



The Semi-Annual Climate Accounts 2024

Landsvirkjun's Semi-Annual Climate Accounts for the first half of 2024 shows that greenhouse gas emissions from the Company's operations were approximately 21,400 tonnes CO₂e, a 16% increase year on year. Landsvirkjun's carbon sequestration was approximately 18,200 tonnes CO₂e for the same period, an increase of 2% year on year. The Company's carbon footprint, i.e., the total greenhouse gas emissions minus carbon sequestration, was approximately 3,200 tonnes CO₂e. The Company's carbon footprint remains one of the lowest documented in the electricity generation sector.

Total carbon intensity for the first half of 2024 was 3.1 gCO₂e/kWh, an increase of 23% year on year. The result is below the defined 4 gCO₂e/kWh emissions threshold in the Company's Climate and Environmental Policy. Net carbon intensity was 0.46 gCO₂e/kWh.

The increase in greenhouse gas emissions is mainly due to higher emissions from the Company's geothermal stations, as emissions from geothermal stations are the single largest source of emissions in Landsvirkjun's operations. Emissions from electricity generation from geothermal stations increased by 31% year on year, primarily due to increased electricity generation at Krafla Power Station compared to the first half of 2023. The emissions were comparable to those in 2022, when electricity generation was consistent with this year. Carbon intensity from geothermal energy generation was 28 gCO₂e/kWh, an increase of 21% year on year.

Unfavourable reservoir levels led to decreased electricity generation from hydropower compared to the first half of 2023. Emissions from reservoirs decreased by 28% year on year, but these emissions are controlled by the number of days the reservoirs are frozen.

Avoided emissions from Landsvirkjun's electricity generation were 1.2 million tonnes of CO₂e, a reduction of 7% year on year. The decrease can be attributed to decreased electricity generation and a higher wholesale share in electricity sales in 2024.

↓ Key Figures

Carbon footprint

3,222 tCO₂e ↑471%

Net carbon intensity

0.46 gCO₂e/kWh ↑506%

Total emissions

21,436 tCO₂e ↑16%

Carbon intensity

3.1 gCO₂e/kWh ↑23%

Carbon sequestration

18,214 tCO₂e ↑1,8%

Carbon intensity of electricity generation

2.8 gCO₂e/kWh ↑30%

Electricity generation

6,969 GWh ↓5,9%

Avoided emissions

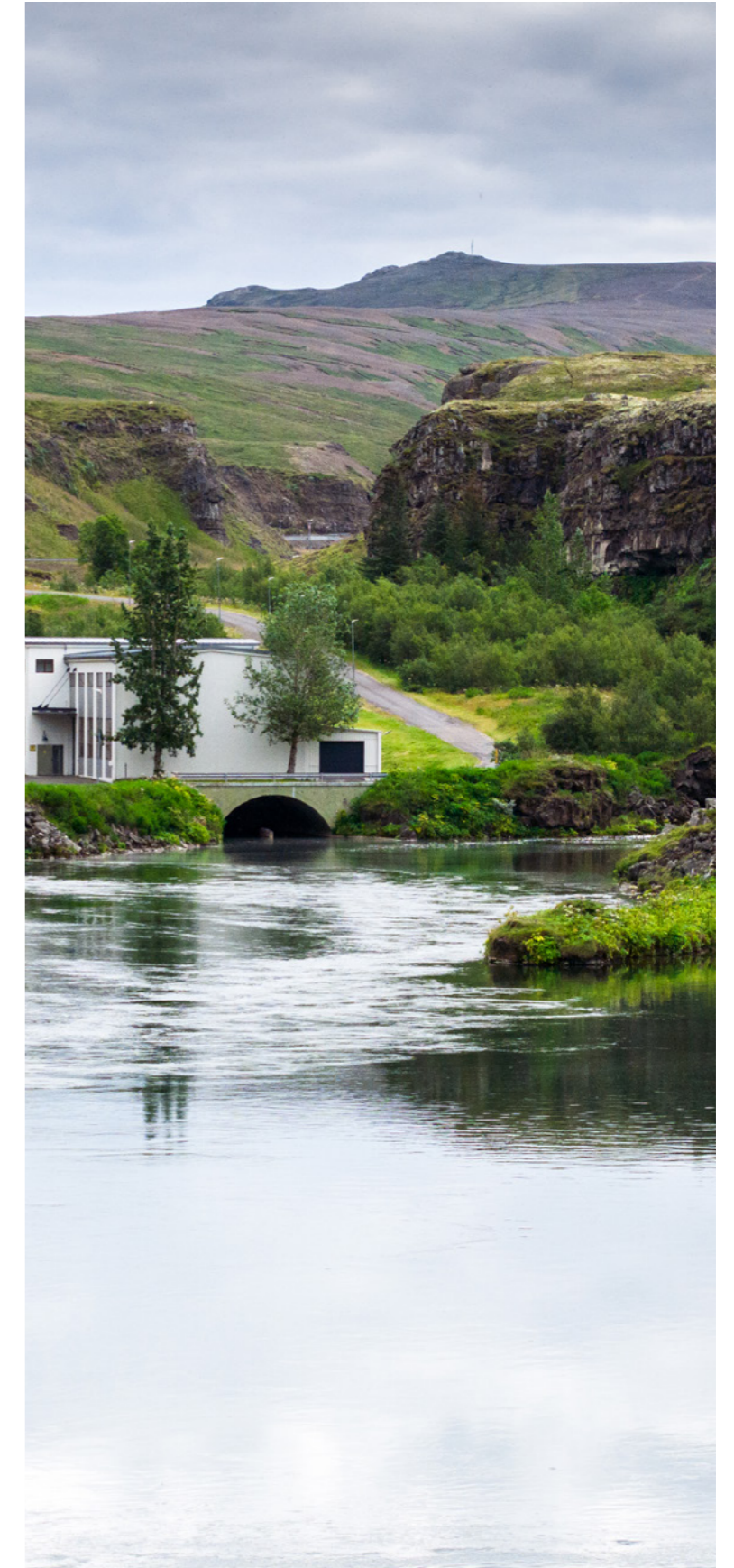
1,240,173 tCO₂e ↓6,9%





↓ The Carbon Footprint in the First Half of 2024

Scope 1 (t CO ₂ e)	2020	2021	2022	2023	2024	Change from 2023
Geothermal energy	15,326	15,774	17,977	13,803	18,102	31%
Reservoirs (CH ₄)	1,836	1,744	1,892	2,359	1,705	-28%
Fuel	176	191	185	151	152	0.43%
Electrical equipment	0	15	52	27	31	16%
Total Scope 1	17,338	17,725	20,106	16,341	19,991	22%
Scope 2 (t CO₂e)						
Purchased electricity (location-based)	4.6	3.0	4.0	3.6	2.7	-24%
Purchased electricity (market-based)	4.6	3.0	4.0	1.3	1.0	-24%
Purchased heating	8.9	11	9.4	11	15	34%
Total Scope 2 (location-based)	13	14	13	15	18	20%
Total Scope 2 (market-based)	13	14	13	13	16	28%
Scope 3 (t CO₂e)						
Electricity transmission	1,131	964	759	575	575	0%
Fertiliser	619	684	854	864	507	-41%
Construction	211	165	44	369	85	-77%
Fuel	72	74	78	76	77	0.63%
Employee commute	35	54	48	47	47	0%
Air travel	53	30	83	129	125	-3.4%
Waste	13	20	24	45	11	-76%
Total Scope 3	2,134	1,990	1,889	2,106	1,427	-32%
Outside of Scopes (t CO₂e)						
Reservoirs (CO ₂)	120	97	119	160	128	-20%
Biodiesel combustion (CO ₂)	16	27	36	45	50	11%
Total Outside of Scopes	136	124	155	205	178	-13%
Total emissions (t CO₂e)	19,485	19,729	22,009	18,461	21,436	16%
Carbon sequestration (t CO₂e)	-16,500	-17,200	-17,875	-17,897	-18,214	1.8%
Carbon footprint (t CO₂e)	2,985	2,529	4,134	564	3,222	471%
Electricity generation (GWh)						
Geothermal energy	572	467	642	598	648	8.4%
Hydropower	6,247	6,389	6,557	6,803	6,317	-7.1%
Wind power	3.7	3.2	2.9	3.3	3.6	10%
Total electricity generation	6,823	6,859	7,201	7,404	6,969	-5.9%
Carbon intensity (g CO₂e /kWh)						
Geothermal energy (Scope 1)	27	34	28	23	28	21%
Hydropower (Scope 1)	0.29	0.27	0.29	0.35	0.27	-22%
Carbon intensity of electricity generation (S1)	2.5	2.6	2.8	2.2	2.8	30%
Other emissions	0.36	0.34	0.32	0.34	0.26	-23%
Carbon intensity	2.9	2.9	3.1	2.5	3.1	23%
Net carbon intensity	0.44	0.37	0.57	0.076	0.46	506%





The Semi-Annual Climate Accounts Methodology

The Semi-Annual Climate Accounts are a disclosure of Landsvirkjun's progress in executing its Climate Action Plan. Furthermore, it analyses how the Company is advancing towards ambitious goals for carbon neutrality and reducing emissions. Landsvirkjun's Semi-Annual Climate Accounts provide insights into annual emissions, calculated at year-end, inspected and verified by an independent certification body, and published in Landsvirkjun's Annual Climate Accounts.

Landsvirkjun's Climate Accounts are based on the Greenhouse Gas Protocol (GHGP) methodology, a leading global company standard for disclosure of greenhouse gas emissions. Information on Landsvirkjun's GHG emissions is streamed on the Company's climate dashboard and is inspected and reviewed after each quarter.

Further information on the methodology can be found in the [Climate Accounts 2023](#). Emissions items such as Electricity transmission and Employee commute are unavailable until year-end. The Semi-Annual Climate Accounts assume half of last year's emissions for these items. [The Icelandic Environment Agency](#), [DEFRA](#), and the National Inventory Report issue the emissions factors applied and are part of the annual verification by an external certification body.

The annual estimate of avoided emissions due to Landsvirkjun's electricity generation is part of the Company's disclosure of green financing. The estimation for avoided emissions is based on benchmark factors issued by the International Financial Institution (IFI) and the division of electricity sales to large end-users and wholesale for the first half of 2024. The benchmark is 181.4 g CO₂e/kWh. See the [Annual Green Finance Report](#) for further information about the computing methodology.



Contact

Jóhanna Hlín Auðunsdóttir.
Director of Climate and Green Solutions
Johanna.Hlin.Audunsdottir@landsvirkjun.is