

June 2024

Kvika's financed emissions

Estimated financed greenhouse gas emissions for 2021 and 2022 according to the PCAF standard



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CEO's address

Kvika has worked ambitiously towards the continued implementation of our sustainability policy, which was approved in 2022 and developed with the participation of employees across divisions and subsidiaries. As before, our goal is for sustainability to be part of our core operations and decision-making, in accordance with one of Kvika's guiding principles of being a responsible participant in society.

Several exciting projects are in the works, with the aim of further promoting sustainability in Kvika's operations. In many areas, work has been done on product development with climate issues in mind, but a race has begun to achieve the goals set by the Paris Agreement on reducing emissions. It is clear that these goals cannot be achieved without the cooperation of investors and the business community.

Kvika has recently published an updated Green Funding Framework that frames the bank's policy on green financing and lending, enabling the bank to issue green bonds and finance green projects. The framework takes into consideration the EU Taxonomy Regulation, which defines environmentally sustainable economic activities according to a technical criteria. It is important that companies come up with green solutions through financing or investment that supports Iceland's journey towards carbon neutrality, and financial institutions such as Kvika will play a key role in this.

One part of the Group's sustainability journey has been to gather knowledge and information on emissions resulting from our operations, and we have, for some time, published information on the carbon footprint of our own operations in Kvika's sustainability report. When implementing our sustainability policy, we decided to become a member of the Partnership for Carbon Accounting Financials (PCAF), an international partnership of financial institutions that work together to develop and implement a coordinated approach to assessing and disclosing greenhouse gas emissions that they finance through loans and investments.

Financed emissions account for a large part of financial institutions' environmental impacts, and the analysis is therefore an important step for us to understand and manage the Group's indirect emissions from loans and investments. We have, for the second time, calculated estimated financed greenhouse gas emissions using the PCAF methodology and now for the first time we are publishing a report with the results, which covers Kvika's balance sheet for the years 2021 and 2022. This milestone marks an important step in our journey towards increased transparency and accountability of the environmental impact of our operations.

Reykjavík, 25 June 2024



Ármann Þorvaldsson

CEO of Kvika bank



Financed greenhouse gas emissions

Kvika banki hf. (hereinafter, “Kvika bank”, or “the bank”) has been a member of the Partnership for Carbon Accounting Financials (PCAF) since 2022. PCAF is a global partnership of financial institutions that work together to develop and implement a harmonized approach to assess and disclose the greenhouse gas emissions (GHG) associated with their loans and investments. These are often referred to as financed emissions.

Financed emissions comprise a large share of financial institutions' total environmental and climate impacts, as investment and lending activities often extend far beyond their own operations and affect various sectors through corporate and project financing. Kvika has for some time calculated and published information on the carbon footprint of its own operations, but this analysis of financed emissions is an important part of covering the Group's indirect emissions, which are in the form of loans and investments and fall into scope 3¹.

This is the second time financed emissions are assessed using the PCAF Standard for a part of Kvika Group (hereinafter, “Kvika”, or “the Group”) and published in this report. The calculations cover Kvika's balance sheet for the years 2021 and 2022.



¹ Scope 3 covers all indirect emissions and is defined as emissions from the company's value chain.



Main results

The results of this report are based on the assessment of emissions for Kvika's balance sheets for the years 2021 and 2022. Financed emissions are comprised of emissions resulting from loans, and emissions resulting from investments.

The calculations cover the following asset classes:

- Listed equity and corporate bonds
- Business loans and unlisted equity
- Mortgages
- Motor vehicle loans
- Sovereign debt²

The total estimated emissions from loans were 18.80 ktCO₂e³ in 2021, and 28.43 ktCO₂e in 2022. The estimated total emissions from investments, excluding LULUCF, for the year 2021 were 43.35 ktCO₂e and 68.98 ktCO₂e for the year 2022. The total estimated financed emissions from investments, including LULUCF, for the year 2021 were 121.44 ktCO₂e and 191.20 ktCO₂e for the year 2022.

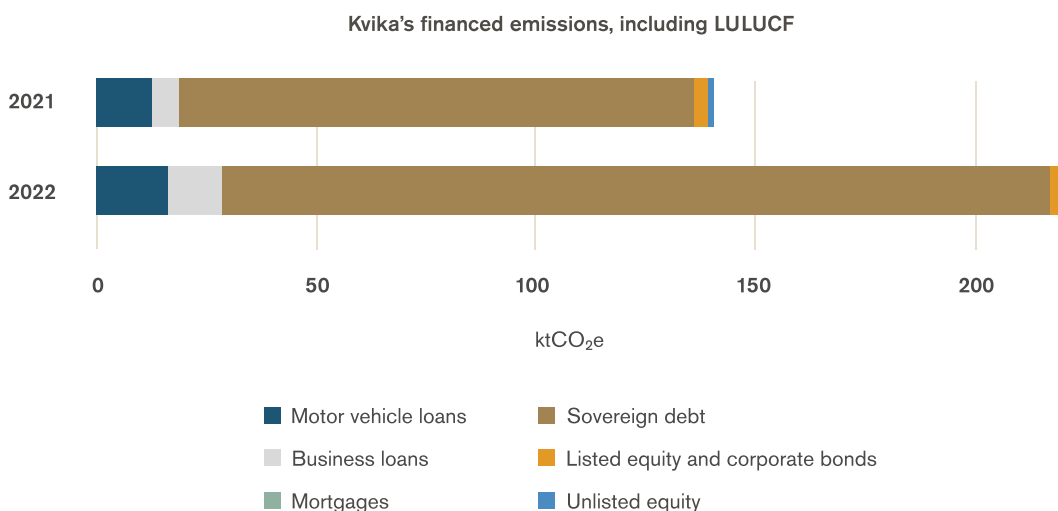
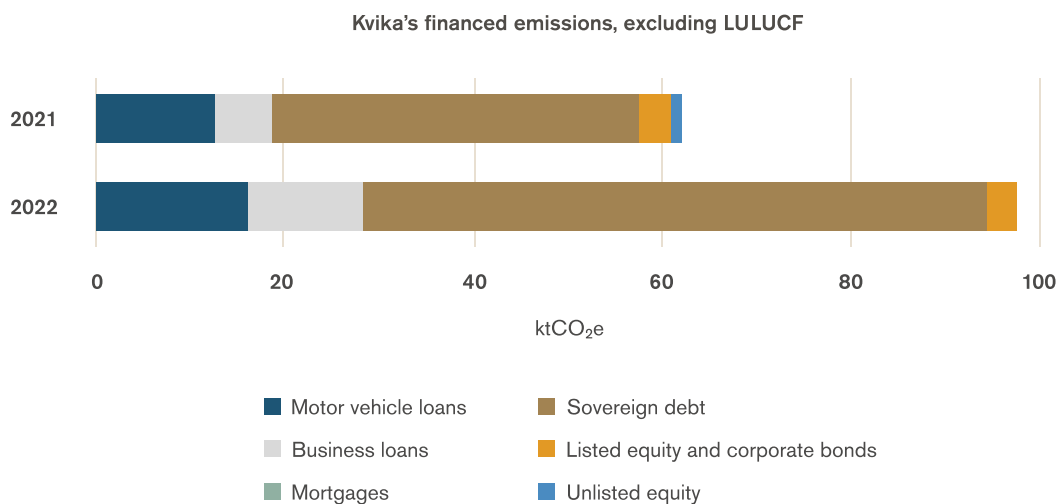
There were some limitations to data availability when calculating estimated emissions for 2022, but some of the calculations for 2021 were carried out in collaboration with Creditinfo, which is explained by higher data quality and a higher proportion of assets that fall within the scope of the results for that year.

The calculations and results for 2021 originally included financed emissions for a limited set of assets on Kvika's balance sheet, but to make the results comparable with 2022, financed emissions for 2021 have been recalculated and the results now cover Kvika's balance sheet as a whole.



² Sovereign debt emissions are calculated based on the total emissions of the economy. Historically, Land Use, Land-Use Change, and Forestry (LULUCF) has been the largest source of Iceland's emissions and as a result, LULUCF is a large part of Kvika's financed emissions through the Group's sovereign debt holdings. Financed emissions were analyzed with and without LULUCF in the results of this report.

³ ktCO₂e = thousand tonnes CO₂ equivalents. One tonne of CO₂ equivalents is equivalent to one tonne of CO₂ emissions. Calculations are based on other greenhouse gas' global warming potential.



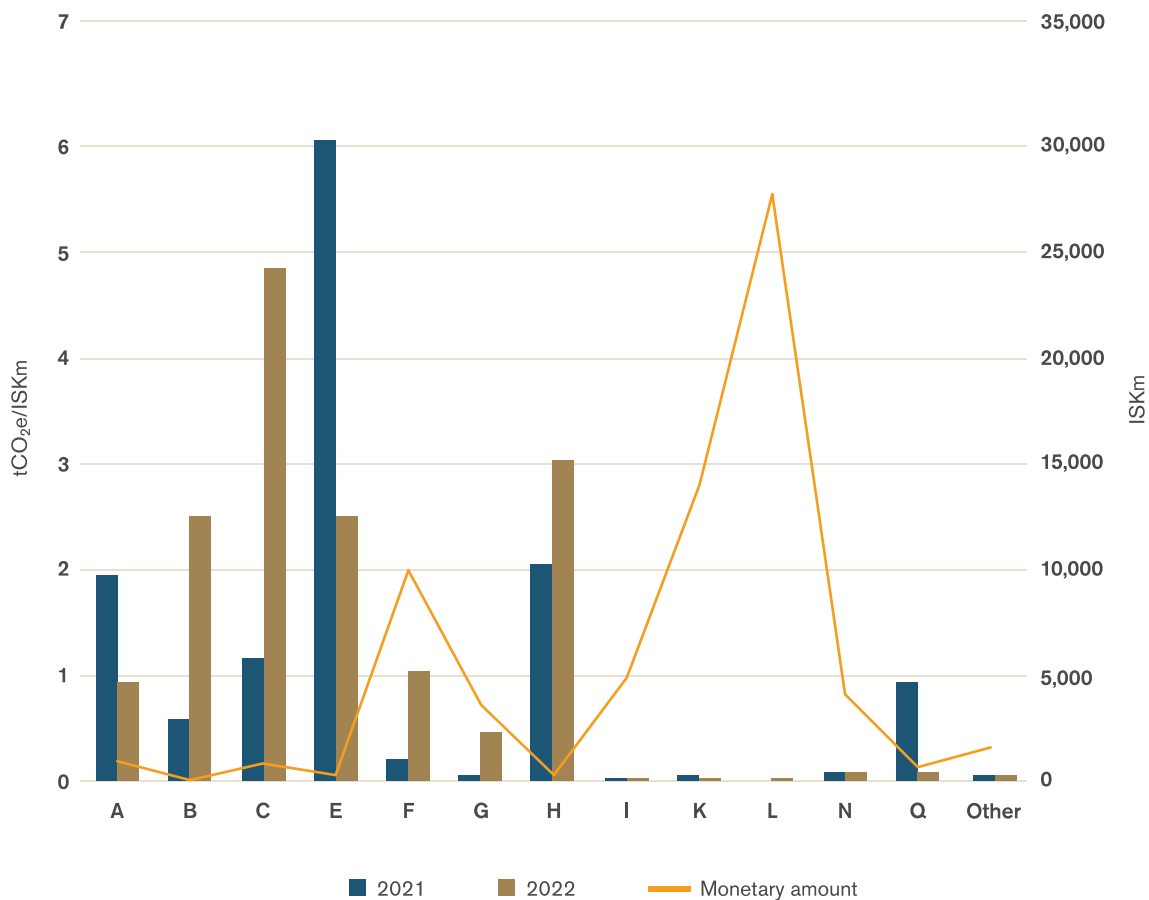
Financed emissions from Kvika's loan portfolio

In 2021, the greatest share of financed emissions from loans were from motor vehicle loans, followed by business loans and mortgages. The results are similar when considering the economic emission intensity ($\text{tCO}_2\text{e/ISKm}$) of loans, which indicates the amount of emissions generated per million ISK loaned. The economic emission intensity of motor vehicle loans was $0.42 \text{ tCO}_2\text{e/ISKm}$, while the economic emission intensity was $0.23 \text{ tCO}_2\text{e/ISKm}$ for business loans and $0.002 \text{ tCO}_2\text{e/ISKm}$ for mortgages. Mortgages emit the least in comparison to the Group's other loans.

The results for the loan portfolio in 2022 are similar to the results in 2021. The economic emission intensity of motor vehicle loans was $0.49 \text{ tCO}_2\text{e/ISKm}$, the economic emission intensity of business loans was $0.25 \text{ tCO}_2\text{e/ISKm}$ and the economic emission intensity of mortgages remained $0.002 \text{ tCO}_2\text{e/ISKm}$. The economic emission intensity of motor vehicle loans increased compared to the previous year because the Icelandic Transport Authority estimated a higher average distance travelled per vehicle.



Business loans: Economic emission intensity and monetary amount



Selected ÍSAT ⁴ categories (icelandic classification of economic activities)	
A	Agriculture, forestry and fishing
B	Mining and quarrying
C	Manufacturing
E	Water supply, sewerage, waste management and remediation activities
F	Construction
G	Wholesale and retail trade, repair of motor vehicles and motorcycles
H	Transporting and storage
I	Accommodation and food service activities
K	Financial and insurance activities
L	Real estate activities
N	Administrative and support service activities
Q	Human health and social work activities

⁴ ÍSAT – Icelandic Classification of Economic Activities (ÍSAT2008) is based on the Classification of economic activities of the European Union (NACE). "NACE" comes from the French name "Nomenclature générale des Activités économiques dans". NACE is the EU's classification of economic activities, but NACE Rev 2 forms the basis of ÍSAT2008.



In 2021, the highest emissions and emission intensity from corporate loans were within ÍSAT block E - water supply, sewerage, waste management and remediation activities for every million loaned, or 6.03 tCO₂e/ISKm. This was followed by block H - transporting and storage (2.06 tCO₂e/ISKm) and A - agriculture, forestry and fishing (1.87 tCO₂e/ISKm).

The most emission-intensive categories within the ÍSAT blocks in 2022 were C – manufacturing (4.75 tCO₂e/ISKm), H - transporting and storage (3.02 tCO₂e/ISKm), B - mining and quarrying (2.49 tCO₂e/ISKm) and E - water supply, sewerage, waste management and remediation activities (2.47 tCO₂e/ISKm).

The categories of business loans that emitted the most in 2022 were F - construction (5.45 ktCO₂e), C - manufacturing (2.93 ktCO₂e) and H - transporting and storage (1.21 ktCO₂e). The largest lending was to L - real estate activities, but as this sector has a low economic emission intensity the total emissions for that category were very low.

The calculations for 2021 were made in collaboration with Creditinfo. Therefore, any changes in economic emission intensity between years are largely explained by different sources of data when calculating estimated emissions from companies.

The economic emission intensity of consumer loans in 2021 was 0.38 tCO₂e/ISKm but within that category are motor vehicle loans and mortgages. Most of the emissions from this category were from motor vehicle loans, but the emissions from the category were 9.01 ktCO₂e. The results are similar for 2022, when the economic emission intensity of consumer loans was 0.36 tCO₂e/ISKm and the largest part of the financed emissions of consumer loans were again from motor vehicle loans, but the emissions for consumer loans amounted to 10.44 ktCO₂e.

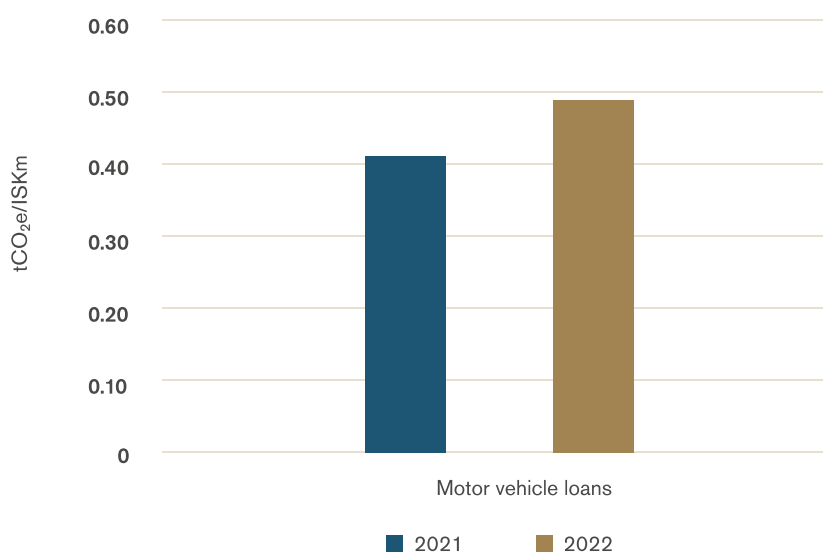




Emissions from mortgages decreased year-on-year, as the monetary amount for mortgages decreased while property values rose. Therefore, the mortgage will always be a smaller percentage of the value of the property.

Although the proportion of electric and hybrid cars has increased year-on-year, the economic emission intensity of car loans increased as the Icelandic Transport Authority's⁵ estimated average mileage increased somewhat between years, resulting in increased estimated emissions.

Economic emission intensity of motor vehicle loans



Economic emission intensity of mortgages

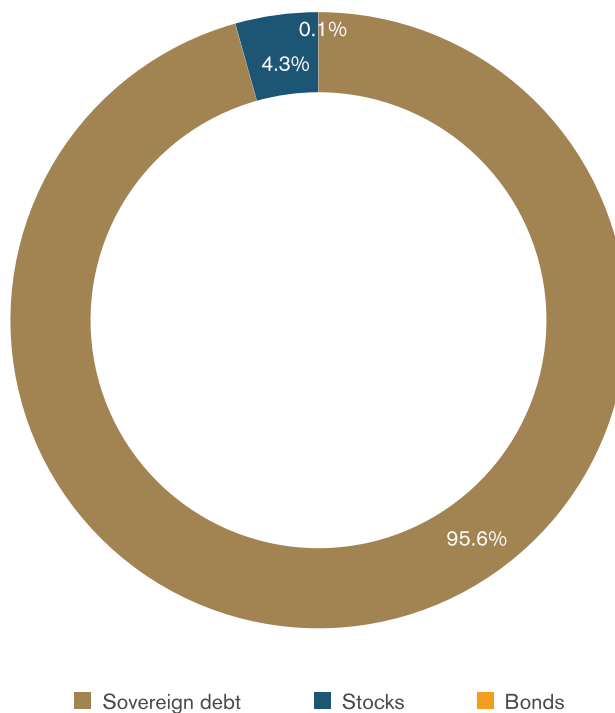


⁵ Average distance travelled by vehicle <https://island.is/oennur-toelfraedi-samgoengustofu>



Financed emissions from Kvika's investments

Financed emissions from Kvika's investments in 2022, excluding LULUCF



The absolute financed emissions from Kvika's investments (excluding LULUCF) in 2022 were 68.98 ktCO₂e and were mostly due to sovereign debt, since sovereign debt has a high emission intensity and a large part of Kvika's investments are in that asset class. If considering emissions of sovereign debt including LULUCF, the financed emissions from investments were 191.20 ktCO₂e. Kvika's other bond holdings are mostly in companies with low carbon emissions, and therefore the relative emissions of bonds is negligible.

Emissions from investments in 2021 were 43.35 ktCO₂e excluding LULUCF and 121.44 ktCO₂e including LULUCF. Emissions from sovereign debt accounted for the largest share of financed emissions from investments that year, or 38.8 ktCO₂e.



Consolidated financial statement 2021

Assets	Book value ISKm	In scope ISKm	Out of scope ISKm	Financed emissions ⁶ ktCO ₂ e	Emission intensity tCO ₂ e/ISKm	Data quality Weighted average	In scope Percentage (%)
Cash and balances with Central Bank	38,646		38,646				
Derivatives	2,734		2,734				
Fixed income securities	40,047	37,693	2,354	40.0	1.06	1.87	94
Shares and other variable income securities	22,683	12,058	10,625	3.4	0.28	3.44	53
Securities used for hedging	22,086		22,086				
Loans to customers	71,588	59,413	12,174	18.8	0.32	3.52	83
Investment in associates	67		67				
Intangible assets	31,455		31,455				
Property and equipment	406		406				
Deferred tax assets	3,178		3,178				
Reinsurance assets	749		749				
Other assets	10,043		10,043				
Investment properties	1,100		1,100				
Operating lease assets	1,459		1,459				
Total	246,240	109,164	137,076	62.2	0.57	2.94	44

Loans to customers ⁷	Book value ISKm	In scope ISKm	Out of scope ISKm	Financed emissions ktCO ₂ e	Emission intensity tCO ₂ e/ISKm	Data quality Weighted average	In scope Percentage (%)
Mortgages	2,231	2,231		0.004	0.002	4.00	100
Motor vehicle loans	30,722	30,722		12.760	0.415	3.10	100
Other loans to corporates	31,183	26,460	4,722	6.040	0.228	3.96	85
Other loans to individuals	7,452		7,452				
Total	71,588	59,413	12,174	18.8	0.32	3.52	83

⁶ According to the PCAF, financial institutions are required to report emissions in Scope 1 and 2 and partly for Scope 3 for companies to which they lend or invest in. There are several industries where Scope 3 emissions are expected to be accounted for, and this applies to companies operating in the oil, gas and mining industries, in transportation, in construction and building industries and in materials and industrial activities. The results for financed emissions in this report include information on Scope 1, 2 and 3 for the sectors listed above.

⁷ Mortgages and motor vehicle loans were classified according to PCAF's definitions.



Consolidated financial statement 2022

Assets	Book value ISKm	In scope ISKm	Out of scope ISKm	Financed emissions ktCO ₂ e	Emission intensity tCO ₂ e/ISKm	Data quality Weighted average	In scope Percentage (%)
Cash and balances with Central Bank ⁸	36,671	2,831	33,840	5.0	1.75	2	8
Derivatives	4,941		4,941				
Fixed income securities	65,160	61,255	3,905	61.0	1.00	1.28	94
Shares and other variable income securities	19,411	6,244	13,167	3.0	0.48	2.23	32
Securities used for hedging	13,842		13,842				
Loans to customers	107,139	84,715	22,424	28.4	0.34	3.63	79
Investment in associates	89		89				
Intangible assets	34,080		34,080				
Property and equipment	481		481				
Deferred tax assets	3,233		3,233				
Reinsurance assets	627		627				
Other assets	15,466		15,466				
Investment properties	1,165		1,165				
Operating lease assets	884		884				
Total	303,189	155,045	148,144	97.4	0.63	2.62	51

Loans to customers ⁹	Book value ISKm	In scope ISKm	Out of scope ISKm	Financed emissions ktCO ₂ e	Emission intensity tCO ₂ e/ISKm	Data quality Weighted average	In scope Percentage (%)
Mortgages	2,152	1,931	221	0.003	0.002	4.00	90
Motor vehicle loans	33,468	33,468		16.275	0.486	2.27	100
Other loans to corporates	62,632	49,317	13,315	12.152	0.246	4.54	79
Other loans to individuals	8,888		8,888				
Total	107,139	84,715	22,424	28.4	0.34	3.63	79

⁸ Cash and cash equivalents include short term treasury bills.

⁹ Mortgages and motor vehicle loans were classified according to PCAF's definitions.



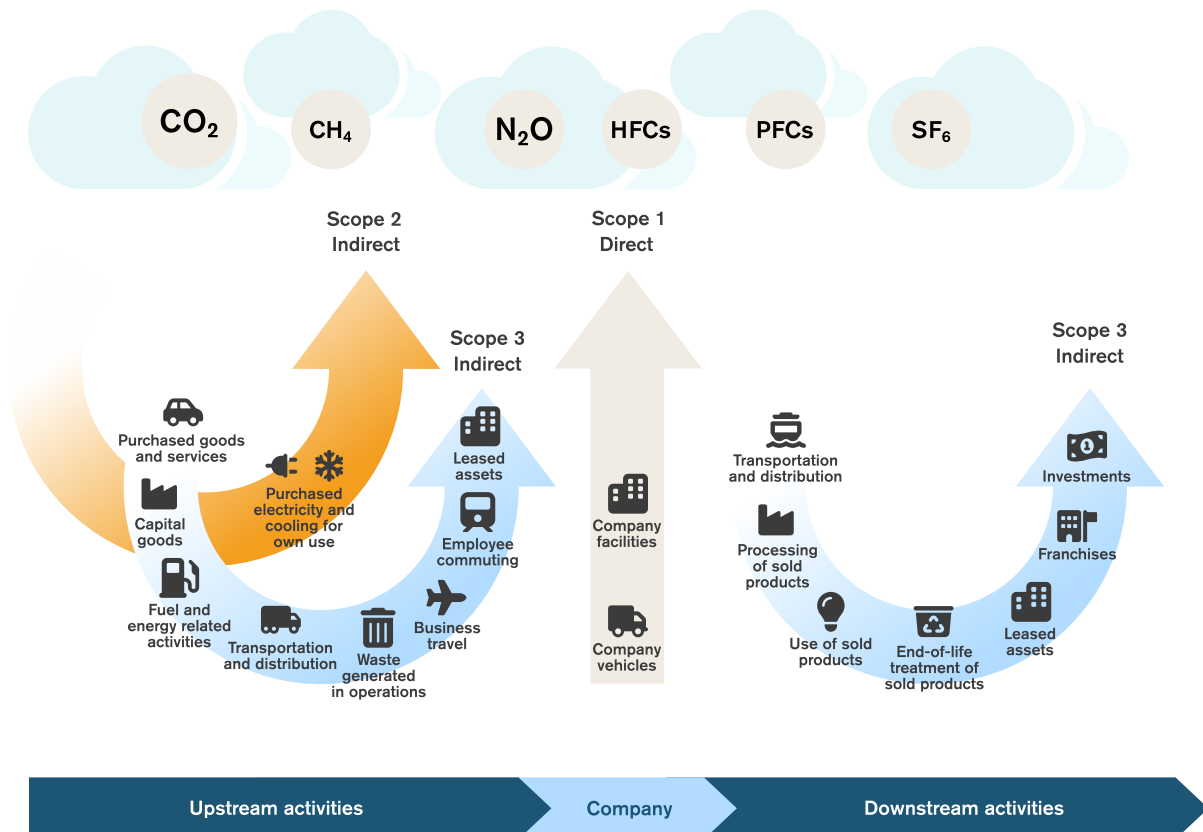
Methodology and detailed results for each asset class

Companies across industries have increasingly begun to calculate and publish the carbon footprint from their operations. Most of them use the Greenhouse Gas Protocol (GHG Protocol), which issues guidelines for calculating carbon footprint, but in those guidelines, emissions from operations can fall into three scopes, i.e. scope 1, 2 or 3:

Scope 1: Direct emissions from the operation of companies, e.g. due to combustion of fuel or chemical reactions in manufacturing.

Scope 2: Indirect emissions that occur from the production of heat or electricity.

Scope 3: Other indirect emissions higher or lower in the value chain, e.g. emissions from purchased services, from the production of inputs or the use of goods.



Resource: [Greenhouse Gas Protocol](#)



As has been mentioned, investments and loans fall into scope 3 for financial institutions. A harmonized methodology for calculating financed emissions from investments and loans was first developed in 2020 by PCAF and was confirmed by the GHG Protocol.

A key part of PCAF's methodology, across asset classes, is the so-called attribution factor, which determines how much of the company's emissions in the portfolio are to be covered by the financed emissions of the company that lends or invests.

In general, calculations according to the PCAF methodology can be described as follows:

$$\text{Financed emissions} = \sum_i \text{Attribution factor}_i \times \text{Emissions}_i$$

i = borrower or investee

Methodologies have not been developed for all asset classes and therefore a part of the loan and asset portfolio is out of scope in the report's conclusions. The current methodology¹⁰ includes seven asset classes, they are:

- Listed equity and corporate bonds
- Business loans and unlisted equity
- Project finance (climate project financing)
- Commercial real estate
- Mortgages
- Motor vehicle loans
- Sovereign debt



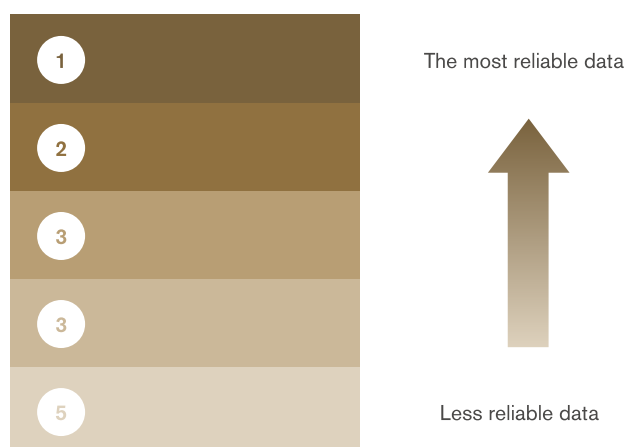
¹⁰ PCAF (2022). The Global GHG Accounting and Reporting Standard Part A: Financed Emissions. Second Edition.



Data and data quality

Reliable data is fundamental in the calculation of financed emissions, and therefore an effort is made to use actual data or as close to real data, when possible, e.g. when companies have published emissions from their operations themselves, then that information is used. When companies have not published estimated emissions from their own operations, emissions are estimated based on the most reliable information available at the time the calculations are made, e.g. based on data from the Icelandic Transport Authority, the Housing and Construction Authority (HMS), Creditinfo's sustainability solution Vera, or the PCAF database¹¹. Data quality and access to data is one of the main challenges in calculating financed emissions, and PCAF has therefore published a data quality score that was used in the analysis. The scores are presented in the range 1-5 where the most reliable data is rated 1 and the least reliable data is given a score of 5. As an example, if companies' emission figures are known, they receive a data quality score of 1 or 2, depending on whether their emissions figures have been audited or not.

PCAF's data quality score



When collecting data for the calculations, data on greenhouse gas emissions was also prioritized in the following way according to availability of information and reliability:

1. Audited figures from companies
2. Unaudited figures from companies
3. Emission figures from Creditinfo's sustainability solution Vera
4. Emission figures from PCAF for a specific industry estimated based on a company's income
5. Emission figures from PCAF for a specific industry estimated from a company's assets

If emission figures are not available and it is not possible to estimate emissions, the asset falls outside of the scope. In the calculations for 2021 and 2022, there was insufficient data for the asset categories project financing and commercial real estate, and therefore these assets fall into the category of business loans in the results. The calculations for 2021 were mostly based on information from Creditinfo's database, Vera. For the 2022 calculations, access to Vera's data was limited compared to the previous year, and therefore PCAF's database was used to a greater extent.

¹¹ The PCAF database does not contain emission figures for Iceland, but there is data for Norway which has similar characteristics to Iceland, e.g. in energy production, and therefore the available data was used in individual cases.



Listed equity and corporate bonds

The results show financed emissions from listed equities and corporate bonds on Kvika's balance sheet at year-end 2021 and 2022. Sovereign debt is excluded from this category, but they are discussed later in a separate chapter. Derivatives, securities for hedging, municipal bonds, green bonds and unit shares are also excluded as methodologies for these financial instruments are still being developed.

For listed companies, the following formula is used to calculate financed emissions:

$$\text{Financed emissions} = \sum_c \frac{\text{Outstanding amount}_c}{\text{EVIC}_c} \times \text{Company emissions}_c$$

c = company that has borrowed or been invested in

Enterprise Value including Cash (EVIC) indicates the value of a company, including cash and cash equivalents, in order to prevent the total value from becoming negative.

For unlisted bonds, the following formula is used to calculate a company's financed emissions:

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

c = company that has borrowed or been invested in

When using emission figures from databases to estimate financed emissions based on a company's income, the following formula is used:

$$\text{Financed emissions} = \sum_c \frac{\text{Outstanding amount}_c}{\text{Total equity}_c + \text{debt}_c} \times \text{Revenue}_c \times \frac{\text{GHG emissions}_s}{\text{Revenues}_s}$$

c = company that has borrowed or been invested in
s = sector

When using emission figures from databases to estimate financed emissions based on a company's assets, the following formula is used:

$$\text{Financed emissions} = \sum_c \text{Outstanding amount}_c \times \frac{\text{GHG emissions}_s}{\text{Assets}_s}$$

c = company that has borrowed or been invested in
s = sector

Data on corporate emissions was collected and prioritized as follows:

Data quality 1: Audited emission figures from companies' annual and/or sustainability reports

Data quality 2: Unaudited emissions figures from companies' annual and/or sustainability reports

Data quality 4: Information on companies' revenues is available

Data quality 5: Emissions are estimated based on companies' assets



2022	Book value ISKm	In scope ISKm	Financed emissions ktCO₂e	Emission intensity tCO₂e/ISKm	Data quality Weighted average	In scope Percentage (%)
Listed equity and corporate bonds	23,886	14,937	3.0	0.20	2.4	63

2021	Book value ISKm	In scope ISKm	Financed emissions ktCO₂e	Emission intensity tCO₂e/ISKm	Data quality Weighted average	In scope Percentage (%)
Listed equity and corporate bonds	25,311	16,424	3.3	0.20	3.2	65





Business loans and unlisted equity

The results show the financed emissions from business loans and unlisted equities on Kvika's balance sheet at year-end 2021 and 2022. The methodology is similar to the one used for listed equity and corporate bonds, but for unlisted equity, the following formula is used to calculate the outstanding amount:

$$Outstanding\ amount_c = \frac{\# \text{ shares of financial institution}_c}{\# \text{ total shares}_c} \times Total\ equity_c$$

c = company that has borrowed or been invested in

2022 Business loans – ÍSAT category	Book value ISKm	In scope ISKm	Financed emissions ktCO ₂ e	Emission intensity tCO ₂ e/ISKm	Data quality Weighted average	In scope Percentage (%)
A - Agriculture, forestry and fisheries	920	555	0.49	0.89	4.0	60
B - Mining and quarrying	23	23	0.06	2.49	4.0	100
C - Manufacturing	812	618	2.93	4.75	4.0	76
E - Water supply, sewerage, waste management and remediation activities	262	260	0.64	2.47	4.0	99
F - Construction	8,296	5,214	5.45	1.05	4.6	63
G - Wholesale and retail trade, repair of motor vehicles and motorcycles	2,262	2,082	0.65	0.31	4.0	92
H - Transporting and storage	554	400	1.21	3.02	4.6	72
I - Accommodation and food service activities	4,866	3,598	0.16	0.04	5.0	74
K - Financial and insurance activities	12,095	7,274	0.01	0.00	4.0	60
L - Real estate activities	27,091	25,566	0.23	0.01	4.7	94
N - Administrative and support service activities	3,244	2,421	0.23	0.10	4.0	75
Q - Human health and social work activities	637	560	0.04	0.08	4.8	88
Other	1,570	746	0.04	0.05	4.5	48
Total	62,632	49,317	12.15	0.25	4.5	79

2022	Book value ISKm	In scope ISKm	Financed emissions ktCO ₂ e	Emission intensity tCO ₂ e/ISKm	Data quality Weighted average	In scope Percentage (%)
Unlisted equity	6,901	1,374	0.02	0.01	4.00	20



2021 Business loans – ISAT category	Book value ISKm	In scope ISKm	Financed emissions ktCO ₂ e	Emission intensity tCO ₂ e/ISKm	Data quality Weighted average	In scope Percentage (%)
A - Agriculture, forestry and fishing	651	638	1.19	1.87	4.00	98
B - Mining and quarrying	25	25	0.02	0.60	4.00	100
C - Manufacturing	731	731	0.90	1.23	4.00	100
E - Water supply, sewerage, waste management and remediation activities	283	283	1.71	6.03	4.00	100
F - Construction	4,596	3,309	0.61	0.19	4.00	72
G - Wholesale and retail trade, repair of motor vehicles and motorcycles	2,280	2,212	0.06	0.02	3.99	97
H - Transporting and storage	300	297	0.61	2.06	4.00	99
I - Accommodation and food service activities	682	682	0.03	0.05	4.00	100
K - Financial and insurance activities	9,536	7,152	0.44	0.07	3.86	75
L - Real estate activities	7,586	6,827	0.02	0.00	4.00	90
N - Administrative and support service activities	2,665	2,558	0.25	0.10	4.00	96
Q - Human health and social work activities	171	135	0.11	0.83	4.00	79
Other	1,677	1,610	0.08	0.05	4.00	96
Total	31,183	26,460	6.04	0.24	3.96	85

2021	Book value ISKm	In scope ISKm	Financed emissions ktCO ₂ e	Emission intensity tCO ₂ e/ISKm	Data quality Weighted average	In scope Percentage (%)
Unlisted equity	12,662	7,471	1.23	0.16	4.47	59

Data on corporate emissions was collected and prioritised as follows:

Data quality 1: Audited emission figures from companies' annual and/or sustainability reports

Data quality 2: Unaudited emissions figures from companies' annual and/or sustainability reports

Data quality 4: Information on companies' revenues is available

Data quality 5: Emissions are estimated based on companies' assets



Mortgages

The results show financed emissions from mortgages to consumers (individuals and households) on Kvika's balance sheet at year-end 2021 and 2022.

Emissions related to mortgages are due to the energy consumption of housing. The main variables for determining energy consumption are the type of housing and its size. To estimate emissions by type of housing, the methodology presented in a report by Arion Bank and Mannvit¹² is used, which gives energy consumption per square metre, which is then multiplied by the total number of square metres. The methodology takes into account electricity consumption, but does not consider emissions during the building's construction phase since this would result in double counting. The value of a property is based on the current property value.

When calculating emissions from mortgages, the following formula is used:

$$\begin{aligned}
 & \text{Financed emissions} = \\
 & \sum_{b,e} \frac{\text{Outstanding amount}_b}{\text{Property value at origination}_b} \times \text{Energy consumption}_{b,e} \times \text{Emission factor}_e \\
 & \quad b = \text{building} \\
 & \quad e = \text{energy source}
 \end{aligned}$$

2022 Type of housing	Book value ISKm	In scope ISKm	Financed emissions ktCO ₂ e	Emission intensity tCO ₂ e/ISKm	Data quality Weighted average	In scope Percentage (%)
Single-family home	271	271	0.001	0.003	4.00	100
Apartment	1,797	1,576	0.002	0.001	4.00	88
Semi detached/ terraced house	83	83	0.000	0.002	4.00	100
Total	2,152	1,931	0.003	0.002	4.00	90

2021 Type of housing	Book value ISKm	In scope ISKm	Financed emissions ktCO ₂ e	Emission intensity tCO ₂ e/ISKm	Data quality Weighted average	In scope Percentage (%)
Single-family home	247	247	0.001	0.004	4.00	100
Apartment	1,794	1,794	0.003	0.002	4.00	100
Semi detached/ terraced house	197	197	0.000	0.002	4.00	100
Total	2,238	2,238	0.004	0.002	4.00	100

Data on mortgage emissions were collected and prioritized as follows:

Data quality 4: 2b – Energy consumption estimated based on type of building and square footage

¹² Arion Banki, Mannvit 2021, Green Residential Buildings - Methodology paper. <https://www.arionbanki.is/themes/arionbanki/arionbanki/documents/Frettir/Green%20Residential%20Buildings%20Arion%20Bank.pdf>



Motor vehicle loans

The results show financed emissions from motor vehicle loans on Kvika's balance sheet at the end of 2021 and 2022.

To calculate emissions from motor vehicle loans, total estimated emissions for distance travelled by a vehicle (km) must be found, which is then multiplied by the average distance travelled by that vehicle category. All vehicles that fall into categories M and N¹³ according to the Icelandic Transport Authority's classification are included in the calculation.

When calculating emissions from motor vehicle loans, the following formula is used:

$$\text{Financed emissions} = \sum_{v,f} \frac{\text{Outstanding amount}_v}{\text{Total value at origination}_v} \times \text{Distance traveled}_v \times \text{Efficiency}_{v,f} \times \text{Emission factor}_f$$

v = vehicle or vehicle fleet
f = fuel type

2022 Motor vehicle type	Book value ISKm	In scope ISKm	Financed emissions ktCO ₂ e	Emission intensity tCO ₂ e/ISKm	Data quality Weighted average	In scope Percentage (%)
Electric vehicles	5,267	5,267	0.02	0.00	2.0	100
Hybrid vehicles	9,178	9,178	1.53	0.17	2.0	100
Fossil fuel vehicles	19,023	19,023	14.72	0.77	2.5	100
Total	33,468	33,468	16.27	0.49	2.3	100

2021 Motor vehicle type	Book value ISKm	In scope ISKm	Financed emissions ktCO ₂ e	Emission intensity tCO ₂ e/ISKm	Data quality Weighted average	In scope Percentage (%)
Electric vehicles	3,118	3,118	0.02	0.01	3.0	100
Hybrid vehicles	6,999	6,999	1.1	0.16	3.0	100
Fossil fuel vehicles	20,605	20,605	10.9	0.56	3.2	100
Total	30,722	30,722	12.76	0.42	3.1	100

Information on the average distance travelled by each vehicle category is obtained from the website of the Icelandic Transport Authority. Information on estimated emissions for distance travelled by a vehicle (km) is obtained from the Icelandic Transport Authority's vehicle register and is based on WLTP values¹⁴. For older vehicles where WLTP registration had not started, NEDC¹⁵ was used, which is converted to WLTP according to engine size and power source approximations. For those vehicles for which neither WLTP nor NEDC values were recorded, emissions from comparable vehicles were used, except in the case of trucks (N3). In cases where no data was recorded, the data was retrieved from DEFRA¹⁶. Traditional equipment loans were classified as business loans if data was not available to estimate emissions.

¹³ Vehicle classification: M1 – passenger car, M2 – coach I, M3 – coach II, N1 – van, N2 – truck I, N3 – truck II.

¹⁴ Worldwide Harmonized Light Vehicle Test Procedure (WLPT) is a test method for determining figures for exhaust emissions and fuel consumption of vehicles.

¹⁵ New European Driving Cycle (NEDC) is an older test method for measuring fuel consumption and emissions of vehicles.

¹⁶ Department for Environment, Food & Rural Affairs (DEFRA).



There are no direct emissions from the use of electric cars, thus emission factors from the Environment Agency of Iceland were used for the production of electricity. To estimate emissions, this value is then multiplied by the average energy consumption of electric cars for each kilometer driven.

Data on vehicle emissions were collected and prioritized as follows:

Data quality 2: Information gathered from the Icelandic Transport Authority's vehicle register

Data quality 4: Based on an average for vehicle groups using the same energy source and comparable engine size

Data quality 5: Emissions for trucks obtained from the DEFRA website





Sovereign debt

The results show financed emissions from investments in sovereign debt on the Group's balance sheet at year-end 2021 and 2022.

The calculation of emissions for sovereign debt is as follows:

$$Financed\ emissions = \sum_s \frac{Outstanding\ amount_s}{PPP - adjusted\ GDP_s} \times Sovereign\ emissions_s$$

$s = sovereign\ borrower$

When examining emissions from sovereign debt, total emissions from the economy must be considered. Total emissions from the economy are estimated with or without land use (LULUCF). Data predicting emissions from economies with and without LULUCF is obtained from the United Nations Framework Convention on Climate Change (UNFCCC) website, which provides the highest data quality according to the PCAF rating scale (data quality 1). The latest available data is for 2022.

To estimate the economic size of a country, the gross domestic product (GDP) is used, which has been adjusted based on the purchasing power parity (PPP) of each country. These figures are taken from the World Bank.

	Book value ISKm	In scope ISKm	Financed emissions excl. LULUCF ktCO ₂ e	Financed emissions incl. LULUCF ktCO ₂ e	Emission intensity excl. LULUCF tCO ₂ e/ISKm	Emission intensity incl. LULUCF tCO ₂ e/ISKm	Data quality Weighted average	In scope Percentage (%)
2022								
Sovereign debt	53,783	53,783	65.97	188.18	1.2	3.4	1.05	100
2021								
Sovereign debt	24,757	24,757	38.81	116.90	1.57	4.72	1.00	100



Additional material

Breakdown of loan portfolio by ÍSAT categories for 2021

ÍSAT	Book value ISKm	In scope ISKm	Financed emissions ktCO ₂ e	Emission intensity tCO ₂ e/ISKm	Data quality Weighted average	In scope Percentage (%)
A - Agriculture, forestry and fishing	783	770	1.25	1.59	3.85	98
B - Mining and quarrying	38	38	0.02	0.57	4.00	100
C - Manufacturing	1,158	1,158	1.04	0.90	3.77	100
D - Electricity, gas, steam and air conditioning supply	4	0	0	0.05	4.00	11
E - Water supply, sewerage, waste management and remediation activities	326	326	1.73	5.31	3.96	100
F - Construction	6,124	4,837	1.35	0.22	3.02	79
G - Wholesale and retail trade, repair of motor vehicles and motorcycles	3,310	3,242	0.34	0.10	3.65	98
H - Transporting and storage	1,247	1,244	1.12	0.90	3.81	100
I - Accommodation and food service activities	890	890	0.11	0.12	3.79	100
J - Information and communication	1,338	1,338	0.08	0.06	3.79	100
K - Financial and insurance activities	9,743	7,359	0.52	0.05	2.90	76
L - Real estate activities	7,922	7,151	0.10	0.01	3.58	90
M - Professional, scientific and technical activities	744	732	0.14	0.19	3.19	98
N - Administrative and support service activities	5,666	5,559	1.80	0.32	3.55	98
O - Public administration and defence, compulsory social security	7	7	0	0.00	3.47	100
P - Education	91	72	0.02	0.17	2.42	80
Q - Human health and social work activities	267	231	0.13	0.49	3.09	86
R - Arts, entertainment and recreation	411	388	0.03	0.08	3.71	94
S - Other services activities	96	96	0.03	0.03	3.36	100
Total - corporates	40,165	35,437	9.80	0.28	3.36	88
Consumers	31,423	23,976	9.01	0.38	3.01	76
Total - Kvika	71,588	59,413	18.80	0.32	3.21	83



Breakdown of loan portfolio by ÍSAT categories for 2022

ÍSAT	Book value ISKm	In scope ISKm	Financed emissions ktCO ₂ e	Emission intensity tCO ₂ e/ISKm	Data quality Weighted average	In scope Percentage (%)
A - Agriculture, forestry and fishing	1,082	717	0.60	0.83	3.75	66
B - Mining and quarrying	38	38	0.08	2.03	3.81	100
C - Manufacturing	1,229	1,035	3.18	3.08	3.72	84
D - Electricity, gas, steam and air conditioning supply	3					
E - Water supply, sewerage, waste management and remediation activities	288	286	0.67	2.33	3.99	99
F - Construction	10,011	6,925	6.70	0.97	4.16	69
G - Wholesale and retail trade, repair of motor vehicles and motorcycles	3,649	3,469	1.13	0.33	3.27	95
H - Transporting and storage	1,681	1,527	2.15	1.41	4.00	91
I - Accommodation and food service activities	4,246	2,978	0.20	0.07	4.78	70
J - Information and communication	834	331	0.05	0.16	2.52	40
K - Financial and insurance activities	12,291	7,455	0.68	0.01	4	61
L - Real estate activities	24,590	23,005	0.38	0.02	4.65	94
M - Professional, scientific and technical activities	637	600	0.13	0.22	2.67	94
N - Administrative and support service activities	7,101	6,278	2.46	0.39	3.28	88
O - Public administration and defence, compulsory social security	6	6	0	0.01	2.00	94
P - Education	203	193	0.04	0.21	3.34	95
Q - Human health and social work activities	705	628	0.06	0.09	4.52	89
R - Arts, entertainment and recreation	464	456	0.04	0.10	4.63	98
S - Other services activities	95	80	0.05	0.57	2.09	85
Total - corporates	69,155	56,006	17.99	0.32	4.18	81
Consumers	37,984	28,683	10.44	0.36	2.63	76
Total - Kvika	107,139	84,689	28.43	0.34	3.65	79



Glossary

Financed emissions: Used for indirect absolute greenhouse gas emissions financial institutions finance through investments and/or lending.

Emission intensity metric: Defined as emissions per a specific unit, for example produced energy, revenue, square footage and number of employees.

Attribution factor: An attribution factor is a factor used to calculate greenhouse gas emissions by multiplying it with relevant basic data, e.g. tCO₂e/km.

LULUCF: Stands for “land use, land use change and forestry”. It is the largest source of Iceland's emission.

tCO₂e: One tonne of CO₂ equivalents is equivalent to one tonne of CO₂ emissions. Calculations are based on other greenhouse gas' global warming potential. Global warming potential indicates the warming potential of different greenhouse gases and makes it easier for comparison.



