SAktio AUK

Carbon Footprint 2023 - 2024 -Results Report -







I. Introduction to climate change and the Carbon Footprint

II. Results of the Carbon FootprintA. Overall resultsB. Detailed results

III. Action plan to reduce emissions



Breakdown of greenhouse gas emissions by business sector



Sources : European Commission, Joint Research Centre (JRC), EDGAR (Emissions Database for Global Atmospheric Research) Community GHG database (2024). The data are based on 2023.

What is a Carbon Footprint?

 $\begin{array}{c} \searrow \\ \swarrow \\ & \bigotimes \\ & \bigotimes \\ & \mathsf{HFC/PFC} \quad & \bigvee \\ & \mathsf{N}_2 \mathsf{O} ... \\ & & & & \\ \end{array}$

Administration

Project / Event

Aktio

Territory

An inventory of greenhouse gases emissions, occurring directly or indirectly due to the activities of an organization over a given time period.

🔸 📰 Typically a year

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Scopes 1, 2 et 3
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Upstream: transport, purchases, fixed assets

Downstream: transport, product use, waste

Carbon footprint perimeter: scopes 1, 2 and 3

Scope 1 & 2: emissions related to flows concerning activities controlled and operated by the company

Scope 3: emissions related to flows concerning all other activities in the value chain (upstream, parallel, downstream).



How do we count emissions?

GHG emissions (kg CO_2 eq) = Activity data x Emission factor

Activity data describes and quantifies all the company's activities that generate greenhouse gas emissions:

- Energy consumed
- Mass of materials purchased
- Distances travelled by employees
- Euros spent on services,
- etc.

Emissions factors are used to convert activity data into the corresponding GHG emissions. Their unit must therefore correspond to a mass of GHG emitted (based on a unit common to all gases, the kgCO2e) per unit of activity data (e.g. kWh, kg, L, km, €, etc.).



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General presentation



As a designer of high-quality, reliable and high-performance aluminum profile systems, AluK provides expert solutions and personalized support.

The carbon footprint was carried out on the online platform Aktio. All activity data and results are available on the platform.

This report presents the results of the GHG Protocol assessment.

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Perimeter of the Carbon Footprint

Reporting period: 09/08/2023 - 08/31/2024

Year of baseline report: 09/08/2020 - 08/31/2021

Operational scope: this footprint covers all of the company's direct emissions (sources controlled by the organisation) and indirect emissions (sources required for the organisation's activities) (default recommended option). Any exclusions, in particular due to a lack of data to date, are justified below.

Organisational scope: the control approach adopted is operational control (recommended default option). The organisation consolidates 100% of the emissions from the facilities it controls.

The carbon footprint therefore covers the 10 business units of AluK group.



Flow map



Interconnections management (1/2)

Context :

In order to be able to visualise the platform results at the level of the Valfidus group as well as at the level of each entity, this assessment implied a certain amount of management of interconnections, i.e. physical flows which appear several times in the platform because they operate at different levels of the value chain depending on the entities. This is illustrated by the example of freight below.





Interconnections management (2/2)

Interconnections in this carbon footprint:

- Interconnections have been identified for various emission items as part of this assessment:
 - O Goods transportation
 - **O** Purchases of raw materials
 - O Use and end-of-life of sold products



Overview of results - Emission by scope



Scope 1 represents fuel combustion emissions (natural gas + fuel for vehicles) and gas leaks from air conditioning units.

Scope 2 represents emissions related to **electricity** consumption.

Scope 3 represents **all other** indirect emissions (purchases, transport, waste, etc.). This is why it commonly represents more than 90% of the emissions in a balance sheet.

Scope 3 accounts for the vast majority of the GHG emissions of Valfidus. Given that greenhouse gas emissions occur throughout the **aluminium's whole life cycle**, it is logical that the **scope 3 concentrates most of the GHG emissions**.



141,945 tCO2eq, what does that mean ?

786 kgCO₂eq per k€ of turnover

175.9 tCO₂eq per employee These indicators are internal and to be monitored over time at isoperimeter .

12.3 tCO₂eq per ton of aluminium sold Average carbon footprint of **10,919** Luxembourgish citizens¹

> **19.6 millions** meatbased meals²



278.3 millions plantbased meals²







¹ source <u>Carbone4</u> ² source ADEME

³ source Valérie Masson-Delmotte

0.75 millions Luxembourg-Trevenzuolo round trips by plane²

73 millions Luxembourg-Trevenzuolo round trips by train²

2.1 millions tons of glacier ice melted³





Overview of the results - Emissions per category

Miscellaneous purchases						73%	104 003 tCO₂eq
Sold products		13%					18 739 tCO₂eq
Energy	4%						6 190 tCO₂eq
Miscellaneous fixed assets	4%						5 452 tCO₂eq
Freight transport	2%						2 936 tCO₂eq
People transportation	2%						2 854 tCO₂eq
Waste and wastewater	< 1%						771 tCO₂eq
Real estate	< 1%						419 tCO₂eq
Car fleet	< 1%						274 tCO₂eq
Fugitive emissions	< 1%						248 tCO₂eq
Digital (IT)	< 1%						58 tCO₂eq
	0	20 000	40 000	60 000	80 000	100 000	120 000

ſ	Raw materials and manufactured goods						96%	10	00 268 tCO₂eq
	Purchases of miscellaneous services	3%							3 320 tCO₂eq
►	Purchase of other goods	< 1%							416 tCO₂eq
		0	20 000	40 000	60 000	80 000	100 000	120 000	

Purchases essentially correspond to the manufacture of the aluminium. It has been calculated with accurate weight and Environmental Product Declaration (EPD) or specific emission factor if EPD were not available.

Sold products (13%) is the second source of emissions, linked to the transformation and end-of-life of the aluminium.



Overview of the results - Emission by breakdown



The emissions are mainly proportional to the **quantity of aluminium sold**, since aluminium is the main cause of AluK emissions. The negative emissions at the bottom of the graph correspond to the **interconnexions** to ensure that the emissions are correct at group level but also business unit level.



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Allocation of emissions - Purchases

The raw materials accounts for the vast majority of the purchases item: this is mainly due to the **production of these raw materials (94,9%).**

Purchases Global 73% of total emissions



- **Polyamid** = mainly thermal breaks
- Plastic = mainly gaskets & accessories

Allocation of emissions - Purchases of raw materials - Aluminium profiles



Raw materials

71% of total emissions



Aluminium profiles emissions can vary depending on the type of profile purchased and the specificity of the data collected. Specific supplier data were collected mostly for Aluk group.



Allocation of emissions - Purchases - Services

and goods purchased



Purchases

Other purchases

2% of total emissions

The GHG emissions associated with purchases of services and goods account for only 2% of the company emissions.

This item's emissions were calculated with **monetary ratios**. Engineering services, repair and installation of machine and banking/insurances services account for most of this item's emissions.

Allocation of emissions - Sold products



Sold products Global 13% of total emissions **ONote:** The calculation of emissions associated with the end-of-life of products sold is based on a material approach: we have considered an average end-of-life for aluminium, for all the quantities of aluminium sold. For the processing of goods sold, an emission factor from the ecoinvent database was used - metal working, average for aluminium manufacturing. Using an average emission factor allowed us to ensure the consistency of the calculation method for sold aluminium to Aluk Group entities as well as external clients.

A certain proportionality can be observed between end-of-life and processing: the quantities of aluminium considered are the same.



It should be noted that in **GHG Protocol reporting**, all emissions related to the manufacture of capital goods are to be considered in the year of purchase. This explains the disparity of emissions by site, and the high variability of emissions from this item.

Allocation of emissions - Fixed assets -

Miscellaneous fixed assets



Global
4% of total emissions

Aktio

Fixed assets

Some capital goods emissions were calculated with monetary data. The uncertainty of the associated emissions could be reduced in the future by improving the quality of the data collected through the monitoring of new equipment and machines purchased each year (weight of the machine, type of machine...).

Allocation of emissions - Fixed assets - Vehicles



Fixed assets

Global

<1% of total emissions

The type of engine has an impact on the quantity of GHG emissions emitted during manufacture. An electric vehicle, for example, emits more at the manufacturing stage than a combustion-powered vehicle, because the manufacture of a battery emits more than that of a fuel tank.







Global

<1% of total emissions



Most of IT equipment emissions were calculated with monetary data as well (80%). The uncertainty of the associated emissions could be reduced in the future by improving the quality of the data collected through the monitoring of new IT equipment purchased each year.

Allocation of emissions - Energy



Energy

Global

<1% of total emissions

GHG emissions in this category are mainly associated with electricity consumption and the consumption of nonvehicle fuels (mainly natural gas).

For air-conditioning

emissions, the values reported here correspond to refrigerant leaks, and not to the electricity consumed by these appliances (which is already included in electricity).

Allocation of emissions - Energy - Electricity

Energy

Global

4% of total emissions

Carbon intensity of electricity consumption per entity



The variation in greenhouse gas emissions is not proportional to the variation in consumption.

In fact, electricity generation generates more or less GHG emissions depending on how the electricity is produced, which is linked to the country of production.

For instance, Aluk France has a very **low carbon electricity production**, contrary to Aluk CN or Aluk India.

Allocation of emissions - Energy - Electricity Emissions Factors





Electricity maps : to see in direct time the electricity consumption by country



Allocation of emissions - Freight - By mode



Intercos - BU Keller Aluk CN Aluk NL Aluk BE Aluk India Aluk India Aluk ME Aluk UK Aluk UK AWS Freight Global

2% of total emissions

The freight can be **operated by Aluk** (column Fuel) **or by a third-party** (truck, sea, plane and train).

The majority of the emissions comes from **operated fleet**, on which Aluk can have a leverage more easily.

However, a **non-negligible part comes also** from truck, working with **sustainable trucks companies** will enable to reduce emissions.

Last, the different entities use very different modes of freight, meaning **each of them will face its own challenges** in reducing the freight emissions.



These emissions are in some ways proportional to the number of FTEs. 2 main topics emerge:

- the cars for the commuting. Note however that these calculations comes mainly from the assumption that everyone use a thermal car, which is likely overestimating the emissions
- the fuel for the business travels fleet, especially for Aluk UK

A few orders of magnitude to help you make decisions -Long-distance transport



A few orders of magnitude to help you make decisions short-distance transport

Comparison of the emissions with gasoline car



Travelling **1 km** in a gasoline car emits as much as travelling: **5** km in public transport 14 km by electric bike

Source: Base Carbone, V23.0





These emissions are generated by the **collection**, **transportation and treatment of the wastes**. Note that the emissions factors used are generic and does not reflect the reality of the waste handling (since the data is not accessible). These results are therefore only an order of magnitude to help in decision making: **scraps (metals) and packaging (paper/cardboard) are the main topics**.

Key lessons

1. Most emissions come from the purchase of raw materials and manufactured goods

- The impact of raw materials purchases was calculated with different type of emission factors: supplier data and EPDs and average emission factors based on the region of production. The use of supplier emission factors has significantly improved the quality of the carbon footprint, thereby reducing the uncertainty of the main GHG emissions item.
- Monetary ratios were used in order to calculate the GHG emissions associated to the purchase of most accessories and miscellaneous purchases and fixed assets. Nonetheless, the total emissions calculated with monetary ratios only represent 30% of Aluk carbon footprint.

Emissions related to the processing and end-of-life of sold products

• Due to the large quantities of aluminium used throughout the value chain by the Aluk various entities, emissions relating to the processing and the end-of-life of sold products represent the second-largest source of GHG emissions.

Aluk direct operations (scopes 1 & 2) account for a very small proportion of emissions.

 With 5% of total emissions, emissions from scopes 1 & 2 are marginal. However, Aluk has more direct leverage over these emissions, and the associated reduction targets to be set must be ambitious (as part of an SBTi approach).

Principal areas for improvement and continuity in the Carbon Footprint

- 1. Maintain strong relationships with suppliers to ensure qualitative data collection for raw materials purchases
 - Regularly request potentially updated EPDs from suppliers.
 - Potentially improve data collection for purchased accessories, with the identification of sub-categories of accessories for which it would be possible to collect physical data (weight, material, etc.).

2. Collect maintenance records

• Collect air-conditioning maintenance data for the all sites, water bills and waste data.

3. Monitor employee travel

- Monitor employee business travel (operated and non operated plane, train...).
- Regularly monitor home-to-work journeys made by employees.



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Why start your company's low-carbon transition now?



Doing your part in a global emergency

European-scale objectives :

- -55% by 2030 compared to 1990
- Carbon neutrality by 2050

Paris agreement objectives for France :

- -40% emissions by 2030 compared to 1990 ⇒ figure to be revised to align with European objectives
- Carbon neutrality by 2050

Reducing costs > Energy efficiency > Process improvement





Responding to

customer requests

> B2B: calls for tender, referencing, Ecovadis, etc. > B2C: requests for transparency on impact

Take care of your brand and your employer brand

> 90% of consumers want brands that are committed
> 2/3 of candidates are aware of the company's commitment



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Respect and anticipate regulations

> Generalisation of carbon audits> Increasingly demanding sectoral regulations

Improve your



> Requests for carbon reporting from funders

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> Subsidised loans for committed companies





Overall target simulation – 2030 trajectory

- > ESG steerco needed to further define & track actions (Russell, Paul, Natalia, Helene, Julie)
- It seems realistic to reduce our emissions by 15-20% from 2023 to 2030 (-25% vs 2021 baseline) with the following actions (based on stable revenues)
 - Reduce CO2 Alu profiles in Europe by 30% (40% of our emissions) by 54% vs baseline 2021
 - Reduce CO2 PA thermal breaks in Europe by 48% (4,5% of our emissions) by 54% vs baseline 2021
 - Reduce electricity emissions in Europe by 30% (2% of our emissions)
 - Reduce transport (owned & third party freight) by 15% (2% of our emissions)
 - Limited actions on end of life sold products circularity before 2030 (13% of our emissions)



Overall target simulation – 2030 trajectory

From 12.3 tCO2eq per ton of aluminium sold to 10.8

2024-2026-2030 ALUK GROUP CO2 reduction trajectory



ALUK



Extrusion CO2 content trajectory



Extrusion C02 content trajectory

CO2 footprint reduced by 27% by 2026

ACTIONS TO REACH OUR TRAJECTORY

- Supplier panel rationalization to have access to recycled content through higher volume allocation
- Work better with our internal extruder Anodall towards the 3 T CO2eq target by 2030
- Transition to recycled content through specifications and better order management: negligible extra cost of 0.02€/kg towards recycled content
- Increase the closed loop for scrap collecting by our own suppliers for remelt

10% CO2 footprint reduction from 2020 to 2024

ALUK

Sustainability & circularity initiatives

- Responsible Sourcing Policy
- Environmental Policy
- Electric fleet for leased cars: towards an 80% electric car fleet by 2030 upon contracts renewals
- Transport on purchasing: Sourcing from regional extruders all adhering to our Responsible Sourcing Code of Conduct to reduce transport emissions and ensure ethical practices.
- Design improvement: **Study lightweight** design for further improvement of overall UW of the window and hence energy efficiency: max UW should be under 1.0 W/m2 in triple glazing configurations
- Circularity :
 - Reduce items & simplify disassembly: Use less insulators and polyurethane, avoid glue and silicon, use mechanical connections vs crimping
 - Avoid scrap: Optimize waste to be transformed in recycled content; Transfer stock of unused items within units and retrieve unused stock of material at customers

Conclusion on our roadmap



- At AluK, we know that real sustainability requires transparency, accountability, and a commitment to continuous improvement. That's why we've established a clear, measurable framework to track our environmental impact and drive meaningful progress. Our approach includes:
 - Conducting comprehensive carbon footprint analyses, followed by audits and detailed reporting.
 - Assessing our practices across all scopes (1, 2, and 3) to gain a full picture of our emissions and environmental footprint.
 - Setting SMART (Specific, Measurable, Achievable, Relevant, Time-bound) targets for carbon reduction and operational optimization, aligned with the Paris Agreement.
 - Allocating the right resources financial, human, and technological to support our sustainability goals.
 - Educating and empowering all stakeholders, both internal and external, to take part in the journey.
 - Implementing concrete actions and actively monitoring progress at every step.
 - Measuring our impact regularly to ensure we stay on track and continuously improve.

Thank you.

