Landsbankinn's Financed Carbon Emissions

January 2025

Estimated emissions in 2023
according to PCAF methodology

Deloitte.

Independent Auditor's Assurance Report

To the Management and the stakeholders of Landsbankinn hf.
We have been engaged by Landsbankinn hf. to provide limited assurance on Landsbankinn's report of financed emissions for the year 2023 ("the PCAF Report") according to the PCAF methodology.

Our engagement was performed in order to:

- Assess disclosures presented in Landsbankinn´s report of carbon emissions in loan portfolio for the year 2023.

We express a conclusion providing limited assurance.

Management's responsibility
The Management of Landsbankinn is responsible for collecting, analysing, aggregating and presenting the information in the report, ensuring that the information is free from material misstatement, whether due to fraud or error.

Our independence and quality control
We have complied with the independence and other ethical requirements of the Code of Ethics for Professional Accountants (IESBA Code), which are based on the fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behaviour.

Deloitte ehf. is subject to International Standard on Quality Management (ISQM) 1 and, accordingly, applies a comprehensive quality control system, including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

Auditor's responsibility
Our responsibility is to express a limited assurance conclusion on Landsbankinn´s PCAF Report. We have conducted our work in accordance with ISAE 3000 (revised), Assurance Engagements Other than Audits or Reviews of Historical Financial Information, to obtain limited assurance about our conclusion. In accordance with the standard we have planned and performed our work to obtain limited assurance about whether the PCAF Report is free from material misstatement.

A limited assurance engagement is less in scope than a reasonable assurance engagement. Consequently, the level of assurance obtained in a limited assurance engagement is lower than the assurance that would have been obtained had we performed a reasonable assurance engagement. Considering the risk of material misstatement, we planned and performed our work to obtain all information and explanations necessary to support our conclusion.

We performed reviews of data, recalculation of selected key performance indicators, reviews of the underlying data processes as well as interviews with those responsible for producing and preparing the data. Our work has included interviews with key employees of Landsbankinn, inquiries regarding procedures and methods to ensure the appropriateness of the disclosures in Landsbankinn´s PCAF Report. We have assessed processes, tools and controls for gathering, consolidating and aggregating data at Landsbankinn, and performed analytical review procedures and tested data prepared against underlying documentation.

Conclusion
Based on the procedures we have performed and the evidence we have obtained, nothing has come to our attention that causes us to believe that Landsbankinn's PCAF Report for the years 2023 is not prepared, in all material respects, in accordance with the PCAF methodology.

Kópavogi, 24 January 2025

Deloitte ehf.

Birna María Sigurðardóttir

Birna María Sigurðardóttir
State Authorised Public Accountant

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Main conclusions

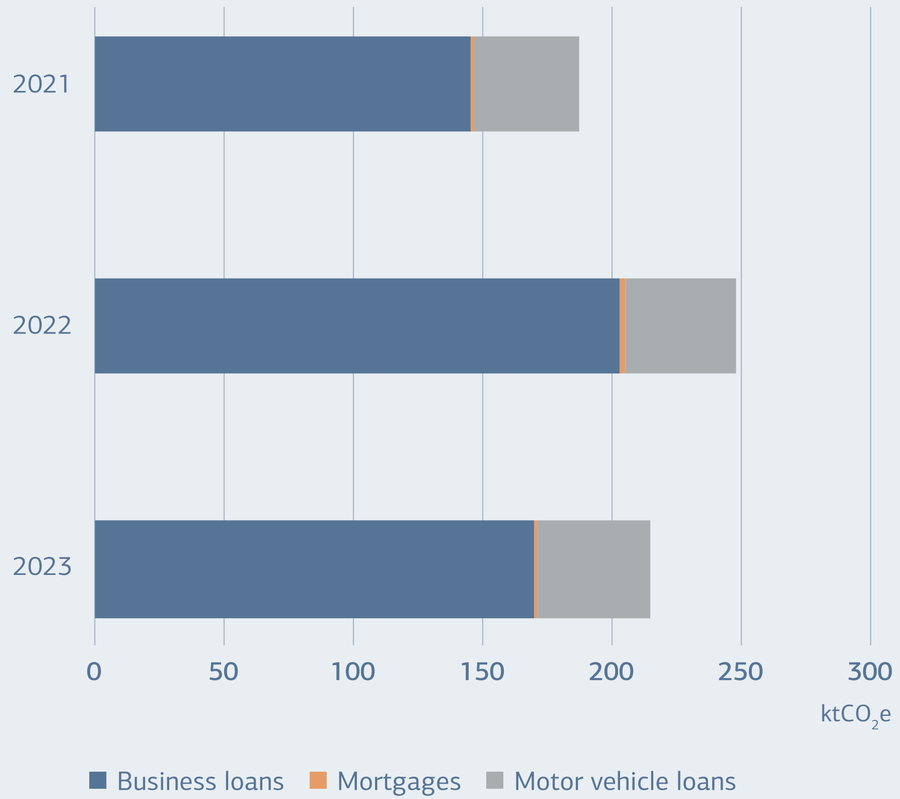
Main conclusions

Landsbankinn’s analysis is based on the Group’s balance sheets for 2023. The Bank’s indirect emissions through lending to customers is estimated at 215 $ktCO_2e$[1] and just under 134 $ktCO_2e$ for financing. Total emissions are therefore just over 348 ktCO2e. Emissions from investment are almost exclusively from sovereign debt and exclude emissions from land use, land-use change and forestry (LULUCF).

As with the release of the Bank's previous report on financed emissions, an update has been made to the baseline data for the emission factors used by the Bank. This change only affects the calculation of financed emissions related to residential mortgages. Further details on the new emission factors are provided in the section on residential mortgages and to ensure consistency across years, the Bank has recalculated the financed emissions for residential mortgages for the years 2019–2022 (see supporting materials). We are constantly looking for ways to improve basic and supplementary data for carbon calculations. The Bank has implemented a new sustainability platform called Vera, which provides access to information on environmental, social and governance (ESG) factors in the operations of Icelandic companies in a standardised manner.

The Bank’s science-based targets (SBTi[2]) to reduce emissions from its credit and asset portfolio use 2019 as a base year. Financed emissions from the Bank’s credit portfolio in 2023 are ca. 53 $ktCO_2e$ lower than in the base year,

Carbon emissions in Landsbankinn's credit portfolios 2021-2023



1 Kilotons of CO_2-equivalent. Because there are many types of greenhouse gases and they vary in intensity, their effects are converted to CO_2-equivalent. One CO_2-equivalent equals one CO_2.
2 Science Based Targets initiative

which can be attributed to lower emissions from corporate customers in the travel sector.

Estimates of Scope 3 emissions from the Bank's customers are a little higher than in the previous report. The primary reason for this increase is the update of emission figures reported by companies, as additional emission components are being incorporated. Emissions are estimated at around 774 $ktCO_2e$ in 2023, compared to around 631 $ktCO_2e$ in 2022. Scope 3 emissions from customers have increased while their Scope 1 and 2 emissions have contracted. Other Scope 3 emissions from the Bank's asset portfolio are relatively low compared to emissions from customers, or less than 2 $ktCO_2e$.

The Bank's analysis extends to around 92% of loans and receivables due from customers. In 2023, the Bank's five most emission-heavy customers accounted for just over a third of the Bank's financed emissions from its credit and asset portfolios, compared to over 50% in 2019.

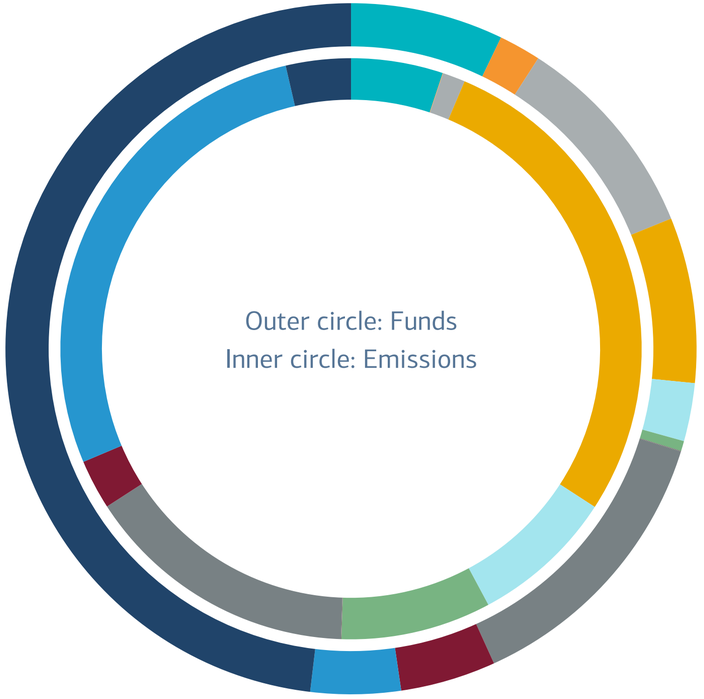
Conclusions show both total emissions and the emission intensity of customers and categories. The emission intensity is estimated emission per borrowed 1 ISK. The emission intensity does not necessarily increase concomitant with total emissions.

The emission intensity of the Bank's credit and asset portfolio measured 0.21 tCO_2e/ISK million (ISKm) in 2023, down from 0.25 tCO_2e/ISKm in 2022. On the other hand, it has decreased by nearly 47% compared to the base year 2019. This is largely attributed to reduced emissions from government bonds and vehicle and equipment loans, and, in some cases, changes in company operations and increased market value of listed companies.

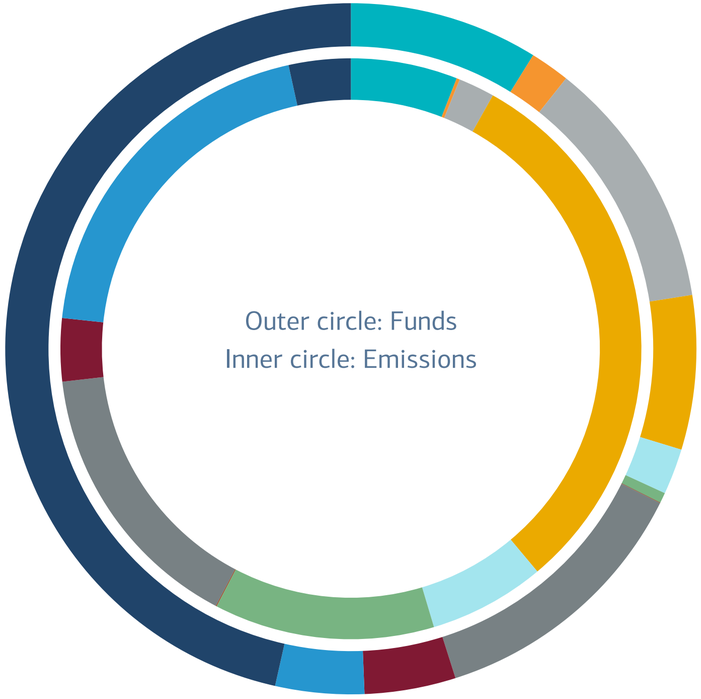
The emission intensity of the Bank's corporate customers decreases by 0.07 tCO_2e/ISKm from the previous year, to 0.22 tCO_2e/ISKm, or by just over 20%. Taking changes in the market value of companies since 2019 into account, the emission intensity is 0.25 tCO_2e/ISKm, which is 0.07 tCO_2e/ISKm lower than in the base year. The emission intensity from retail customers is generally low compared to that of companies. Their emissions intensity was 0.01 tCO_2e/ISKm, representing a reduction of over 25% from the previous year and more than 70% from the base year.

Credit portfolio 2021

Credit portfolio 2022



Credit portfolio 2023



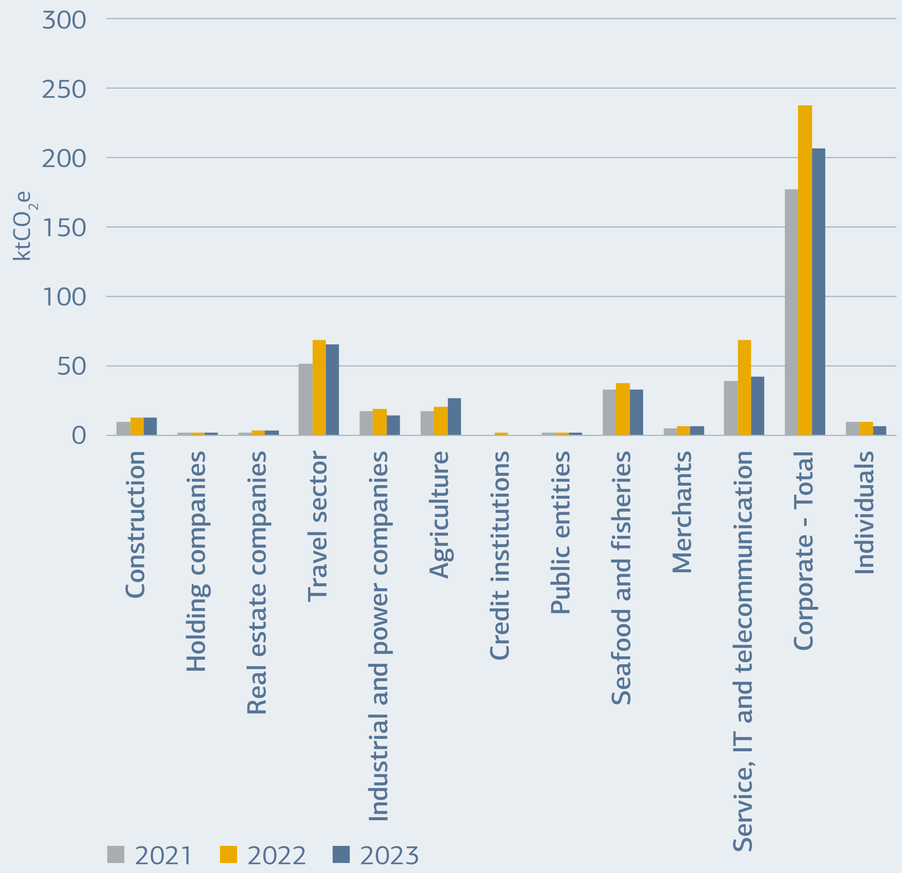
- Construction
- Industrial and power companies
- Seafood and fisheries
- Holding companies
- Agriculture
- Merchants
- Real estate companies
- Credit institutions
- Service, IT and telecommunication
- Travel sector
- Public entities
- Individuals

Sectors with the most carbon emissions

The three sectors in the Bank's credit portfolio with the highest emissions are the travel sector, fisheries and seafood, and services, IT and telecommunication. These sectors have had the highest emissions since the Bank began calculating its financed emissions in 2019 and are responsible for around 66% of estimated total emissions from the Bank's credit portfolio. The travel sector on the one hand and services, IT and telecommunications on the other are estimated to have the highest emissions in 2023, or about 66 $ktCO_2e$ and 43 $ktCO_2e$ respectively. The travel industry has traditionally had the highest total emissions but has also been the sector that has achieved the highest reductions since 2019, when it stood at close to 130 ktCO2e.

Emissions from services, IT & communications decrease by just under 38% between years after having increased by 81% between 2020 and 2022. Fisheries are the third largest sector in terms of carbon emissions with emissions from the sector in 2023 amounting to approximately 33 $ktCO_2e$, down by 12% between years. Fisheries are a pivotal part of Icelandic industry and the Bank finances numerous companies in the sector, which represents the largest single corporate borrower by sector in the credit portfolio. The same can be said for passenger transport, mostly air travel, which is classified under the travel industry. Goods transport is also classified under services, IT & communications.

Carbon emissions by sectors



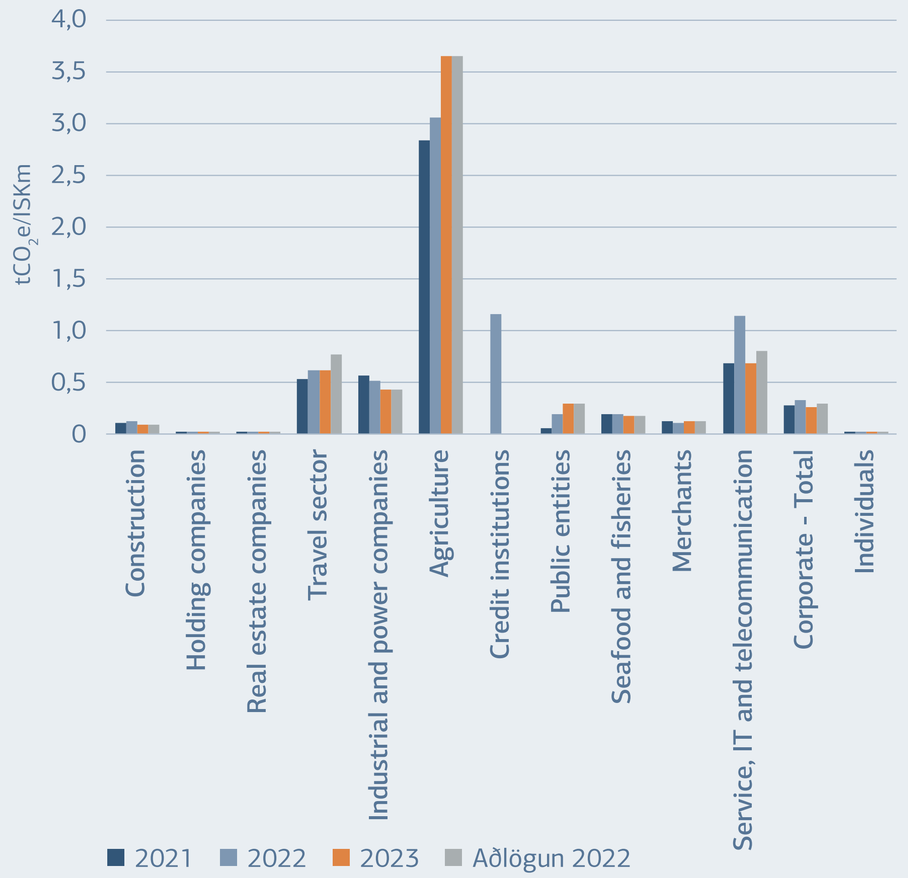
Sectors with the highest emission intensity

Agriculture continues to be estimated as having the highest emission intensity, or 3.65 tCO_2e/ISKm in 2023. The sector's emission intensity has increased every year from 2019, when it stood at 2.73 tCO_2e/ISKm. The services, IT & communications sector follows with an emission intensity of 1.06 tCO_2e/ISKm despite being one of the two most emission-heavy sectors. Emissions from other sectors are estimated at less than 1.0 tCO_2e/ISKm. Emission intensity from the travel industry has not changed between years and remains at 0.62 tCO_2e/ISKm, about half of the 2019 reference figure. When considering changes in the market value of listed tourism companies since 2019, this corresponds to over a 43% reduction in emissions per million ISK.

Emissions from loans to retail customers continue to contract

Analysis of loans to retail customers extends to mortgages and motor vehicle loans only. Mortgages to individuals comprise the largest loan category in the Bank's credit portfolio, or up to 45%. Mortgages to individuals comprise the largest loan category in the Bank's credit portfolio, or up to 45%. The increase was slight in 2023, or by 4%. Despite this growth in mortgage loans in recent years, there has been an overall decrease in emissions from

Emission intensity by sectors

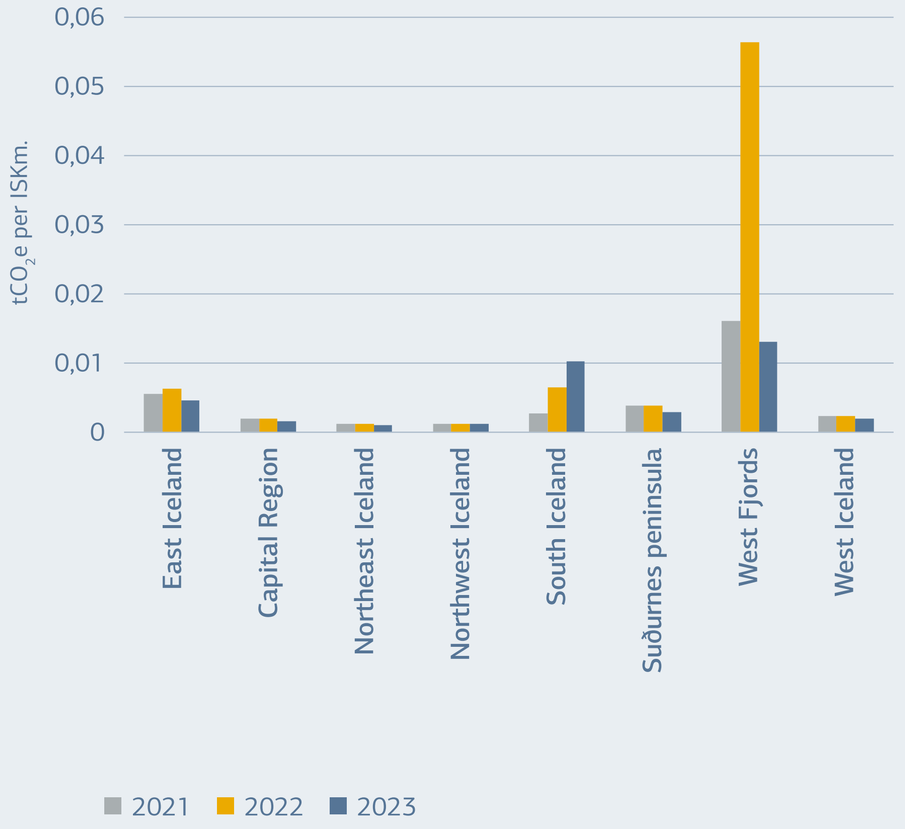


loans to retail customers that can be categorised as motor vehicle loans. Total emissions from housing mortgages are relatively low in Iceland by international comparison, as almost all residential buildings in Iceland use 100% renewable energy for electricity and heating. Despite this high proportion of renewable energy in energy consumption for housing, there are still cases where it is necessary to use fossil fuels temporarily or in full, such as for oil heating and heating from district heating plants. In the Bank's analysis, the country was divided according to the combination of energy sources in each area.

The estimated total emissions for the year decreased compared to the previous year, amounting to 1.7 $ktCO_2e$, whereas the previous year saw emissions peak at 2.1 $ktCO_2e$ based on the years the Bank has assessed its emissions. This represents a reduction of approximately 20%. In the overall context, this is still a very low figure compared to other loans in the Bank's credit portfolio.

The analysis results indicate that the emission intensity of housing loans decreased year-on-year in all regions except in South Iceland but remained highest in the Westfjords. Emission intensity there was approximately 13 times higher than in the region with the lowest emissions intensity, North

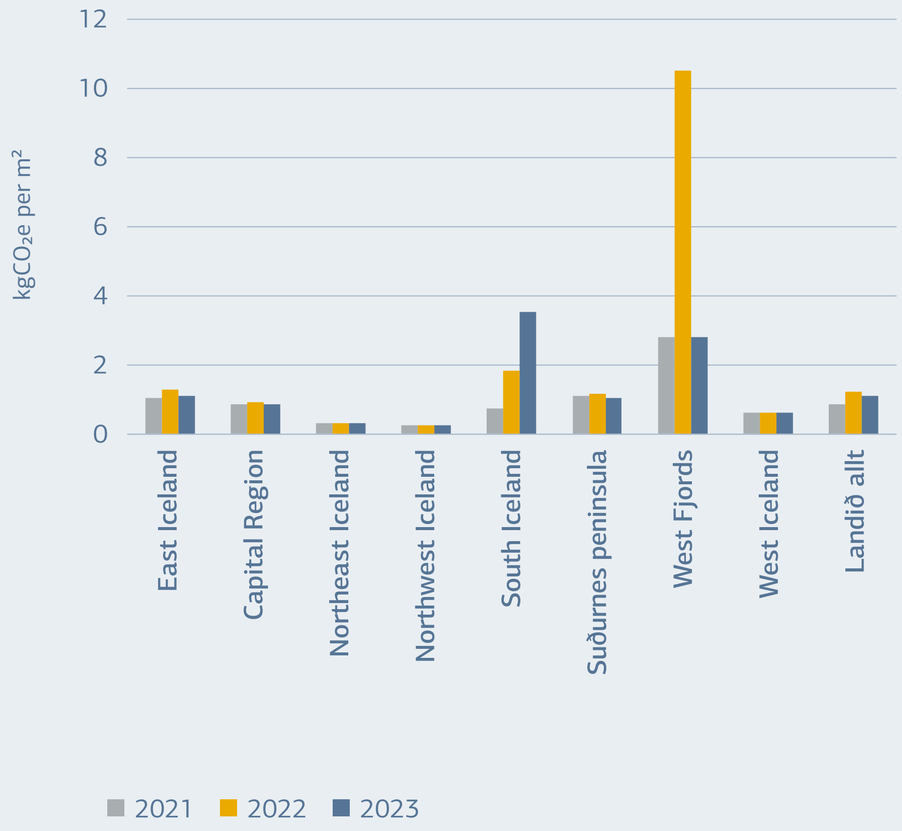
Emission intensity of mortgages by geographic area



Iceland. When assessed in terms of emissions per square meter of housing, a similar pattern emerges, with the relative difference between the highest-emitting region and the lowest being even greater: nearly 14 times higher. Emission intensity continues to be highest in regions serviced by district heating systems. These systems have experienced temporary reductions in electricity supply during parts of the year in recent years. As a result, district heating systems have had to rely on fossil fuels for operations instead of renewable electricity, leading to a corresponding increase in carbon emissions.

Carbon emissions from vehicle and equipment loans to retail customers decreased by 23% between 2022 and 2023, continuing the steady decline observed in recent years. Emissions from these loans totalled 5.7 $ktCO_2e$ in 2023, compared to 12.4 $ktCO_2e$ in the base year of 2019. This is primarily because individuals have sought out more environmentally friendly options when renewing their vehicles. There have also been constant developments in car manufacturing, with vehicles becoming increasingly fuel-efficient and thus emitting less carbon. This trend is expected to continue in the coming years, as importing vehicles running on fossil fuel will be prohibited after 2030.

Emissions from residential mortgages per square meter by region



This is different for corporate vehicle and equipment loans, where total carbon emissions increased by just under 3 $ktCO_2e$ between 2022 and 2023, although the emission intensity decreased by 10%. This increase in total emissions can be attributed to the 19% increase in corporate vehicle and equipment loans between years. The reduction in emission intensity can likewise be attributed to more environmentally friendly and fuel-efficient motor vehicles being purchased.

The travel industry is by far the most emission-heavy sector under vehicle and equipment loans, with just over 32 $ktCO_2e$ of emissions in 2023 compared to just over 29 $ktCO_2e$ in 2022 and 26 $ktCO_2e$ in 2021, which amounts to more than 85% of the total emissions from corporate vehicle and equipment loans.

Sovereign debt remains a major contributor to emissions

Financed emissions from the Bank's bond and equity portfolio excl. unlisted equities were estimated at 0.18 tCO_2e per ISK million in 2023. In comparison, financed emissions in the previous year amounted to 0.24 tCO_2e/ISKm. There are considerable financed emissions from sovereign debt compared to other classes analysed. Here, the composition of the bonds has a great effect, as the largest percentage of emissions may be traced to Icelandic sovereign bonds. Different countries report carbon emissions differently, so the results of the analysis show both carbon emissions with and without LULUCF. There is a reduction in carbon emissions between years, partly due to the lower weight of Icelandic sovereign bonds and a reduction in emissions from the sovereigns. Carbon emissions from sovereign debt excluding LULUCF were a little over 132 $ktCO_2e$ in 2023, compared to just under 136 $ktCO_2$ in 2022. The emission intensity of sovereign debt decreases from 1.29 tCO_2e/ISKm in 2022 to 0.97 tCO_2e/ISKm in 2023.

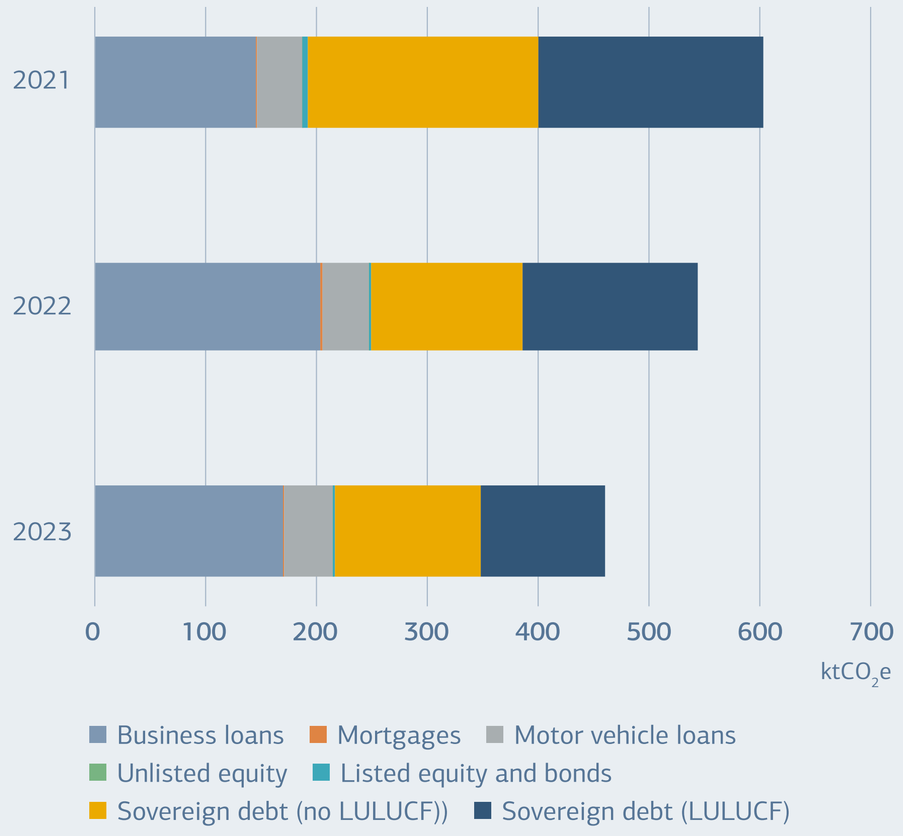
It should be kept in mind that carbon emissions from sovereign debt take into account the production emissions of the relevant countries and are only included in Scope 1. Thus it could be argued that there is some double counting of emissions, as factors such as emissions from energy production in the country are taken into account for the production emissions. The emission figures nevertheless provide a general overview and grasp of the actual emissions for these bonds and help provide an understanding of the big picture.

Opportunities and prospects for the future

Today’s rapid technological and social changes present numerous opportunities to reduce carbon emissions. The sectors and companies identified with the highest carbon footprint in the Bank's credit and asset portfolio are connected to the fisheries industry and transport of cargo and passengers. The operations of both these sectors are largely based on the use of fossil fuels. Considering the Icelandic government’s climate policy, fossil fuel use in Iceland is expected to decrease with the energy transition and improved fuel efficiency and may even be completely eliminated at some point in the future. The Bank will use the results of this analysis to follow up and assess its science-based targets for reducing carbon emissions from its credit and asset portfolio, as well as expanding the services provided to the Bank’s customers.

With the induction of the CSRD on sustainability reporting (EU 2022/2464) into Icelandic law, certain companies will be required to report on key material sustainability factors (including climate issues and mitigation measures) based on impact, opportunities, and risks. Such reporting is expected to better integrate sustainability into corporate strategy, influence emissions within their operations, and improve transparency over the long term.

Carbon emission of Landsbankinn’s credit and asset portfolios 2021-2023



Annual financial statement 2023

	Total assets	In scope	Outside scope	In scope	Financed emissions	Emission factor	Data quality	Adjusted emission intensity
	ISKm	ISKm	ISKm	Percentage	$ktCO_2e$	tCO_2e/ISKm	Weighted average	tCO_2e/ISKm
Cash and balances with Central Bank	75,350		75350					
Market bonds and other fixed-income securities	144,542	138,415	6,127	95.8%	131.6	0.95	2.0	0.95
Equity and equity instruments	17,642	16,980	662	96.2%	2.0	0.12	3.1	0.18
Derivative contracts	7,459		7,459					
Loans and receivables to credit institutions	54,101		54,101					
Loans and receivables to customers	1,630,896	1,493,696	137,199	91.6%	214.7	0.14	3.8	0.16
Investment in affiliates	6,877		6,877					
PPE	14,728		14,728					
Intangible assets	1,465		1,465					
Tax credits	-		-					
Other assets	5,843		5843					
Assets undergoing a sales process	148		148					
Total	**1,959,051**	**1,649,091**	**309,960**	**84.2%**	**348.3**	**0.21**	**3.6**	**0.23**

Loans to customers - 2023

	Total assets	In scope	Outside scope	In scope	Financed emissions	Emission factor	Data quality	Adjusted emission intensity
	ISKm	ISKm	ISKm	Percentage	$ktCO_2e$	tCO_2e/ISKm	Weighted average	tCO_2e/ISKm
Housing mortgages - Individuals	730,985	677,562	53,423	92.7%	1.66	0.002	4.0	0.002
Motor vehicle loans - Individuals and corporate	55,906	55,557	349	99.4%	43.5	0.78	2.3	0.78
Other loans - Individuals	71,473		71,473					
Other loans - Corporate	772,531	760,577	11,954	98.5%	169.6	0.22	3.7	0.25
Total	**1,630,896**	**1,493,696**	**137,199**	**91.6%**	**214.7**	**0.14**	**3.78**	**0.16**

Methodology

Methodology

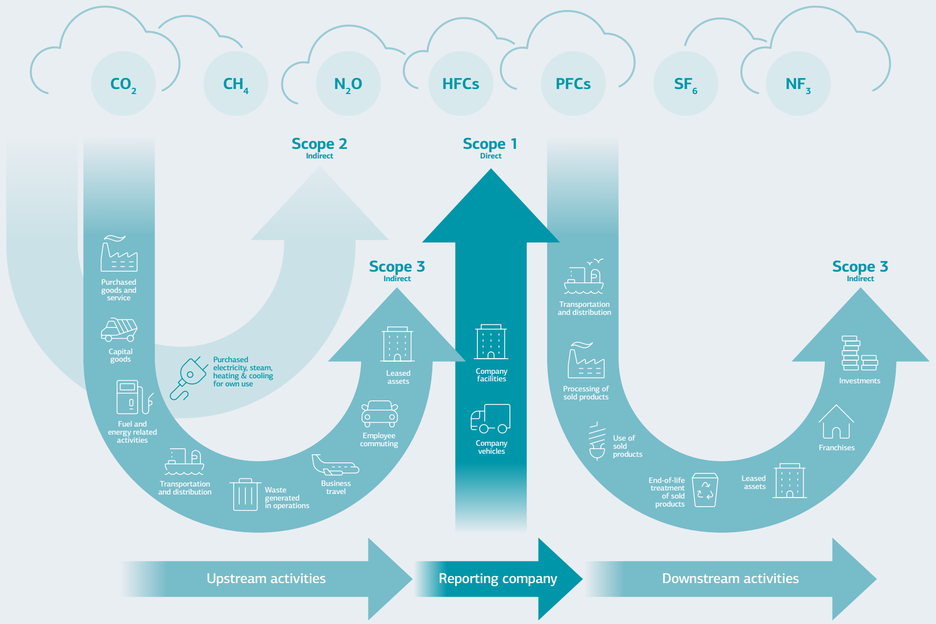
In November 2020, the Global GHG Accounting and Reporting Standard for the Financial Industry was launched by the Partnership for Carbon Accounting Financials (PCAF). It is intended to enable financial undertakings to calculate and assess emissions from their credit and asset portfolios. The PCAF methodology is mostly based on the methodology of Greenhouse Gas (GHG) Protocol and has been approved as such by GHG Protocol. According to the GHG methodology, emissions are defined as direct or indirect and divided into three different scopes according to their source and location in the value chain.

The three scopes are:

Scope 1: Direct GHG emissions that occur from sources owned or controlled by the reporting company, e.g. from vehicles and machines owned by the company.

Scope 2: Indirect emissions from the generation of energy for the operations of the company, such as electricity and other energy used for heating.

Scope 3: All other indirect emissions that occur in the value chain of the reporting company, such as emissions due to waste and purchased services.



Source: WRI and WBCSD

PCAF requires companies to report their emissions for Scope 1 and 2, but only in part for Scope 3. Scope 3 emissions are only required for a part of companies, i.e. companies in the oil, gas and mining sectors, as well as those engaged in transportation, construction, buildings, materials, and industrial activities. Although emissions analysis is currently only required for these particular classes, Landsbankinn will cover Scope 3 emissions for all classes in its reporting. The Bank will therefore report on emissions for all scopes for its customers and other asset classes, as applicable, according to PCAF classification.

PCAF divides the credit and asset portfolios of financial undertakings into seven asset classes:

- Listed equity and corporate bonds
- Business loans and unlisted equity
- Project finance
- Commercial real estate
- Mortgages
- Motor vehicle loans
- Sovereign debt

Although PCAF has been in rapid development in recent years, methods have not yet been developed to calculate emissions for all asset classes, such as green bonds, derivatives, overdrafts and credit cards of individuals. This, along with lack of data for other categories with defined methodologies, results in a portion of the credit portfolio being reported as out of scope in the results of the analysis.

The analysis of the financed emissions is based on the availability of data needed to perform the calculations. The aim is to use data that are as close as possible to actual data, but in other cases estimated emission values must be used. It was not possible to analyse specifically funded emissions for project finance and commercial real estate due to insufficient data, so instead they are included as business loans in the results.

Data collection and accessibility varies and is one of the main challenges in analysing carbon emissions from companies. This challenge is not limited to any one country, and PCAF has issued a rating scale to assess data quality. The rating is determined by how detailed and close to actual figures the data are. The scale ranges from 1 to 5, with 5 representing the least detailed and reliable data. Data quality is defined according to the methodology, source and nature of the data. PCAF also maintains a database of emissions figures by

class, country and sector. However, the database does not contain emissions figures for Iceland.

Efforts are made to use the emission figures issued by companies for their activities and the Bank uses Vera[3] Solutions to source such information. In cases where Scope 3-related emission figures from companies clearly indicate that such emissions were not taken into account in terms of fossil fuel use in Scope 1, the figures are recalculated. In cases where companies' emission figures are not available it is necessary to have access to information on financial indicators of companies to assess the Bank's entire credit portfolio. In such cases, emission figures from the PCAF database[4] and economic variables are used as basis. Annual financial statements play a key role in this, and most companies have now issued their statement for 2023.

Since the publication of the Bank's last report on financed emissions, there has been a methodological change in the emission factors for electricity and hot water provided by the Environment Agency. These changes are discussed in more detail in the section on residential mortgages and the Bank has recalculated financed emissions from residential mortgages back to 2019 (see supporting materials).

The analysis in this report is based on the Bank's balance sheet for 2023.

3 Vera is a sustainability platform from Creditinfo that helps companies communicate information about environmental, social, and governance (ESG) factors in their operations to stakeholders in a standardised manner.
4 Emission factors for Iceland are not included in the PCAF database, so emission factors for Norway were used instead. Norway is similar to Iceland in many respects, including energy production, with geothermal heat and hydropower used in both countries. The emission factors are defined according to income and economic activities.

Listed equity and corporate bonds

Listed equities and corporate bonds

This shows results for the Bank's financed emissions in 2023 for listed equities and bonds according to the balance sheet for the same year. Not included are instruments such as green bonds, municipal bonds, securities for hedging, unit shares and derivatives, as PCAF has not yet developed the methodology to assess emissions from such financial instruments. Sovereign debt is also not included here but is covered in a separate section.

Data on carbon emissions of companies were collected by the following means and in the following order:

a) Via corporate annual or sustainability reports in Vera Sustainability.
   - Data rating: 1 and 2

a) Via the PCAF database, based on income
   - Data rating: 4

a) Via the PCAF database, based on assets
   - Data rating: 5

In using the PCAF database, the company's registered ÍSAT[5] classification according to Landsbankinn was used.

The following formula was used to calculate emissions of listed companies:

$$Financed\ emissions = \sum_{c} \frac{Outstanding\ amount_c}{EVIC_c} \times Company\ emissions_c$$

c = a company in which investments are made

EVIC[6] stands for enterprise value including cash, where cash is not deducted so the total value will not be a negative figure.

The following formula was used to calculate the emissions of unlisted companies with carbon emissions published in their annual financial statement:

$$Financed\ emissions = \sum_{c} \frac{Outstanding\ amount_c}{Total\ equity + debt_c} \times Company\ emissions_c$$

c = a company in which investments are made

5 An Icelandic classification of economic activities based on the EU's NACE classification
6 Enterprise Value Including Cash.

The following formula was used to calculate the emissions of unlisted companies who haven't published their carbon emissions:

$$Financed\ emissions = \sum_{c,n} \frac{Outstanding\ amount_c}{Total\ equity + debt_c} \times Revenue_c \times \frac{GHG\ emissions_n}{Revenue_n}$$

f = a company in which investments are made, n = the appropriate NACE[7] category

The following formula was used to calculate the emissions of unlisted companies who haven't published their carbon emissions and have no or incomplete information on their income in their annual financial statement:

$$Financed\ emissions = \sum_{f,n} Outstanding\ amount_f \times \frac{GHG\ emissions_n}{Assets_n}$$

f = a company in which investments are made, n = the appropriate NACE category

Emission intensity is also recalculated with regard to changes in the value of listed companies from the Bank's base year of 2019. The value of a company is the denominator in the formula, and therefore has an effect according to whether the value decreases or increases. This is done so a more reliable comparison of emission factors between years can be carried out.

The following formula was used to calculate the converted emission factor:

$$Emission\ intensity_{adjusted} = Emission\ intensity_v \times \sum_i \omega_v \times \frac{EVIC_s}{EVIC_v}$$

ω = benchmarks weights, v = base year, s =comparison year

Adjustment factors for listed equities and bonds were as follows:

- Equities: 1.60
- Bonds: 1.46

Listed equities and bonds 2023

	Financed emissions	Book value	Emission intensity	Data quality	Scope 3	Data quality - Scope 3	Adjusted emission intensity	In scope
Year	$ktCO_2e$	ISKm	tCO_2e/ISKm	Weighted average	$ktCO_2e$	Weighted average	tCO_2e/ISKm	Percentage
2023	1.9	10,846	0.18	1.9	2.2	2.0	0.27	63.1%

7 EU classification of economic activities.

Business loans and unlisted equity

Business loans and unlisted equities

This shows results for the Bank's financed emissions in 2023 for business loans and unlisted equities according to the balance sheet. Vehicle and equipment loans are not included but are covered in a separate section. Loans to the State, municipalities and public institutions are not included in this methodology and are deemed to be out of scope.

Data on carbon emissions of companies were collected by the following means and in the following order:

a) Via corporate annual or sustainability reports in Vera Sustainability.
   - Data rating: 1 and 2

b) Via the PCAF database, based on income
   - Data rating: 4

c) Via the PCAF database, based on assets
   - Data rating: 5

In using the PCAF database, the company's registered ÍSAT classification according to Landsbankinn was used.

For financed emissions from business loans, the calculations noted in the previous section on listed equity and corporate bonds are used.

In addition, the emission factor of listed companies was also converted for 2023 using the same methodology applied for listed equity and corporate bonds. This is done so a more reliable comparison of emission factors between years can be carried out. Based on the Bank's base year of 2019.

The adjustment factor for corporate loans was 1.57.

The following formula was used to calculate outstanding amount of unlisted equity:

$$Financed\ emissions = \frac{\#shares\ of\ financial\ instution_f}{\#total\ shares_c} \times Total\ equity_f$$

f = company

If the number of unlisted equities was unknown or there was no information available regarding equity, the result was deemed to be out of scope.

2023	Financed emissions	Book value	Emission intensity	Data quality	Scope 3	Data quality - Scope 3	Adjusted emission intensity
Sector	**ktCO$_2$e**	**ISKm**	**tCO$_2$e/ISKm**	**Weighted average**	**ktCO$_2$e**	**Weighted average**	**tCO$_2$e/ISKm**
Construction	11.5	129,071	0.09	4.1	93.6	4.3	0.09
Holding companies	0.4	27,674	0.01	4.3	0.8	4.3	0.01
Real estate companies	4.3	176,236	0.02	3.8	16.1	3.8	0.02
Travel sector	33.8	82,189	0.41	3.8	62.0	3.8	0.61
Industrial and power companies	13.6	31,459	0.43	3.7	61.4	3.7	0.43
Agriculture	26.2	6,910	3.79	4.1	27.0	4.1	3.79
Public entities	0.1	372	0.29	5.0	0.5	5.0	0.29
Fisheries and seafood	33.2	190,118	0.17	3.5	219.2	3.5	0.17
Trade	6.3	58,586	0.11	2.5	252.0	2.6	0.11
Services, IT and communications	40.2	57,963	0.69	3.7	41.6	3.7	0.82
Total	**169.6**	**760,577**	**0.22**	**3.7**	**774.3**	**3.7**	**0.25**

2023	Financed emissions	Book value	Emission intensity	Data quality	Scope 3	Data quality - Scope 3	Adjusted emission intensity	In scope
Type	**ktCO$_2$e**	**ISKm**	**tCO$_2$e/ISKm**	**Weighted average**	**ktCO$_2$e**	**Weighted average**	**tCO$_2$e/ISKm**	**Percentage**
Unlisted equity - 2023	0.1	9,165	0.01	4.1	0.2	4.1	0.01	95.4%

Mortgages

Mortgages

This shows results for the Bank's financed emissions in 2023 for mortgages to retail customers according to the balance sheet for the year.

The following formula was used to calculate emissions from mortgages:

$$Financed\ emissions = \sum_{b,p} \frac{Outstanding\ amount_b}{Property\ value_b} \times Estimated\ energy\ consumption_b \times GHG\ emission\ factor_p$$

b = building, p = postal code

An emission factor for Scope 1[8] and 2 for each postal code in the country was calculated according to the proportional division between energy sources within each postal code. The division was based on the Property Register and data from the National Energy Authority.

There are only a few houses in Iceland that only use fossil fuel for heating and/or electricity produced by such means. All other residential buildings in the country utilise renewable energy for general use. Other sources of energy that are used for domestic heating are electricity, geothermal energy and district heating.[9] There are a few houses where wooden pellets are used for heating, but this is an unknown quantity and therefore not included here.

Calculations of financed emissions from electricity use were based on the emission factor for electricity provided by the *Environment Agency*.

Geothermal energy can be divided into two categories: Hot water from low-temperature geothermal areas and hot water from geothermal power plants (high-temperature areas). Emissions from space heating using hot water from low-temperature geothermal areas, where traditional district heating systems operate, were considered negligible, as referenced in *this report*. In regions where hot water is sourced from both geothermal power plants and low-temperature areas, the emission factor from *Veitur* was used. This factor reflects the average emissions from low-temperature areas and geothermal power plants in their operations. The emission factor for district heating was calculated according to annual financial statements and data from the companies in question.

To assess the energy consumption of the respective property, the Bank's methodology for estimating energy consumption in residential properties was used, as outlined in a dedicated *report* published by the Bank.

When analysing Scope 3 carbon emissions, emissions from the transport and distribution of the energy in question were considered. Distribution and transmission losses of geothermal energy and electricity were based on a report and information from the National Energy Authority. The emission factor for transport and production of fossil fuels was according to data from *DEFRA*[10]. The emissions were calculated using similar methodology as used for Scope 1 and 2.

8 Emissions from fossil fuels are included here if there is only oil heating.
9 District heat is generated by a central source where electricity and, as the case may be, fossil fuel is used to heat water that is then distributed for domestic heating.
10 Department for Environment, Food and Rural Affairs

According to *data* from the National Energy Authority, over 91% of Icelandic residential housing was heated with geothermal energy, 6% with electricity, 2.5% with district heating and 0.2% with fossil fuel in 2020. This same data assumes that in 2030, the ratios will be that 93.3% of residential housing is heated with geothermal energy, 5.0% with electricity, 1.7% with district heating and none with fossil fuel.

Emissions from housing construction were not calculated as this could result in double counting of emissions. This is related to the fact that these emissions have usually gone through loans that the construction companies have taken out for the construction.

If a mortgage could not be linked to registered housing in the Property Register, e.g. due to incorrect registration or lack of information, the loan in question was assessed as out of scope. Mortgages were also deemed to be out of scope if the housing in question was not considered fully complete in the property register (assessment level 6, 7 or 8 or construction phase B4).

All mortgages are classified as having a data rating of 4.

2023	Financed emissions	Book value	Emission intensity	Data quality	Scope 3	Data quality - Scope 3
Type of housing	**$ktCO_2e$**	**ISKm**	**tCO_2e/ISKm**	**Weighted average**	**$ktCO_2e$**	**Weighted average**
Single-family home	0.81	189,181	0.004	4.0	0.12	4.0
Multi-family building	0.61	374,292	0.002	4.0	0.08	4.0
Semi-detached/row house	0.23	114,089	0.002	4.0	0.03	4.0
Total	**1.66**	**677,562**	**0.002**	**4.0**	**0.23**	**4.0**

2023	Financed emissions	Book value	Emission intensity	Data quality	Scope 3	Data quality - Scope 3
Region	**$ktCO_2e$**	**ISKm**	**tCO_2e/ISKm**	**Weighted average**	**$ktCO_2e$**	**Weighted average**
East Iceland	0.08	17,728	0.004	4.0	0.01	4.0
Capital region	0.65	444,232	0.001	4.0	0.07	4.0
Northeast Iceland	0.04	46,693	0.001	4.0	0.00	4.0
Northwest Iceland	0.01	10,836	0.001	4.0	0.00	4.0
South Iceland	0.50	49,539	0.010	4.0	0.11	4.0
Suðurnes peninsula	0.19	68,032	0.003	4.0	0.02	4.0
West Fjords	0.12	9,246	0.013	4.0	0.02	4.0
West Iceland	0.06	31,255	0.002	4.0	0.00	4.0
Total	**1.66**	**677,562**	**0.002**	**4.0**	**0.23**	**4.0**

Motor vehicle loans

Motor vehicle loans

This shows results for the Bank's financed emissions in 2023 for Motor vehicle loans[11] to retail customers according to the balance sheet for the year. This also includes other loans secured with a mortgage in a car or another vehicle or self-propelling machinery.

To calculate the emissions from Motor vehicle loans, the following formula was generally used for road vehicles:

$$Financed\ emissions = \sum_{t} \frac{Outstanding\ amount_t}{Property\ value_t} \times Average\ distance\ traveled_t \times Emission\ factor_t$$

t = vehicle

The following formula was used to calculate emissions from off-road vehicles:

$$Financed\ emissions = \sum_{t,m} \frac{Outstanding\ amount_t}{Porperty\ value_t} \times Average\ emission\ factor_m$$

t = vehicle, m = total average emission

Data on carbon emissions of vehicles were collected by the following means and in the following order:

a) The Icelandic Transport Authority's vehicle registry
   - Data rating: 2

b) The highest carbon emission of the same type of vehicle and fuels from known values in the database[12]
   - Data rating: 4

c) From DEFRA emission factors (recorded as WLTP[13] emission values)
   - Data rating: 5

d) (For vehicles other than standard road vehicles). Average data on the number of heavy machineries from the Occupational Safety and Health Administration and the amount of oil sold to the relevant classes of machinery.
   - Data rating: 5

11 Motor vehicle loans cover all heavy machinery and off-road equipment, such as tractors and excavators.
12 All 0 values excluded for types of vehicles other than those powered only by electricity.
13 Worldwide Harmonized Light-Duty Test Procedure. The new EU pollution scale for fuel use and vehicle emissions.

Driving data were collected by the following means and in the following order:

a) Average vehicle mileage according to the Icelandic Transport Authority (not motorcycles).
   - Data rating: 2

b) The vehicle database *Trafikanalys* in Sweden for motorcycles.
   - Data rating: 5

Each vehicle's data rating was determined based on which was higher, the data rating for the emission factor or driving data.

Other criteria for calculating carbon emissions from vehicle and equipment loans:

- Rental cars were determined to drive *four times* more than similar privately-owned vehicles.
- There are two procedures to assess emission values of vehicles, NEDC[14] and WLTP. WLTP is newer and will eventually replace NEDC altogether. The analysis was based on the WLTP values of vehicles, while for vehicles that only had a NEDC value, the value was converted to WLTP according to defined *factors* based on the type of vehicle.
- Charging arrangement for electric cars is based on the *report* from Samorka.

All vehicles that in any way use fossil fuels and methane are covered by Scope 1 and therefore only pure electric vehicles are covered by Scope 2. Scope 3 emissions are not calculated here as data and information is lacking.

2023	Financed emissions	Book value	Emission intensity	Data quality
Type	**$ktCO_2e$**	**ISKm**	**tCO_2e/ISKm**	**Weighted average**
Hybrid vehicles	9.4	13,568	0.69	2.0
Fossil fuel only	34.1	30,140	1.13	2.6
Green vehicles	0.0	11,849	0.00	2.0
Total	**43.5**	**55,557**	**0.78**	**2.3**

14 New European Driving Cycle.

Sovereign debt

Sovereign debt

This shows results for the Bank's financed emissions in 2023 for listed sovereign bonds according to the balance sheet for the year.

$$Financed\ emissions = \sum_{l} \frac{Outstanding\ amount_{l}}{PPP^{15} adjusted\ GDP^{16}_{l}} \times Unverified\ country\ emission_{l}^{17}$$

l = country in question

The calculation method for sovereign bonds is basically the same as for listed equities and corporate bonds except that instead of using the total value of the company in question, or country in this instance, the country's economy is used. The economies of the countries of the world are different and can depend on both the size of the countries and their economic status. For instance, Iceland's economy is small in a global sense but is nevertheless considered among the most developed in the world. For a real comparison between countries in calculating financed emissions, purchasing power parity adjusted for GDP is used.

Data from the *World Bank's* database was used to gather information on purchasing power parity adjusted for GDP for the countries in question. To carry out the calculations, outstanding amounts had to be converted to US dollars.

The carbon accounting of countries can differ for a variety of reasons so it may be difficult to make an analysis using similarly recorded data. The *United Nations Climate Change* database has information on the carbon emissions of the relevant countries pursuant to the requirements of the UN Framework Convention on Climate Change.[18] However, there is a delay in the availability of these data, as information on the carbon emissions of countries is usually published two years after the fact. Data on the carbon emissions of the relevant countries for 2022 are used, or later preliminary figures, as this is the most recent available data information.

The results show financed emissions from sovereign debt according to emission figures for the relevant countries, with and without LULUCF.

15 PPP stands for purchase power parity.
16 GDP stands for gross domestic product.
17 PPP-adjusted GDP is the value of a country's output as a proxy for the 'value of the country' adjusted by the PPP factor. The figure is GDP converted into international dollars using the PPP factor. The international dollar has the same purchasing power over GDP as the USD has in the US.
18 United Nations Framework Convention on Climate Change, UNFCCC.

All sovereign bonds using carbon emission statistics for the year corresponding to reports on the United Nations Climate Change website are classified as having the data rating 1. If the statistics from the database that are used are older than the calculation year or newer preliminary figures, the conclusions are classified as having the data rating 2. Here, carbon emissions from sovereign bonds are included in Scope 1.

	Financed emissions			Emission factor		
2023	**Excluding LULUCF**	**Including LULUCF**	**Book value**	**Excluding LULUCF**	**Including LULUCF**	**Data quality**
Type	$ktCO_2e$	$ktCO_2e$	ISKm	tCO_2e/ISKm	tCO_2e/ISKm	Weighted average
Sovereign debt	**131.6**	**244.3**	**135,384**	**0.97**	**1.80**	**2.0**

Supporting material

Breakdown for 2023 according to NACE

2023		Financed emissions	Book value	Emission intensity	Data quality	Scope 3	Data quality - Scope 3	Adjusted emission intensity	In scope
NACE		$ktCO_2e$	ISKm	tCO_2e/ISKm	Weighted average	$ktCO_2e$	Weighted average	tCO_2e/ISKm	Percentage
A	Agriculture, forestry and fisheries	45.4	98,410	0.46	3.6	84.5	3.6	0.46	100.0%
B	Mining and quarrying and mineral extraction	2.5	646	3.91	4.0	1.0	4.0	3.91	100.0%
C	Production	24.5	123,204	0.20	3.5	217.7	3.5	0.20	99.6%
D	Electric, gas and heating utilities	1.1	7,232	0.15	2.8	4.5	2.8	0.15	100.0%
E	Water supply, sewers, waste treatment and decontamination	3.1	3,181	0.96	3.9	3.3	4.0	0.96	99.4%
F	Construction and infrastructure	12.7	132,119	0.10	4.1	93.6	4.3	0.10	100.0%
G	Wholesale and retail trade, motor vehicle repair	7.5	63,727	0.12	2.6	252.0	2.6	0.12	99.3%
H	Transportation and storage	67.2	28,597	2.35	2.9	26.7	3.0	3.17	100.0%
I	Accommodation and food service activities	2.4	45,890	0.05	4.0	17.6	4.0	0.05	100.0%
J	IT & telecommunication	0.7	16,890	0.04	3.1	5.5	3.1	0.04	100.0%
K	Financial and insurance activities	0.4	28,332	0.01	4.3	0.8	4.3	0.01	99.9%
L	Real estate transactions	4.4	177,858	0.02	3.8	16.4	3.8	0.03	100.0%
M	Professional, scientific and technical activities	1.1	4,773	0.23	3.9	2.2	4.0	0.23	99.9%
N	Leasing activities and various specialised services	31.8	50,934	0.62	3.1	32.3	4.0	0.62	99.8%
O	Public administration and defence; social security	0.0	97	0.18	4.5	0.0	5.0	0.18	0.9%
P	Educational work	0.2	1,251	0.12	4.3	0.5	4.3	0.12	99.0%
Q	Health care and social services	0.3	5,327	0.06	4.1	4.6	4.2	0.06	98.9%
R	Cultural, sports and recreational activities	0.3	5,034	0.07	4.4	4.0	4.5	0.07	99.9%
S	Non-governmental organisations and other service activities	1.6	5,939	0.27	4.6	6.9	4.6	0.27	99.8%
T	Activities of households as employers, provision of services and manufacturing for own use	0.0	4	0.60	2.0	0.0	4.0	0.60	100.0%
	Total - Corporate	**207.3**	**799,444**	**0.26**	**3.6**	**774.3**	**3.7**	**0.29**	**98.5%**
	Individuals	7.4	694,252	0.01	4.0	0.2	4.0	0.01	84.8%
	Total - All	**214.7**	**1,493,696**	**0.14**	**3.8**	**774.5**	**3.8**	**0.16**	**91.6%**

2023	Financed emissions	Book value	Emission intensity	Data quality	Scope 3	Data quality - Scope 3	Adjusted emission intensity	In scope
Sector	**ktCO$_2$e**	**ISKm**	**tCO$_2$e/ISKm**	**Weighted average**	**ktCO$_2$e**	**Weighted average**	**tCO$_2$e/ISKm**	**Percentage**
Construction	12.7	132,119	0.10	4.1	93.6	4.3	0.10	100.0%
Holding companies	0.4	27,708	0.01	4.3	0.8	4.3	0.01	99.9%
Real estate companies	4.3	176,367	0.02	3.8	16.1	3.8	0.02	100.0%
Tourism	66.1	107,662	0.61	3.4	62.0	3.8	0.76	100.0%
Industrial and power companies	13.9	32,052	0.43	3.7	61.3	3.7	0.43	98.5%
Agriculture	26.3	7,210	3.65	4.1	27.0	4.1	3.65	100.0%
Public entities	0.1	376	0.29	5.0	0.5	5.0	0.29	3.3%
Opinberir aðilar	0,1	329	0,19	4,6	0,30	4,6	0,19	3,1%
Fisheries and seafood	33.3	190,229	0.17	3.5	219.2	3.5	0.17	100.0%
Trade	7.5	63,727	0.12	2.6	252.0	2.6	0.12	99.3%
Services, IT and communications	42.6	61,994	0.69	3.7	41.6	3.7	0.81	99.8%
Total - Corporate	**207.3**	**799,444**	**0.26**	**3.6**	**774.3**	**3.7**	**0.29**	**98.5%**
Individuals	7.4	694,252	0.01	4.0	0.2	4.0	0.01	84.8%
Total - All	**214.7**	**1,493,696**	**0.14**	**3.8**	**774.5**	**3.8**	**0.16**	**91.6%**

Summary of emission-intensive sectors

This summary provides an overview of industries generally considered to be emission-intensive in the international community. The summary includes both equities and securities (excluding sovereign bonds) as well as all loans to customers other than individuals.

Loans - 2023	Financed emissions	Book value	Emission intensity	Data quality	Scope 3	Data quality - Scope 3	Adjusted emission intensity	In scope
Emission-intensive sector	**$ktCO_2e$**	**ISKm**	**tCO_2e/ISKm**	**Weighted average**	**$ktCO_2e$**	**Weighted average**	**tCO_2e/ISKm**	**Percentage**
Automotive	0.0	13	0.06	5.0	0.0	5.0	0.06	100.0%
Aviation	29.8	11,427	2.61	2.4	10.8	2.4	4.01	100.0%
Cement, clinker and lime production	3.2	447	7.25	3.7	1.5	4.1	7.25	100.0%
Fossil fuel combustion	0.6	3,271	0.17	1.2	128.9	1.2	0.17	100.0%
Iron and steel, coke, and metal ore production	0.3	154	2.08	3.9	0.7	4.0	2.08	100.0%
Maritime transport	33.7	10,099	3.33	3.2	11.2	3.2	4.07	100.0%
Power	0.4	6,783	0.06	3.1	5.2	3.1	0.06	99.9%
Total	**68.0**	**32,194**	**2.11**	**2.7**	**158.3**	**2.7**	**2.84**	**100.0%**
Other	**139.3**	**767,250**	**0.18**	**3.7**	**615.9**	**3.8**	**0.18**	**98.4%**

Equities and bonds - 2023	Financed emissions	Book value	Emission intensity	Data quality	Scope 3	Data quality - Scope 3	Adjusted emission intensity	In scope
Emission-intensive sector	**$ktCO_2e$**	**ISKm**	**tCO_2e/ISKm**	**Weighted average**	**$ktCO_2e$**	**Weighted average**	**tCO_2e/ISKm**	**Percentage**
Aviation	1.6	327	5.02	2.0	0.3	2.0	8.02	100.0%
Maritime transport	0.1	56	2.30	2.0	0.0	2.0	2.30	100.0%
Total	**1.8**	**383**	**4.63**	**2.0**	**0.3**	**2.0**	**7.19**	**100.0%**
Other	**0.2**	**19,628**	**0.01**	**1.9**	**2.1**	**2.0**	**0.02**	**74.3%**

Recalculation of residential mortgages for 2019- 2022

These are the results of the recalculations of the estimated carbon emissions from the Bank's residential mortgages in 2019-2022.

Breakdown of mortgages in 2019-2022

2022	Financed emissions	Book value	Emission intensity	Data quality	Scope 3	Data quality - Scope 3
Type of housing	**$ktCO_2e$**	**ISKm**	**tCO_2e/ISKm**	**Weighted average**	**$ktCO_2e$**	**Weighted average**
Single-family home	1.12	210,446	0.005	4	0.17	4
Multi-family building	0.75	361,373	0.002	4	0.10	4
Semi-detached/row house	0.20	78,754	0.003	4	0.02	4
Total	**2.07**	**650,572**	**0.003**	**4**	**0.29**	**4**

	Financed emissions	Book value	Emission intensity	Data quality	Scope 3	Data quality - Scope 3
Region	**$ktCO_2e$**	**ISKm**	**tCO_2e/ISKm**	**Weighted average**	**$ktCO_2e$**	**Weighted average**
East Iceland	0.10	16,467	0.006	4	0.01	4
Capital region	0.83	432,664	0.002	4	0.08	4
Northeast Iceland	0.05	43,590	0.001	4	0.00	4
Northwest Iceland	0.01	9,441	0.001	4	0.00	4
South Iceland	0.29	46,152	0.006	4	0.06	4
Suðurnes peninsula	0.24	64,332	0.004	4	0.02	4
West Fjords	0.47	8,371	0.057	4	0.11	4
West Iceland	0.07	29,555	0.002	4	0.00	4
Total	**2.07**	**650,572**	**0.003**	**4**	**0.29**	**4**

2021	Financed emissions	Book value	Emission intensity	Data quality	Scope 3	Data quality - Scope 3
Type of housing	**$ktCO_2e$**	**ISKm**	**tCO_2e/ISKm**	**Weighted average**	**$ktCO_2e$**	**Weighted average**
Single-family home	0.63	180380	0.003	4	0.07	4
Multi-family building	0.57	330,367	0.002	4	0.06	4
Semi-detached/row house	0.20	87,401	0.002	4	0.02	4
Total	**1.40**	**598,148**	**0.002**	**4**	**0.15**	**4**

	Financed emissions	Book value	Emission intensity	Data quality	Scope 3	Data quality - Scope 3
Region	**$ktCO_2e$**	**ISKm**	**tCO_2e/ISKm**	**Weighted average**	**$ktCO_2e$**	**Weighted average**
East Iceland	0.08	14,717	0.005	4	0.01	4
Capital region	0.77	405,659	0.002	4	0.08	4
Northeast Iceland	0.04	39,224	0.001	4	0.00	4
Northwest Iceland	0.01	7,906	0.001	4	0.00	4
South Iceland	0.11	40,902	0.003	4	0.02	4
Suðurnes peninsula	0.21	55,758	0.004	4	0.02	4
West Fjords	0.12	7,378	0.016	4	0.02	4
West Iceland	0.06	26,604	0.002	4	0.00	4
Total	**1.40**	**598,148**	**0.002**	**4**	**0.15**	**4**

2020	Financed emissions	Book value	Emission intensity	Data quality	Scope 3	Data quality - Scope 3
Type of housing	**ktCO$_2$e**	**ISKm**	**tCO$_2$e/ISKm**	**Weighted average**	**ktCO$_2$e**	**Weighted average**
Single-family home	0.53	141719	0.004	4	0.06	4
Multi-family building	0.47	258,464	0.002	4	0.05	4
Semi-detached/row house	0.18	76,769	0.002	4	0.02	4
Total	**1.18**	**476,952**	**0.002**	**4**	**0.13**	**4**

	Financed emissions	Book value	Emission intensity	Data quality	Scope 3	Data quality - Scope 3
Region	**ktCO$_2$e**	**ISKm**	**tCO$_2$e/ISKm**	**Weighted average**	**ktCO$_2$e**	**Weighted average**
East Iceland	0.06	12,565	0.005	4	0.01	4
Capital region	0.65	322,849	0.002	4	0.07	4
Northeast Iceland	0.03	31,626	0.001	4	0.00	4
Northwest Iceland	0.01	6,108	0.001	4	0.00	4
South Iceland	0.09	30,819	0.003	4	0.01	4
Suðurnes peninsula	0.17	45,178	0.004	4	0.02	4
West Fjords	0.12	6,105	0.020	4	0.02	4
West Iceland	0.05	21,701	0.002	4	0.00	4
Total	**1.18**	**476,952**	**0.002**	**4**	**0.13**	**4**

2019	Financed emissions	Book value	Emission intensity	Data quality	Scope 3	Data quality - Scope 3
Type of housing	**$ktCO_2e$**	**ISKm**	**tCO_2e/ISKm**	**Weighted average**	**$ktCO_2e$**	**Weighted average**
Single-family home	0.46	108,827	0.004	4	0.05	4
Multi-family building	0.39	198,371	0.002	4	0.04	4
Semi-detached/row house	0.14	52,617	0.003	4	0.01	4
Total	**0.99**	**359,815**	**0.003**	**4**	**0.11**	**4**

	Financed emissions	Book value	Emission intensity	Data quality	Scope 3	Data quality - Scope 3
Region	**$ktCO_2e$**	**ISKm**	**tCO_2e/ISKm**	**Weighted average**	**$ktCO_2e$**	**Weighted average**
East Iceland	0.06	10,143	0.006	4	0.01	4
Capital region	0.52	242,214	0.002	4	0.05	4
Northeast Iceland	0.03	24,900	0.001	4	0.00	4
Northwest Iceland	0.01	4,698	0.001	4	0.00	4
South Iceland	0.08	23,993	0.003	4	0.01	4
Suðurnes peninsula	0.14	33,319	0.004	4	0.01	4
West Fjords	0.11	4,759	0.024	4	0.02	4
West Iceland	0.04	15,790	0.003	4	0.00	4
Total	**0.99**	**359,815**	**0.003**	**4**	**0.11**	**4**