages are included in the operations of Arion Bank.

The following equation was used to calculate the financed emissions of mortgages:

$$\text{Financed emission} = \sum_{b,o} \frac{\text{Outstanding amount}_b}{\text{Property value}_b^d} \cdot \text{Energy consumption}_b \cdot \text{Emission factor}_e$$

with $b = \text{building}$ and $e = \text{energy source}$

In 2021 Arion Bank published a [report](#) containing an analysis by the engineering firm Mannvit which analyzed what could be classed as green real estate in the Bank's loan portfolio. It was assumed that the Bank's real estate portfolio reflected the real estate market in Iceland in general. The methodology in the report was used to determine the estimated energy consumption of real estate per square metre, based on the requirements made in the building regulations in force at the time the property was constructed, which has impact on the calculated energy consumption of the property.

Calculations used the emissions factors for the production and distribution of electricity and hot water from Orkuveita Reykjavíkur for 2022

In Iceland the energy used in the production of electricity for residential property and to heat residential property comes from renewable sources and their emissions factors are very low compared with factors in other countries. According to data from [Orkustofnun](#) from 2022, 70.55% of energy production in Iceland is hydropower and 29.40% is geothermal.

Financed emissions from retail mortgages

Type of housing	Book value	Financed emissions	Emissions intensity	Data quality
	ISKm	ktCO2e	tCO2e/ISKm	Weighted average
Single family home	144,797	1.06	0.007	4
Terraced house	128,207	0.75	0.006	4
Apartment	227,998	0.70	0.003	4
Other	851	0.004	0.005	4
Total	501,853	2.51	0.005	4

^d The value of real estate is based on the data from the National Land Registry of Iceland before 2022 or the fair value of the property.





Motor vehicle loans

The results show financed carbon emissions from leases and motor vehicle loans to individuals and companies. The types of vehicles included in the calculations are:

- Passenger cars
- Medium/heavy commercial vehicles
- Light commercial vehicles (vans)
- Buses

Calculations of financed emissions from the Bank's leases and motor vehicles loans at the end of 2022 cover approximately 84% of the total book value of the asset class. Excavators, heavy machinery and motorbikes are not included due to limited information.

Estimates of the carbon emissions are included in Scopes 1 and 2. Included under Scope 1 are direct emissions from the combustion of fossil fuels in vehicles. In the case of hybrid vehicles, which have both an electric motor and a petrol or diesel engine, and electric vehicles which are solely powered by electricity, indirect emissions from electricity production comes under Scope 2. Indirect emissions from electricity generation is not included since the vast majority of electricity in Iceland is generated by hydropower and geothermal power, and carbon emissions under Scope 2 are therefore very limited.

As with mortgages all car and equipment loans at Arion are included under Arion Bank.

Financed emissions from motor vehicle loans

	Book value	Financed emissions	Emissions intensity	Data quality
	ISKm	ktCO2e	tCO2e/ISKm	Weighted average
Fossil fuel vehicles	10,832	9.47	0.87	2.18
Hybrid vehicles	5,259	1.03	0.20	2.00
Green vehicles ^g	4,811	0.005	0.001	2.00
Total	20,902	10.50	0.50	2.10

^e From 2018 the emissions value for all new cars is supposed to be calculated using WLTP. For vehicles manufactured before that date, emissions are calculated according to NEDC, which is a less accurate method. Calculations used the WLTP emissions value for all types of vehicles where it was recorded. If only the NEDC value was available it was multiplied by 1.23 since the WLTP value is approximately 23% higher than the NEDC value, which is the same value that PCAF uses for its database.

^f Information on the average mileage of vehicles by power source and manufacturer was obtained from the Icelandic Transport Authority for 2022.

^g Green vehicles are vehicles which run entirely on electricity, methane or hydrogen..

The following equation was used to calculate financed emissions of motor vehicles loans:

$$Financed\ emission = \sum_v \frac{Outstanding\ amount_v}{Total\ value_v} \cdot Vehicle\ emissions_v$$

with v = vehicle

Different methods were used to calculate emissions from vehicles depending on how much information was available for each vehicle.

Methods and data on vehicle emissions were used in the following order:

- 1. From the vehicles registry of the Icelandic Transport Authority**
 - a) Greenhouse gas emission are stated per driven kilometre of each vehicle based on its registration number (CO2e/km). To calculate a vehicle's emissions, the emission factor^g was multiplied by the average annual mileage of the vehicle^h.
- 2. From the PCAF database**
 - a) If information on the manufacturer and sub-category of the vehicle was available as well as the emission factor (CO2e/km) of the vehicle in the PCAF database, the vehicle's emissions were calculated by multiplying the emission factor by the average annual mileage of the vehicle.
 - b) If access to information on a vehicle was limited, the vehicle's emissions were calculated by using the average annual carbon emissions (CO2e/year) from that type of vehicle (passenger car, medium/heavy commercial vehicle, light commercial vehicle or bus).





Sovereign bonds

This results show financed emissions from listed sovereign bonds. This is a new category in PCAF methodology. The method to calculate estimated emissions is based on the same principle as for equities and bonds.

The following equation was used to calculate financed emissions from sovereign bonds:

$$Financed\ emission = \sum_c \frac{Outstanding\ amount_c}{PPP\ adjusted\ GDP_c} \times Countries\ emissions_c$$

with $c = country$

Purchasing power parity (PPP) adjusted for GDP is used in the denominator. The reason this method is used is to facilitate international comparisons since economies differ in size and status around the world. Figures on PPP used in the calculations were taken from the database of the [World Bank](#).

Figures on country emissions were obtained from the [UNFCCC](#) database. Countries submit annual reports on their greenhouse gas emissions.

The latest figures in that database when the calculations were made were from 2021. These figures were used for calculations for 2022, which explains the difference in the data quality between 2021 and 2022.

The table below shows financed emissions from sovereign bonds excluding and including land-use, land-use change and forestry (LULUCF).

Financed emissions from sovereign bonds

	In scope	Book value	Financed emissions excl. LULUCF	Emissions intensity excl. LULUCF	Financed emissions incl. LULUCF	Emissions intensity incl. LULUCF	Data quality
	% of total	ISKm	ktCO2e	tCO2e/ISKm	ktCO2e	tCO2e/ISKm	Weighted average
Arion Group	97.0	102,791	97.99	0.95	170.13	1.66	2
Arion Bank	99.0	97,041	90.81	0.94	148.48	1.53	2



Targets and commitments





Science-based targets

Arion Bank has pledged to follow the methodology of the Science Based Targets initiative (SBTi) when setting emission reduction targets in the Bank's lending activities and investments. The Bank has also joined the UN-convened Net-Zero Banking Alliance, a global group of banks committed to financing ambitious climate action.

The Bank will work towards getting SBTi to validate its science-based climate targets within the next two years. These targets aim to keep global warming below 1.5° C and for Arion Bank to be net zero by 2040. Validation by SBTi confirms that the Bank's targets are science-based and align with scenarios from reliable sources where global warming is restricted to within 1.5°C in 2100 compared with pre-industrial revolution.

Membership of both the Net-Zero Banking Alliance and SBTi represents a key step in the Bank's sustainability journey. How a bank manages and shares its financial resources can have a decisive impact on the progress of sustainable development in individual countries and globally. Arion Bank's environment and climate policy states that the Bank wants to help Iceland become carbon neutral by 2040 and joining these initiatives contributes towards reaching these targets.

The Bank has already achieved a 75% reduction in emission from own activities from 2015 and has therefore set more ambitious targets. The Bank's updated target is therefore to achieve 80% reduction on emissions from activities, Scopes 1 and 2, by 2030 and to carbon offset all remaining activities.

Since 2019 Arion Bank has been a signatory to the Principles for Responsible Banking (PRB) and has thereby pledged to align its policies and actions with the Paris Agreement and the UN Sustainable Development Goals.

NZBA was formed as a climate accelerator to meet PRB requirements on responsible climate action. By joining NZBA banks commit to becoming net zero no later than 2050. In addition, targets are set for 2030 for those sectors which have the highest greenhouse gas emissions. One of the advantages of being a member of NZBA is that the framework is designed for the activities of banks as most of the emissions are in Scope 3.

Arion Bank has adopted short-term targets up to 2030 on emissions reduction from the Bank's loan portfolio. Analyzing financed emissions forms the basis for such target setting. Calculations according to PCAF methodology are recognized by both SBTi and NZBA and the Bank's targets are based on the results published in the Bank's reports on financed emissions. The targets the Bank has set on reducing financed emissions have not yet been submitted for validation by SBTi. It can be assumed that the targets will be adjusted before then in accordance with the updating of their criteria for financial institutions which commit to achieving net zero.

Emissions from the Bank's activities are only a fraction of financed emissions, and we realize that the main opportunities are in reducing emissions from the loan portfolio. We support our customers on their sustainability journey and encourage them to act with transparency in terms of their performance in environmental, social and governance issues.





Financed emissions reduction targets up to 2030

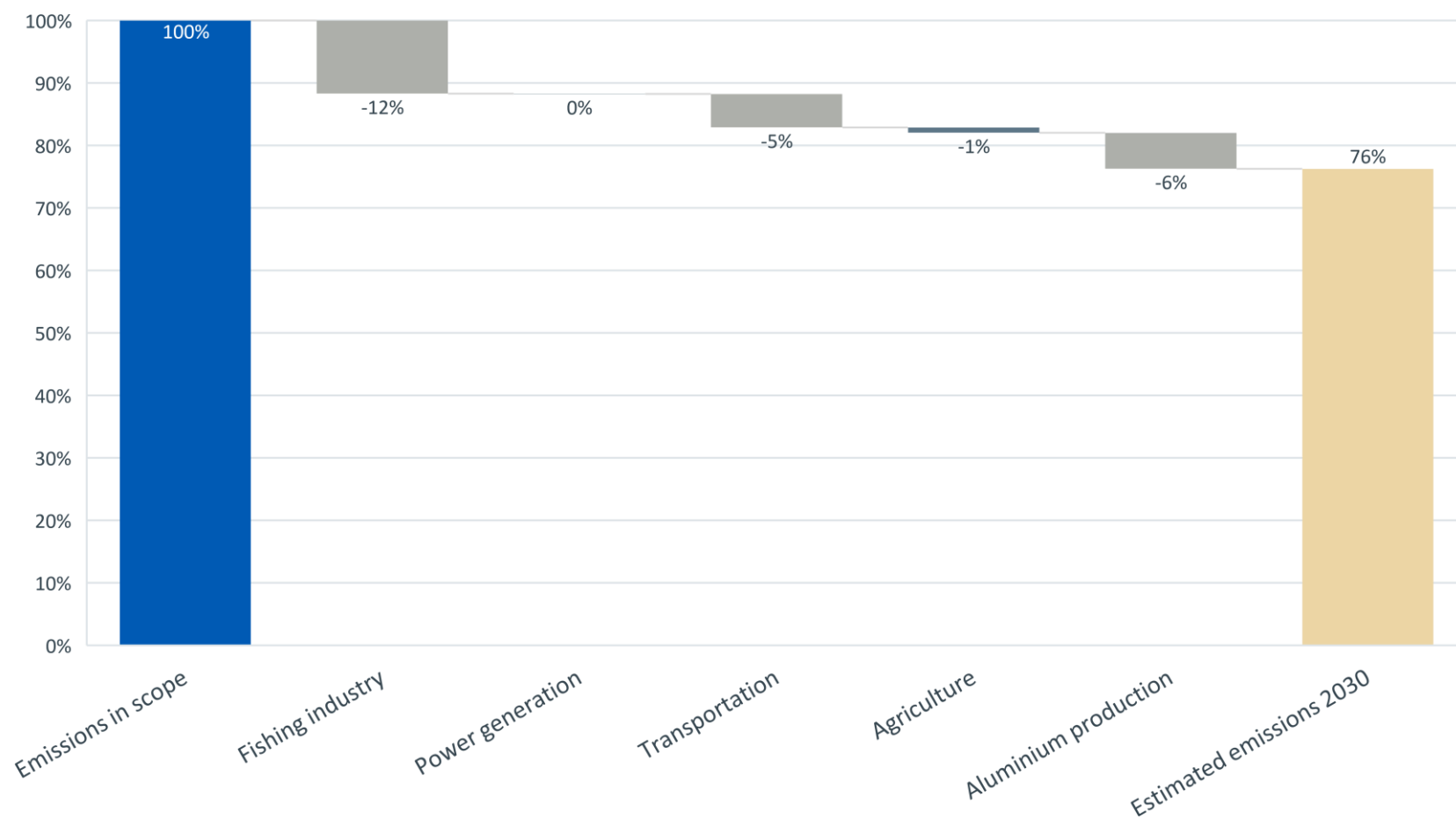
The first targets have been set for the most impactful sectors of the loan portfolio on reducing emissions intensity up to 2030 compared with 2022. The targets have been devised in accordance with NZBA guidelines, where the emphasis is on the most significant sectors, and the targets on power generation and fossil fuels are also addressed specifically.

Previously issued targets of the sectors which have been published in the Business Climate Guide and the government's climate action plan are used as a basis. The approach taken is to extrapolate the targets of the sectors and authorities for those years covered by the Bank's targets, and it is assumed that there will be a steady reduction every year. In the first edition, calculations are made on the basis that the reduction targets of the sectors have been reached. However, this is not true in all cases, and therefore the targets will be refined in 2024 with forthcoming data on the outlook in Iceland.

Targets are set for the Bank's lending activities and will be reviewed with a view to getting them validated by SBTi, and the Bank has 24 months to do so from point it became a signatory. The SBTi guidelines for financial institutions, on financed emissions reduction targets which aim for net zero, are still being devised and will come out in early 2024. Subsequently, the Bank's methodology will be coordinated with SBTi criteria.

The Icelandic government is also expected to publish a new climate action plan in the near future. The current edition provides for 35% reduction between 2005 and 2030, while the third edition will publish actions which aim for 55% reduction and is in line with Iceland's commitments. The sectors have met with varying success in reducing greenhouse gas emissions as the technology is not fully developed in some areas. It is clear that radical change is needed to reach net zero targets nationwide by 2040.

Estimated reduction in financed emissions in scope of first targets



Sector	Reduction target up to 2030	Metric	Emissions intensity reference year 2022	Emissions intensity target 2030	% of financed emissions 2022	% of loan portfolio value 2022	Issued targets
Seafood	28%	tCO2e/ISKm	0.50	0.36	32.2%	18.7%	Business Climate Guide
Power generation	30%	tCO2e/ISKm	0.20	0.14	0.1%	0.1%	Climate action plan, 2nd edition
Transportation	28%	tCO2e/ISKm	1.54	1.11	14.8%	2.8%	Business Climate Guide and Climate action plan, 2nd edition
Agriculture	5%	tCO2e/ISKm	1.60	1.52	12.8%	2.3%	Climate action plan, 2nd edition
Aluminium production	26%	tCO2e/ISKm	2.57	1.90	17.1%	1.9%	Business Climate Guide
Coal	Remain at 0	ktCO2	0	0			
Oil	Remain at 0	ktCO2	0	0			





Results achieved by sectors

The energy transition in the seafood sector has already achieved excellent results, and emissions from fishing vessels decreased by 23% in the period 2005-2021.^h

By taking the actions set out in the government's action plan, emissions are expected to have decreased by 42% in 2030 under the baseline scenario, but this does not factor in the impact of the energy transition in the seafood sector.ⁱ

Road transport and transportation are important when it comes to the energy transition. The increasing use of electric vehicles requires the rapid development of transport infrastructure and the building up of electricity transmission and distribution systems. Despite growth in the use of ecofriendly power sources, emissions from road transportation have increased since 2005, and the latest forecasts from Orkustofnun predict an 11% reduction instead of 55% by 2030.^{h,j}

The percentage of loans to buy electric cars of the Bank's total car loans has increased rapidly in recent years. In 2021, the percentage was just under 15% but increased to 22% in 2022 and was 21.5% in 2023.

Emissions from the metal industry peaked in 2008 in Iceland and the industry is responsible for 90% of all emissions from industry in Iceland.^h Aluminium plants are included in the EU Emissions Trading System (EU ETS), and references to total emissions without land use mean emissions for which Iceland is directly responsible and emissions from ETS. Total emissions from heavy industry represented 39% of total emissions in Iceland in 2018.ⁱ

Aluminium companies are aiming for 40% reduction in emissions by 2030 compared with 2005, and electrification and innovation play a large role in this. In addition, there are financial incentives, and Icelandic companies pay for emissions allowances under ETS.^k The scenarios from the Environment Agency of Iceland indicate however that emissions will be unchanged over the next few years.^h



Emissions from industry in Iceland increased sharply after 2005 and over a period of three years emissions had doubled. Emissions peaked in 2008 but they have been stable since 2015, increasing by only 1.9% up until 2021.^h

Iceland's general target to reduce emissions by 55% by 2030 from 2005 applies to all industry and manufacturing although certain sectors have set special targets. The government's action plan sets out joint targets for energy production and smaller industry, and these sectors saw a 45% reduction between 2005 and 2018, and 67% total reduction is targeted by 2030.ⁱ

The main challenges facing the energy sector in Iceland are ensuring low-emission electric power across the country. The measures mentioned in the Business Climate Guide include preventing the use of fossil fuels for district heating and reserve power by increasing the electricity supply and improving infrastructure.^k

According to emissions figures from the Environment Agency, total emissions (excl. LULUCF) from energy had decreased by more than 18% at the end of 2021 compared with 2005. Emissions from geothermal heat means that this figure is not even lower, as at the same time emissions from geothermal plants increased by half.^h In the second edition of the action plan, the authorities set out a special measure for capturing carbon from geothermal plants, and the target there is at least 47% reduction up to 2030 from 2005.ⁱ

Agriculture has the highest emissions intensity of the sectors in the loan book, but it has been difficult to measure the real impact of measures set out in the government's climate action plan.^h

The majority of emissions from agriculture comes from methane emissions from livestock and agricultural soil which is difficult to stop with technological solutions. However, there has been a positive change in total emissions from agriculture in recent years, and between 2015-2021 emissions decreased by 6%.^g

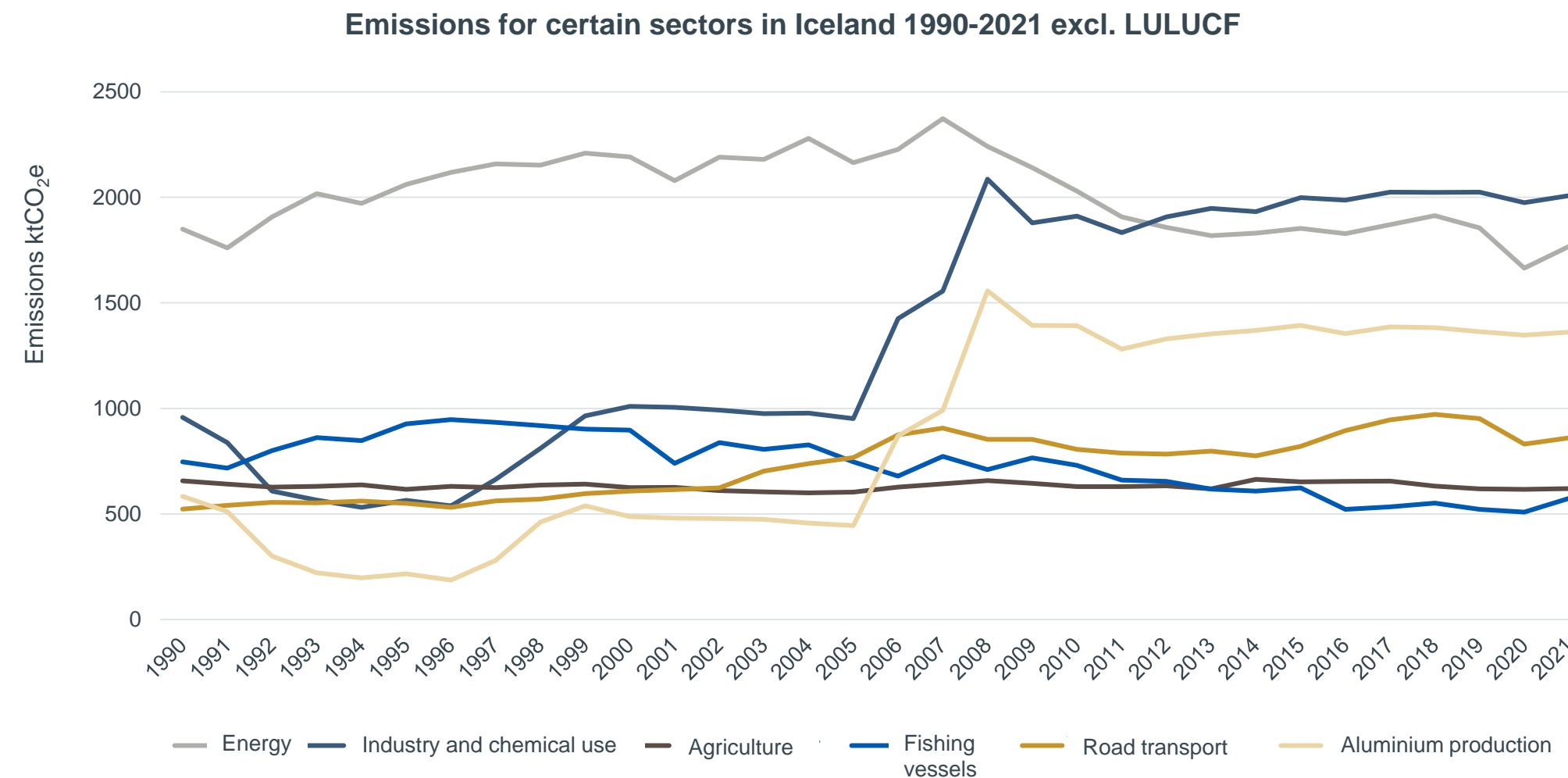




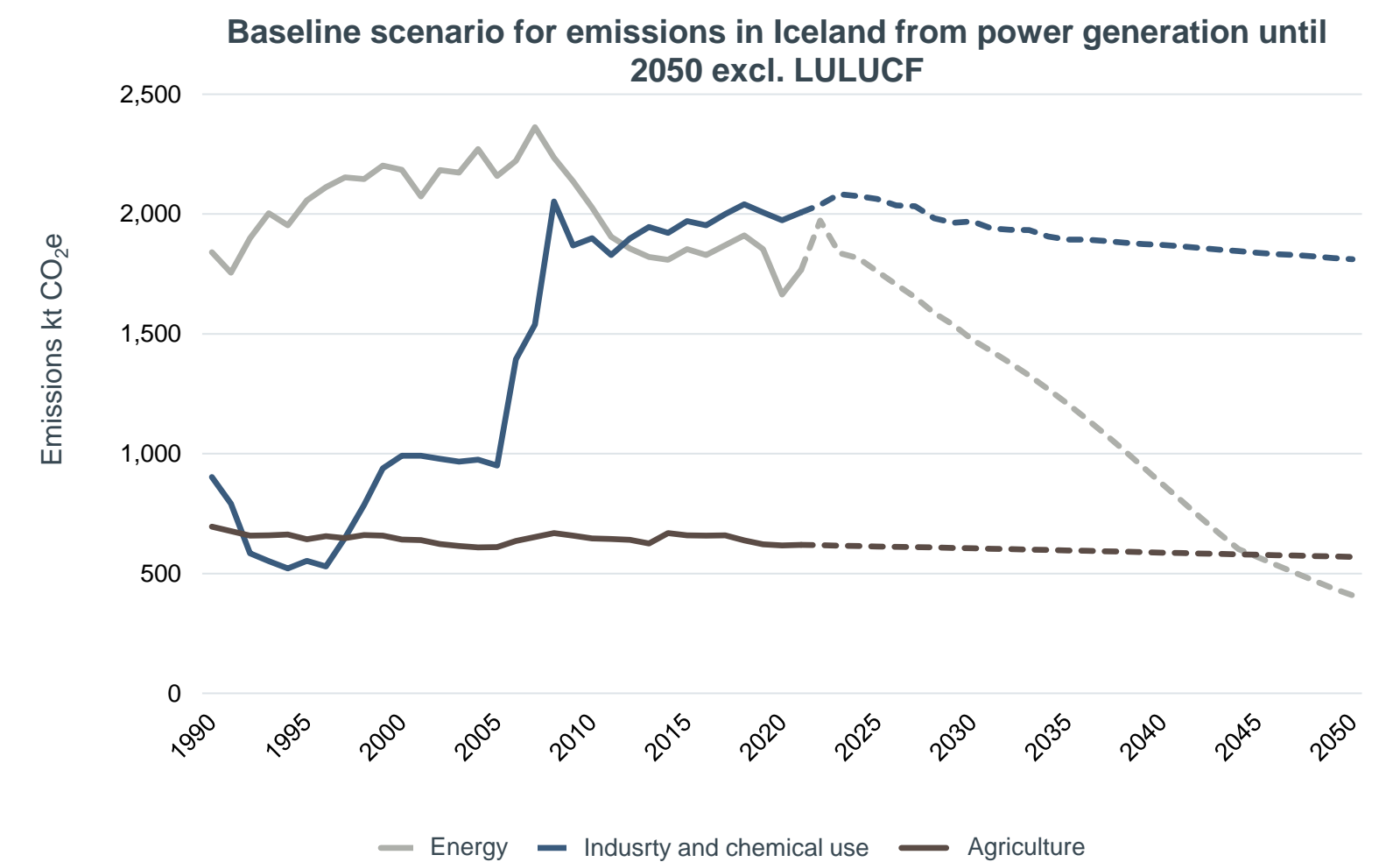
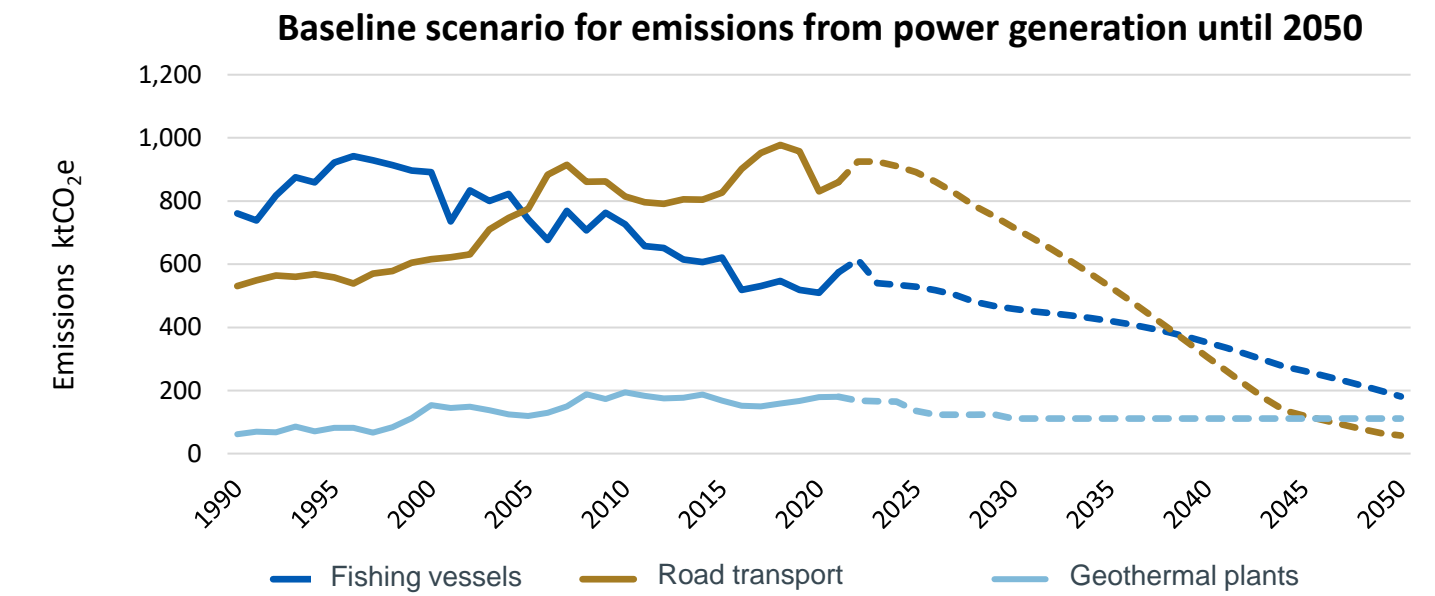
Future trends

Total greenhouse gas emissions from the energy sector have been decreasing in Iceland since 2008 and the Environment Agency assumes that emissions will decrease dramatically in the coming years. In the national emissions accounts, emissions from fishing vessels and road transportation are classed under the energy sector. The diagram below shows changes in emissions from these sectors between 1990 and 2021, plus total emissions from industry and material use, agriculture and aluminium production. Aluminium production is also included in total emissions from industry in this data. ^h

The baseline scenario for the sectors which apply to the economic sectors for which the Bank's first targets are set can also be seen here. The diagram shows that estimated reductions in agriculture and energy, including emissions from fishing vessels and road transportation, are line with set targets. In their current form emissions from industry are decreasing slower than required to meet the commitments under the Paris Agreement and therefore it is vital that innovation and solutions which bind carbon in the metal industry are applied as soon as possible. Emissions reductions in the energy sector are mainly due to the energy transition, and an international consensus has been reached on the phasing out of fossil fuels. ^l



It can be clearly seen that emissions from fishing vessels are decreasing, but on the other hand emissions from road transportation have increased. The Bank's targets are set for specific sectors and therefore power generation is separate from other emissions factors connected to energy. The scenarios of the Environment Agency assume stable emissions from geothermal plants up to 2050.





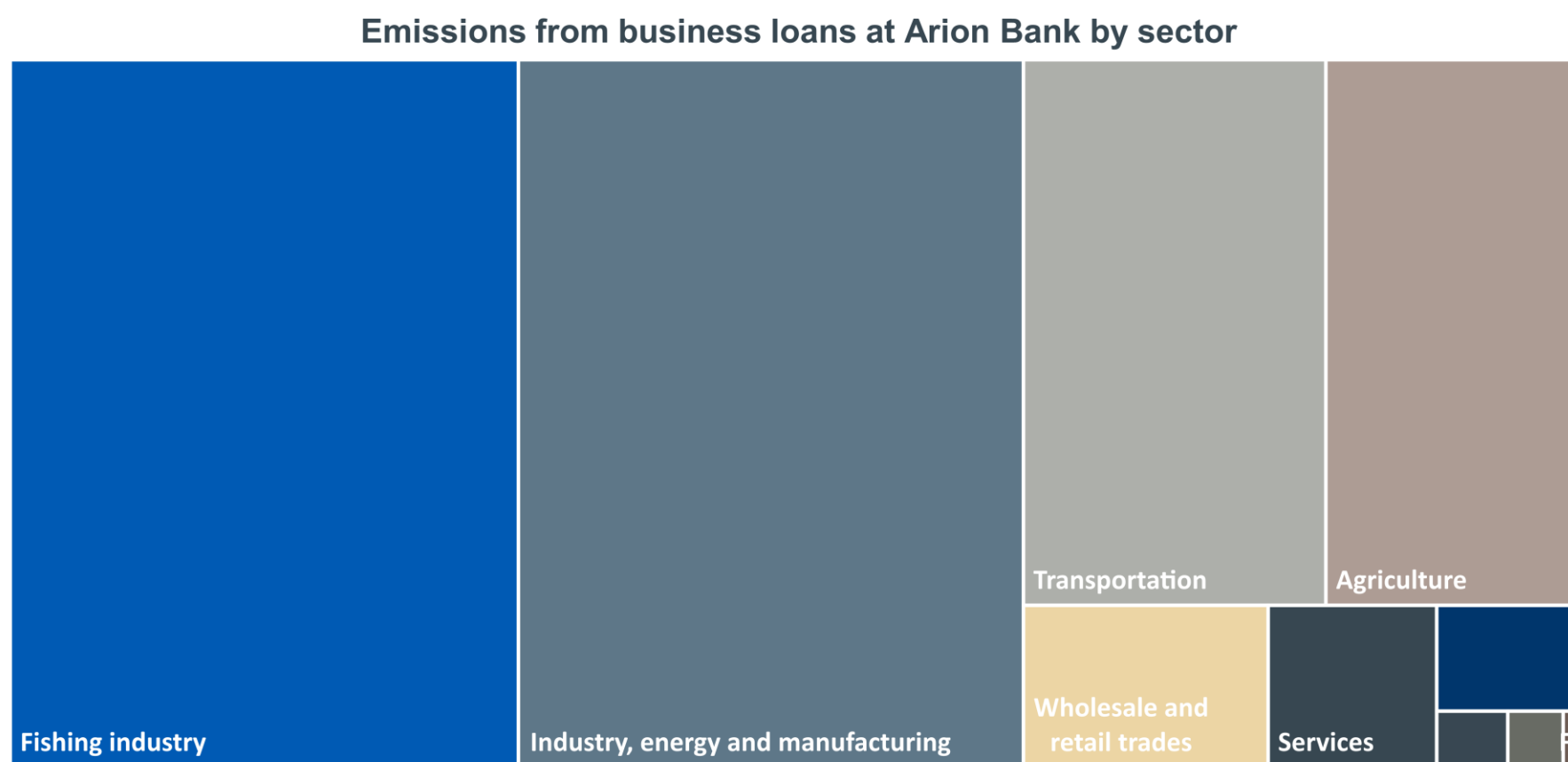
Methodology for setting targets

The UNEP FI guidelines referred to by NZBA list carbon-intensive sectors in which reductions in greenhouse gas emissions are targeted. By comparing the results of financed emissions at Arion Bank with that list, five economic sectors are identified as priority sectors in terms of setting targets. The sectors align with the division in the loan book, although individual industries are distinguished within industry, energy and manufacturing. Therefore, power generation is kept separate from other production, as is aluminium production, concrete, iron and steel. Within these sectors only loans to companies in energy production and aluminium production are in Arion Bank's loan book in 2022.

In addition, it was decided to set targets on financing to coal and oil companies, since both SBTi and NZBA are seeking to phase out fossil fuels from the loan books of financial institutions.

The government's targets and the special sector targets, where available, were analyzed. The government's overarching target is to achieve 55% reduction in emissions up to 2030 compared with 2005 in order to meet the commitments under the Paris Agreement. A more detailed breakdown is published in the climate action plan but not all sectors are expected to achieve the same results. The adaptability and base emissions of different activities are taken into account and therefore the targets in power generation for example are far more ambitious than in agriculture. Targets have also been set with the reference year after 2005 and this takes into account the changes in emissions from sectors up to that date.

Arion Bank's targets are based on the following sector targets:



Sector	Issued targets
Seafood	The Business Climate Guide 2023 sets target of 55% reduction 2005-2030 ^m
Power generation	Climate action plan, 2nd edition, 2020 assumes 39% reduction 2018-2030 ⁿ
Transportation	The Business Climate Guide 2023 sets target of 55% reduction 2005-2030 and Climate action plan, 2nd edition, 2020 assumes 37% reduction 2018-2030 ^o
Agriculture	Climate action plan, 2nd edition, 2020 assumes 10%-20% reduction 2005-2030 ^p
Aluminium production	The Business Climate Guide 2023 sets target of 40% reduction 2015-2030 ^r

^m [Business Climate Guide: Seafood](#)
ⁿ [Climate action plan, 2nd edition](#) p. 51
^o [Business Climate Guide](#) p. 9-12 and 45-47 and [Climate Action Plan, 2nd edition](#) p. 41
^p [Climate action plan, 2nd edition](#) p. 38. Calculations correspond to 15% reduction
^r [Business Climate Guide: Aluminium production](#)

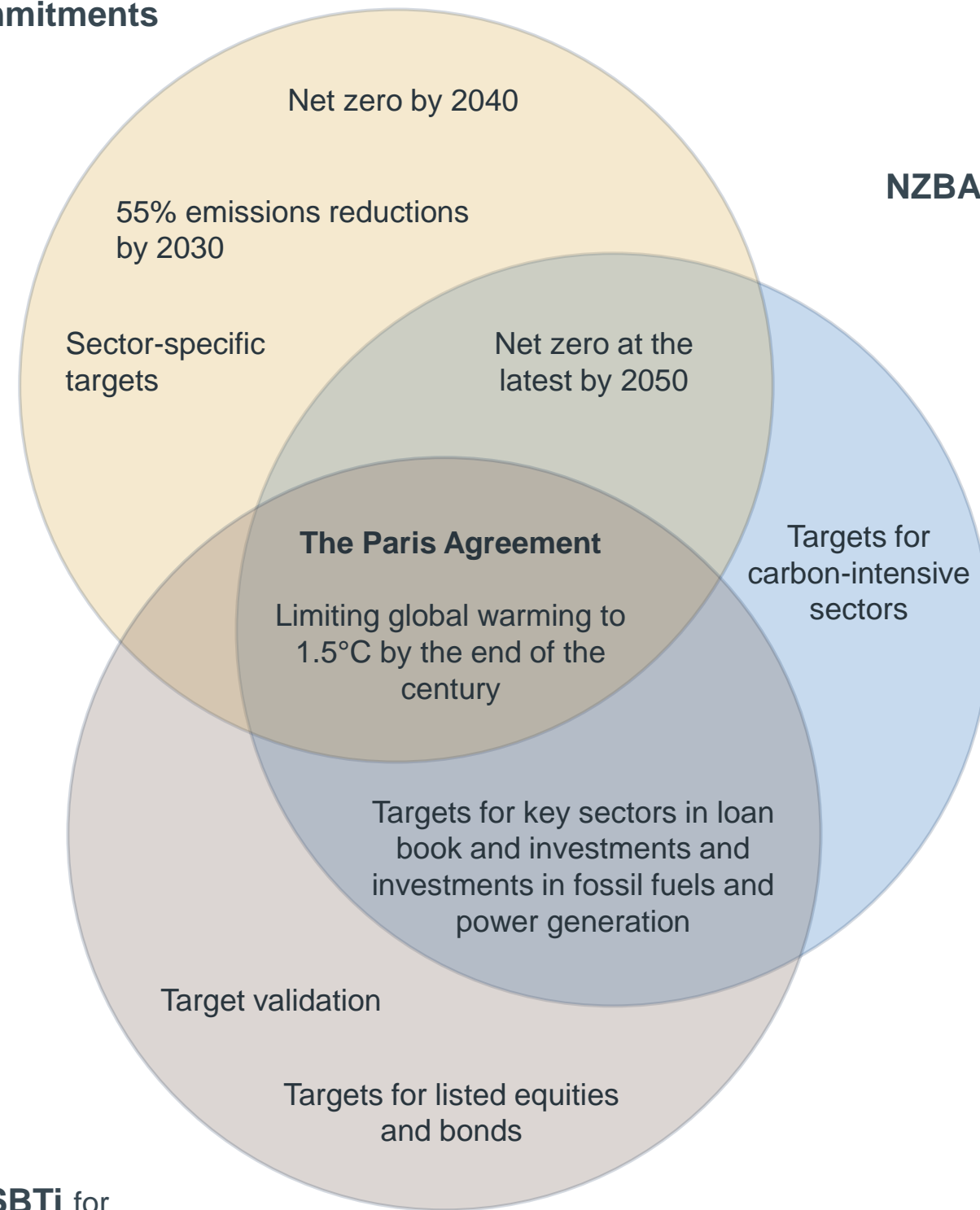




Methodology

continued

Iceland's commitments

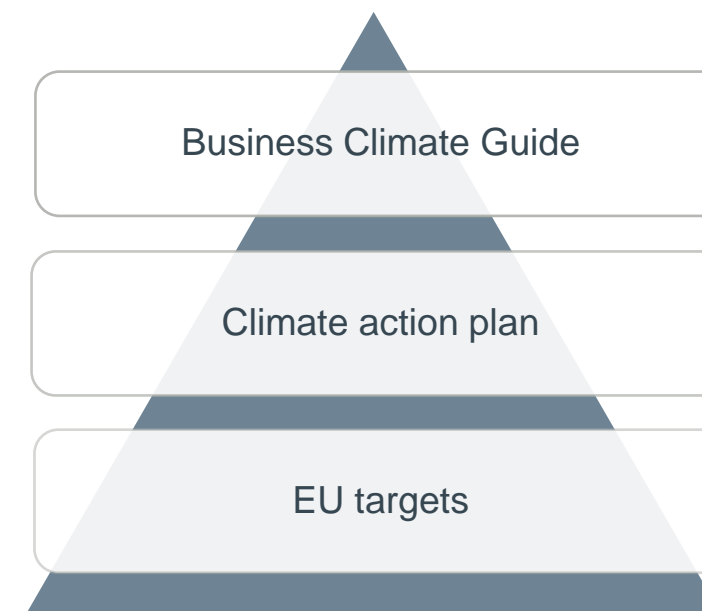


Since Arion Bank is committed to setting science-based targets in line with SBTi guidelines aimed at restricting global warming to within 1.5°C compared with pre-industrial revolution temperatures, these guidelines will be used as a reference in setting targets in the future.

Membership of NZBA gives the option of setting targets in a similar way to other banks, but the SBTi framework for financial institutions is still under development. Both initiatives recommend focusing on first setting targets in areas with the greatest impact. Emissions estimates should be in line with scenarios put forward by recognized entities and should align with the Paris Agreement.

A significant part of the guidelines concerns reducing financing to coal processing and fossil fuels. Therefore, Iceland's geographical location gives it a bit headstart as virtually all energy production in Iceland uses renewables. However, this unique position complicates the target validation process, as a framework for the seafood industry, for example, has yet to be created, and therefore it is not possible to get emissions reductions for the seafood sector validated by SBTi at the moment.

Order of priorities for setting targets



Sector-specific targets are set on the basis of the issued targets for the sectors themselves and government plans for certain sectors. Priority economic sectors are defined according to the UNEP FI guidelines and Arion Bank's loan portfolio is analyzed using PCAF methodology.

Where sectors have published targets in the Business Climate Guide, this data is used for calculations. Otherwise, the climate action plan issued by the Ministry for the Environment and Resources is used. Calculations always used the latest available figures and it was decided to use the same approach for all sectors for the sake of consistency. Once more categories are added, targets issued by the European Union will probably be referred to in cases where no data from Iceland is available.

The targets will be reviewed and updated in line with issued government and sector targets and in accordance with SBTi guidelines. Targets are presented as far as is known based on available data and may change as knowledge and experience increase.

Arion Bank's targets are in accordance with both international and domestic criteria and therefore Arion Bank is setting a target on net zero by 2040. This is more ambitious than provided for in international action plans but in line with Iceland's policy, and we know how important it is that society responds quickly and decisively to combat further global warming.

Arion Bank wants to be one of the leading banks globally with a clear climate policy. The work ahead of us is both challenging yet stimulating as we seek to support the Bank's customers on their journey towards sustainability and to encourage them to take meaningful climate action.



Additional material





NACE - Statistical Classification of Economic Activities

Financed emissions broken down according to NACE classification for 2022.

Those categories which come under the financed emission reduction targets are defined as certain sub-categories according to NACE classification and apply to the sectors which cause the most emissions in the loan book of Arion Bank.

NACE	Book value ISKm	Financed emissions ktCO ₂ e	Emissions intensity tCO ₂ e/ISKm	Data quality Weighted average
A - Agriculture, forestry and fishing	55,264	30.3	0.55	3.61
B - Mining and quarrying	90	0.0	0.06	4
C - Manufacturing	82,192	73.4	0.89	3.51
D - Electricity, gas, steam and air conditioning supply	719	0.1	0.20	3.95
E - Water supply; sewerage; waste management and remediation activities	6,340	3.5	0.55	2.97
F - Construction	53,374	1.9	0.04	4
G - Wholesale and retail trade; repair of motor vehicles and motorcycles	37,676	4.2	0.11	3.65
H - Transportation and storage	13,407	20.6	1.54	3.02
I - Accommodation and food service activities	45,808	0.8	0.02	4
J - Information and communication	24,521	0.4	0.02	3.33
K - Financial and insurance activities	42,262	0.2	0.00	3.97
L - Real estate activities	105,915	0.1	0.00	3.94
M - Professional, scientific and technical activities	5,681	0.2	0.04	3.99
N - Administrative and support service activities	5,920	0.4	0.06	4
P - Education	889	0.0	0.01	4
Q - Human health and social work activities	1,150	0.4	0.38	4
R - Arts, entertainment and recreation	2,155	0.2	0.10	4
S - Other service activities	1,079	2.6	2.42	4
	484,443	139.4	0.29	3.75





Updated figures for 2021

Since financed emissions of Arion Bank for 2022 were calculated using data from Vera, Creditinfo's ESG platform, financed emissions in 2021 were recalculated using data from the same database. This has been done in order to be able to compare results between years without inconsistency due to the use of different methodologies in the calculations. Updated tables are published here and using data from Vera enhances the data quality in accordance with PCAF methodology.

	Total assets	In scope	Out of scope	Financed emissions	Emissions intensity	Data quality
	ISKm	ISKm	ISKm	ktCO2e	tCO2e/ISKm	Weighted average
Cash and balance with Central Bank	69,057		69,057			
Loans to credit institutions	30,272		30,272			
Loans to customers	936,237	867,183	69,054	133.7	0.15	3.85
Financial instruments	225,657	156,849	68,808	260.9	1.66	1.30
Investment property	6,560		6,560			
Investments in associates	668		668			
Intangible assets	9,463		9,463			
Tax assets	2		2			
Assets and disposal groups held for sale	16,047		16,047			
Other assets	19,901		19,901			
Total assets	1,313,864	1,024,032	289,832	394.6	0.39	3.46

Loans to customers		Individuals		Corporates		Financed emissions	Emissions intensity	Data quality
		Individuals	Corporates	Individuals	Corporates			
Overdrafts	31,476		16,001	13,691	1,784	12.6	0.79	3.99
Credit cards	14,446		1,363	13,037	46	1.6	1.21	3.90
Mortgages	504,877	452,582	41,245	10,875	175	10.7	0.02	4.00
Construction loans	17,775		17,000	0	775	0.1	0.01	4.00
Capital lease	8,294	4,042	2,176	409	1,667	5.0	0.81	2.18
Other loans	359,369	9,004	323,769	22,858	3,738	103.6	0.31	3.65
Total	936,237	465,628	401,555	60,870	8,184	133.7	0.15	3.85





Updated figures for 2021

Emissions proved to be lower than in the previous report on financed emissions for 2021, and this difference is due to lower emissions factors. The table to the right displays listed equities and bonds, business loans and unlisted securities, and mortgages. The results for emissions from car and equipment loans remains unchanged. Calculations apply to the Group's financed emissions, and figures for Arion Bank appear in brackets.

Older calculations for emissions from retail mortgages only took into account emissions from low-temperature processing (≈ 0 g/kWh). The updated calculations also take into account high-temperature processing which has a higher carbon footprint (7.4 g/kWh) which explains the increase in financed emissions from the mortgage portfolio.

Motor vehicle loans

	Book value	Financed emissions	Emissions intensity	Data quality
	ISKm	ktCO ₂ e	tCO ₂ e/ISKm	Weighted average
Fossil fuel vehicles	10,271	9.37	0.91	2.24
Hybrid vehicles	4,252	1.07	0.25	2.00
Green vehicles	2,560	0.01	0.002	2.00
	17,083	10.44	0.61	2.15

Sovereign bonds

	Book value	Financed emissions excl. LULUCF	Emissions intensity excl. LULUCF	Financed emissions incl. LULUCF	Emissions intensity incl. LULUCF	Data quality
	ISKm	ktCO ₂ e	tCO ₂ e/ISKm	ktCO ₂ e	tCO ₂ e/ISKm	Weighted average
Sovereign bonds	116,877 (112,331)	156.1 (148.6)	1.34 (1.32)	258.9 (236.3)	2.21 (2.10)	1.00 (1.00)

Listed equities and bonds

	Book value	Financed emissions	Emissions intensity	Data quality
	ISKm	ktCO ₂ e	tCO ₂ e/ISKm	Weighted average
Listed equities	7,629 (2,659)	1.46 (1.08)	0.19 (0.4)	2.03 (2.09)
Listed bonds	27,121 (21,788)	0.06 (0.01)	0.002 (0.001)	2.00 (2.00)
	34,750 (24,447)	1.52 (1.09)	0.04 (0.04)	2.01 (2.01)

Business loans and unlisted equity

	Book value	Financed emissions	Emissions intensity	Data quality
	ISKm	ktCO ₂ e	tCO ₂ e/ISKm	Weighted average
Business loans	397,518	120.52	0.30	3.75
Unlisted equity	5,222 (4,646)	0.54 (0.47)	0.10 (0.1)	3.40 (3.54)
	402,740 (401,164)	121.06 (120.99)	0.30 (0.30)	3.75 (3.75)

Business loans by sector

Sector	Book value	Financed emissions	Emissions intensity	Data quality
	ISKm	ktCO ₂ e	tCO ₂ e/ISKm	Weighted average
Information and communication technology	18,878	0.27	0.01	2.65
Transportation	12,455	26.69	2.14	2.9
Fishing industry	78,055	37.49	0.48	3.52
Industry, energy and manufacturing	28,217	24.46	0.87	3.56
Real estate and construction	125,735	1.62	0.01	3.95
Wholesale and retail trades	68,842	6.46	0.09	3.97
Services	12,422	7.56	0.61	3.99
Financial and insurance services	40,706	0.13	0.00	4
Agriculture	10,011	14.55	1.45	4
Public administration, human health and social act.	2,197	1.30	0.59	4
	379,518	120.52	0.30	3.75

Retail mortgages

Type of housing	Book value	Financed emissions	Emissions intensity	Data quality
	ISKm	ktCO ₂ e	tCO ₂ e/ISKm	Weighted average
Single family home	130,541	1.15	0.009	4
Terraced house	116,737	0.82	0.007	4
Apartment	204,381	0.74	0.004	4
Other	924	0.005	0.006	4
	452,582	2.72	0.006	4





Breakdown according to NACE classification for 2021

Financed emissions broken down according to NACE classification for 2021 with data from Vera.

The updated figures for the carbon footprint of the loan portfolio for 2021 can be seen here and the calculations are done in the same way as for 2022. A re-estimate was made to form a reliable basis for reduction targets since to assess progress between years figures need to be comparable. The main difference between previous calculations and the latest data is due to lower emissions factors. This particularly applies to final emissions and emissions intensity in sector classes A, E, F, H and S.

NACE	Book value ISKm	Financed emissions ktCO2e	Emissions intensity tCO2e/ISKm	Data quality Weighted average
A - Agriculture, forestry and fishing	55,776	25.7	0.46	3.70
B - Mining and quarrying	94	0.0	0.10	4
C - Manufacturing	53,923	45.4	0.84	4
D - Electricity, gas, steam and air conditioning supply	725	0.1	0.14	4
E - Water supply; sewerage; waste management and remediation activities	5,922	5.3	0.90	2
F - Construction	31,236	1.5	0.05	4
G - Wholesale and retail trade; repair of motor vehicles and motorcycles	27,890	2.2	0.08	3.93
H - Transportation and storage	12,455	26.7	2.14	2.90
I - Accommodation and food service activities	40,953	4.3	0.10	4
J - Information and communication	18,878	0.3	0.01	3
K - Financial and insurance activities	40,706	0.1	0.00	4
L - Real estate activities	94,499	0.1	0.00	4
M - Professional, scientific and technical activities	3,482	0.3	0.08	3.98
N - Administrative and support service activities	5,610	2.2	0.39	4
P - Education	854	0.3	0.38	4
Q - Human health and social work activities	1,166	0.9	0.74	4
R - Arts, entertainment and recreation	2,444	0.7	0.28	4
S - Other services activities	905	4.5	4.97	4
	397,518	120.5	0.30	3.75



