Climate and environment

Climate change and energy management

4.3%

a year-on-year decrease in specific intensity of GHG emissions of Power segment

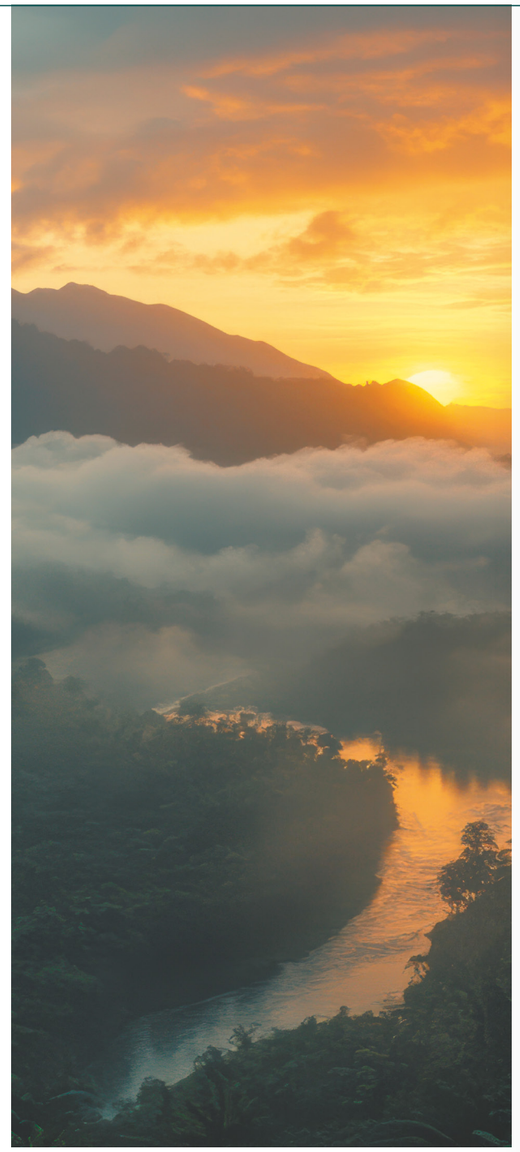
5,300 tonnes

of aluminium has been produced using inert anode technology since launch (910 tonnes in 2024)

- Regulations on Risk Management
- Environmental Policy
- Technical Policy
- Methodology for determining direct GHG emissions during the production of primary aluminium
- Methodology for determining direct GHG emissions during the production of alumina
- Climate strategy

Material topics

- Climate change
- Energy management
- Just energy transition and low-carbon products



Governance

GRI 3-3

The climate change and climate-related risk management system ensures that tasks are resolved effectively and their implementation is closely monitored.

GRI 2-13

Allocation of responsibility for climate change management

Board of Directors
- Oversees the implementation of ESG policies and monitors the achievement of climate targets

Health, Safety, and Environment Committee
- Pursuant to the Regulations on the Committee, supervises the management of climate-related risks and opportunities and provides relevant information to the Board of Directors. The Committee receives quarterly updates regarding developments in international and Russian climate change laws, as well as innovations in this area. Based on this information, it formulates yearly suggestions for adjusting climate objectives and presents them to the Board of Directors for review, if needed

Audit and Risk Committee
- Reviews the Company's risk portfolio, including its alterations and key risk management programmes, particularly concerning climate-related risks, on a quarterly basis

CEO
- The CEO is responsible for implementing strategic climate decisions adopted by the Board of Directors. Assumes the primary responsibility for the operational tasks within this domain. The CEO annually approves internal climate goals of En+ Group and the budget for activities to achieve them
- The CEO participate in operational committees and meetings that address climate-related risks and the strategies for managing them, while also making decisions in this area

Managing Committee on Climate Policy
- It manages the implementation of measures to achieve climate goals

Climate-related risk Department
- Being part of the Sustainable Development Directorate, it reports to the Director for Sustainable Development in the field of climate.
- It provides quarterly updates to the HSE Committee and the Board of Directors regarding the progress of achievement of the climate goals and the progress of activities to manage climate-related risks and opportunities

GRI 2-13

The Board of Directors is responsible for managing energy consumption. The Chief Executive Officer provides energy efficiency reports which are then reviewed by the HSE Committee of the Board of Directors. The Technical Directorate is in charge of overseeing efficiency improvements at the operational level for both En+ Group segments.

The Group has identified climate and energy efficiency KPIs that play a role in the remuneration of managers throughout the Company structure. For example, for the Chief Sustainability Officer, the climate KPI accounts for 5% of the annual bonus. In 2024, this indicator associated with the verification of calculations of greenhouse gas emissions from the reservoirs of the Angara HPP cascade was achieved successfully.

GRI 2-25

The main documents governing the Company's climate change management is the Environmental Policy and the Climate strategy. Energy consumption is also governed by En+ Group's Technical Policy. Aughinish, Alumina Refinery, is recognised with ISO 50001 certification, which verifies the effective deployment of an energy management system.

Development of products with a low carbon footprint

100% of the Metals segment's products meet the criterion of a low carbon footprint product – a carbon footprint of less than 4 t of CO_2e per tonne of aluminium (Scope 1 and 2). The products are sold under the ALLOW brand, with a carbon footprint of 2.3 t of CO_2e per tonne of aluminium (Scope 1 and 2), ALLOW INERTA, aluminium with a carbon footprint of 0.01 t of CO_2e per tonne of aluminium (Scope 1 and 2). The product portfolio is enriched with products involving recycled aluminium scrap (foundry alloys for wheel production, flat ingots for can strip production, cylindrical ingots).

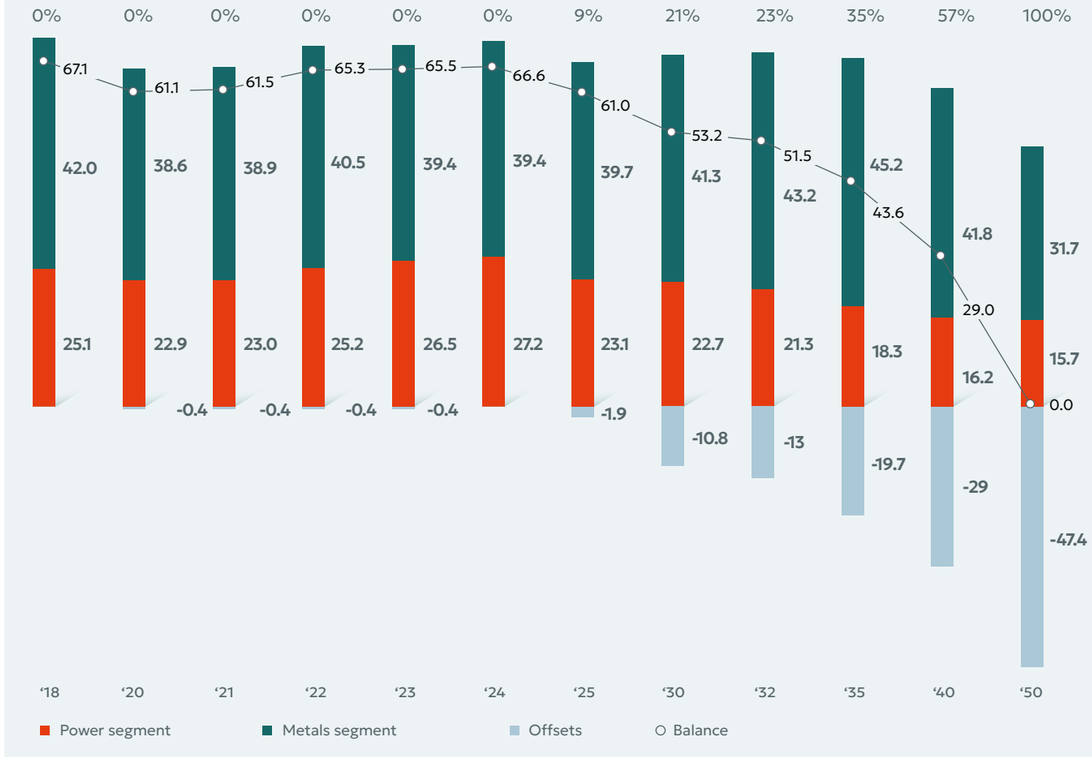
Strategy

GRI 3-3, 14.1.1, SASB EM-MM-110a.2, IF-EU-110a.3

In pursuit of carbon neutrality by 2050, En+ Group has crafted a roadmap for decarbonisation. It sets forth targets for gross greenhouse gas emissions and the activities required to achieve them by segment for each year.

The Company annually publishes its Pathway to Net Zero Progress reports. In November 2024, the Company presented the report to stakeholders at the "Net Zero Day" event.

En+ Group decarbonisation roadmap, mt of CO_2e



GRI 3-3, 305-5

Net Zero Roadmap activities

Metals segment

Alumina production

Improving energy efficiency

All plants of the Alumina Division regularly implement relevant projects.

At the Achinsk Alumina Refinery, a project is underway to capture CO_2 using alkaline bottom-sludge water in scrubbers. The project has been recorded in the Russian carbon unit register.

Progress:

Aluminium production

Upgrading aluminium smelters

The Company's aluminium smelters continue to convert electrolysers to Eco-Soderberg and pre-baked anode technologies.

Progress:

The project to improve the energy efficiency of filtration and calcination shop equipment through the construction and commissioning of a new cyclone furnace at the Bogoslovsky Aluminium Smelter was also included in the Russian register of climate projects.

Neutralisation

Forest aerial protection

The air patrol and forest fire prevention project has been implemented since 2019 and is registered in the Russian register of carbon units.

Rewetting of drained peatlands

Ongoing research in the Leningrad Region is focused on identifying the most appropriate previously drained peatlands for watering purposes.

Power segment

Generation of low-carbon energy

Verification and certification of HPPs

En+ Group obtained a global certification for the verification of greenhouse gas emissions originating from HPP reservoirs. The verification of reservoir emissions allowed the Power segment to complete the registration of four HPPs in the National Low-Carbon Electricity Certification System. HPP qualification is necessary to issue generation attributes confirming the low carbon footprint of the electricity produced and then sell them to companies and individuals interested in reducing their climate impact.

Progress: ☑

HPP modernisation

The Company continues to implement the 'New Energy' Programme.

For more details on the progress of the 'New Energy' programme, see the Investment Programme and modernisation section

Progress:

Construction of new HPPs and WPP

The projects are designed to provide regions with renewable energy.

For more details on the construction of HPPs and WPP, see the Investment Programme and modernisation section

Progress:

Power generation at CHPs

Conversion of CHPs to gas

The government of the Irkutsk Region, together with a gas company, is developing a gasification programme for the region, under which the possibility and conditions for transferring the Group's CHPs to gas fuel are being considered.

Energy efficiency measures

The Company continues to implement energy efficiency projects at the Group's CHPs.

Progress:

Transportation

Hydrogen transport infrastructure

En+ Group is deploying projects aimed at developing hydrogen-fuelled corporate vehicles and related infrastructure, including electrolysers and refuelling stations. In the reporting year, it implemented a project to develop infrastructure for hydrogen passenger transport in Irkutsk and Krasnoyarsk.

Electric vehicle infrastructure

In 2024, En+ Group installed 19 charging stations for electric vehicles in the Irkutsk Region.

Progress:

Risk management

GRI 201-2, 14.2.1, 14.2.2

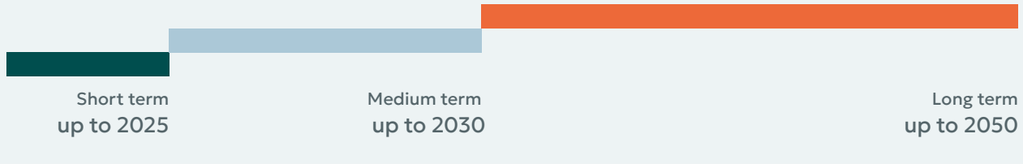
En+ Group regularly identifies, analyses and assesses the materiality of climate-related risks as part of the overall risk management process in accordance with the internal Regulations on Risk Management,the guidance of the IFRS Foundation's International Sustainability Standards Board and the Methodological Recommendations of the Ministry of Economic Development of Russia[1]. The assessment involves the following:

- Analysis of data on climate-related risks and opportunities
- Risk prioritisation using the scenario approach
- Evaluation of how risks align with the general risk management principles of En+ Group and development of the management activities, if necessary

The materiality and priority of climate-related risks are assessed by evaluating how likely they are to happen and the potential effects if they do, while the strategic implications are gauged by examining their financial impacts. En+ Group ranks risks based on their materiality: the most significant of them are characterised by a high or medium likelihood of occurrence, as well as consequences that are of maximum, high, or medium importance. In cases where a risk presents a low chance of happening yet carries the potential for severe repercussions, the Company often transfers it (most often through insurance). En+ Group additionally monitors risks with a low probability of occurrence and insignificant consequences and considers them acceptable.

[1] Order of the Ministry of Economic Development of Russia No. 267 dated 13.05.2021 On the Approval of Methodological Recommendations and Indicators on Adaptation to Climate Change.

En+ Group assesses climate-related risks over three planning horizons, but most of the risks are relevant in the long term.



The assessment uses the following SSP (Shared Socioeconomic Pathways) climate change scenarios:

SSP 126 sustainable scenario: a 1.5–2 °C increase in average temperatures

SSP 245 intermediate scenario: a 2–4 °C increase in average temperatures

SSP 585 active consumption of fossil fuels: a 4–7 °C increase in average temperatures

GRI 201-2, 14.2.1, 14.2.2

The Company takes into account in its business strategy both physical climate-related risks, i.e., those associated with weather events related to climate change, and transition risks, i.e., those caused by the transition to a low-carbon economy.

In the reporting period, the list of transition and physical risks and an assessment of their impact on the Company's operations were updated. Physical risk assessment spans across the entire perimeter of the Group. En+ Group updates the register of physical risks on a quarterly basis and monitors the relevant mitigation measures.

GRI 201-2, 14.2.1, 14.2.2

Opportunities associated with physical risks:

- Construction of facilities generating low-carbon energy
- Cost and fuel and energy savings due to reduced heating season

Opportunities associated with transition risks:

- Adoption of low-carbon technologies driven by their progress and long-term affordability
- Increased sales of products with a low carbon footprint
- Access to new and emerging markets
- Emergence of new economic instruments: RES attribute certificates, carbon units from climate projects, ESG financing instruments

In 2024, En+ Group did not include risks related to energy management in the overall list of risks. Despite this, the Group consistently implements initiatives to increase the efficiency of using fuel and energy resources across its enterprises, thus minimising risks associated with energy consumption and energy efficiency.

Register of material[1] climate-related risks

Physical risks

Business segment	Hazard	Physical climate-related risk	Potential incident / risk event	Short-term impact on the EBIT of the Group's entities	Risk management activities (climate change adaptation measures)
Hydropower generation	Decrease in the overall water intake	Reduced power generation	Reduced revenue in the wholesale electricity and capacity market	up to USD 50 million	• Continuous monitoring of the evolving water and energy situation • Conducting research work on adapting the operating modes of HPPs to climate change • Implementation of an automated information system into the practice of managing the cascade modes, including databases of meteorological, hydrological and water management information, mathematical models of runoff formation and a simulation model of the functioning of the cascade reservoirs
Coal	Heavy rains, severe frost	Flooding due to heavy rains	Lagging behind the production plan and decrease in coal mining revenue	USD 1—2 million	• Creation of coal reserves during a period of favourable weather conditions • When upgrading equipment, giving preference to technical devices and machines operating in a wider temperature range

Transition risks

Business segment	Transition climate-related risk	Potential incident / risk event	Short-term impact on the EBIT of the Group's entities	Risk management activities
Aluminium Division	Introduction of the Carbon Border Adjustment Mechanism in the EU and mirror mechanisms in aluminium export countries	Increase in operating expenses due to carbon charges per tonne of aluminium exported	USD 2—10 million	Implementation of a climate strategy to reduce the carbon footprint of the plants producing aluminium for export
Entire company	Introduction of carbon regulation in Russia	Increase in operating expenses due to carbon tax per tonne of GHG emissions	—	Implementation of the Climate Strategy, investment and operational projects to reduce CO_2 emissions. Interaction with authorities through participation in associations, working groups; comments on and adjustments to low-carbon development bills

Consolidated financial assessment of the climate-related risks impact on En+ operations

up to USD 50 mn per year

Probabilistic financial loss from the realisation of physical climate-related risks in the short term

up to USD 10 mn per year

Probabilistic financial loss from the realisation of transition climate-related risks in the short term

USD 10.2 mn

Actual financial loss from the realisation of physical climate-related risks in 2024

[1] Material climate-related risks are defined as those with a probabilistic financial loss exceeding USD 1 million.

En+ Group takes measures to adapt to climate change in order to avoid negative consequences for business, including the following:

- The Company monitors the condition of production facilities and performs timely repairs to avoid their destruction as a result of climate-related risk factors.
- To prevent downtime as a result of climate-related risks, the Company purchases new equipment capable of operating in harsher climatic conditions and upgrades existing equipment, such as walking excavators.
- To successfully manage climate-related risks, En+ Group tracks data on anticipated weather conditions to take preemptive steps if forecasts worsen, ensuring that workers are informed and safe.
- To reduce the probability of falling behind the production plan for coal mining enterprises, the Company creates reserves of extracted raw materials.

HPP adaptation to climate change

As part of the adaptation of the Angara HPP cascade to climate change, the Company assessed climate-related risks to 2030 and 2050 and prepared runoff forecasts. The assessment used two scenarios (the moderate one with a 3 °C temperature increase by the end of the century, the stressful scenario with a 5 °C warming) and resulted in measures being developed to adapt to climate change.

Risk	Planning horizon	Management activities
Decrease in the annual volume of river flow in the Baikal and Angara basins	After 2030	• Construction of new HPPs • Updating of the rules for using water reservoirs • Development of proposals on HPP operating modes, using an automated system to manage the modes
A higher risk of floods and droughts	After 2030	• Reconstruction of water withdrawal facilities at the Bratsk water reservoir • Forecasting of water inflow to HPP sites
Increased fire hazards	Relevant now	• Reforestation and forest protection measures in the catchment area

Metrics and targets

GRI 3-3, SASB EM-MM-110a.2, IF-EU-110a.3

En+ Group has set the following targets to reduce greenhouse gas emissions and improve energy efficiency.

Targets	Status	Progress made in 2024
A 35% reduction in GHG emissions by 2035 compared to 2018	On track	As a result of upgrading capacity and developing energy-saving measures, emissions were cut by 1% compared to the baseline year
Net Zero by 2050	On track	
Reducing the average carbon intensity of electricity produced and consumed	On track	In the reporting period, the carbon intensity of electricity produced decreased by 4.3% in the Power segment
Increasing the use of energy from alternative sources by 2030	On track	The Company is working on HPP and WPP construction projects
Increasing clean electricity generation by 2.5 TWh, and preventing emissions of over 2.5 mt of CO_2e per year from coal-fired power plants from 2025 onwards	On track	Annual hydropower generation rose by 2.5 TWh, reducing annual emissions of 2.9 mt of CO_2e by partially substituting demand for electricity generated by CHPs

GRI 305-1, 305-2, 305-3, 14.1.5, 14.1.6, 14.1.7, SASB EM-MM-110a.1, IF-EU-110a.1, IF-EU-110a.2

To assess its own climate impact and analyse the effectiveness of measures to achieve the set climate goals, the Company measures Scope 1, 2 and 3 GHG emissions[1]. The market approach is used to estimate Scope 2 emissions.

The measurement includes emissions of such greenhouse gases, as carbon dioxide, methane, perfluorocarbon, and nitrous oxide.

[1] Direct, energy indirect and other indirect GHG emissions.

In 2024, gross GHG emissions of all Scopes increased by 1% compared to the previous reporting period to 66.6 mt of CO_2e due to increase in Group's CHP generation by 3% year-on-year as a result of an increase in energy consumption in the Irkutsk energy system by 9.2% compared to the previous year.

GRI 305-4, 14.1.8

Specific GHG emissions (including carbon dioxide, methane, perfluorocarbon, nitrous oxide) from the electrolysis process in the Metals segment in the reporting period equalled 1.99 tonnes of CO_2e per tonne of aluminium, a 0.5% increase compared to 2023. At the same time, specific emissions of the Power segment dropped by 4.3% due to increase in HPP generation. Overall, energy generation at CHPs of the Power segment is the most carbon-intensive area of En+ Group's operations (37% of the Company's total carbon footprint in 2024). Within the Metals segment, the production of alumina stands out as the primary source of carbon emissions (29.1%).

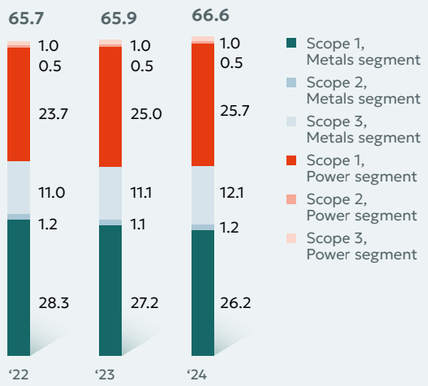
For more details on GHG emissions, see Appendix Additional ESG Data

GRI 302-1, 302-4, GRI 14.1.2, SASB EM-MM-130a.1

The total energy consumption of En+ Group was 346.8 million GJ in the reporting period. This value is 1.7% less than the 2023 indicator. 0.5% of consumed energy came from renewable sources, while 84% of all energy was supplied from renewable sources. Both the Power and Metals segments take measures to improve energy efficiency. In 2024, the energy savings amounted to 8.5 million GJ.

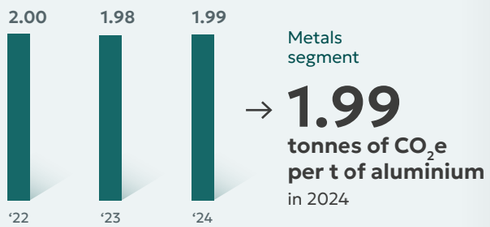
GRI 305-1, 305-2, 305-3, 14.1.5, 14.1.6, 14.1.7, SASB IF-EU-110a.1, IF-EU-110a.2, EM-MM-110a.1

Direct (Scope 1), indirect (Scopes 2 and 3) GHG emissions, mt of CO_2e



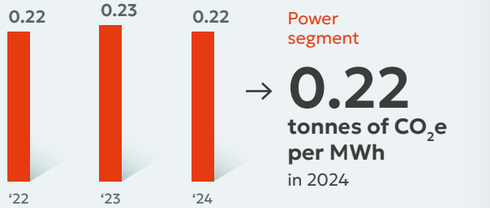
GRI 305-4, 14.1.8

GHG emissions intensity, tonnes of CO_2e per tonne of aluminium



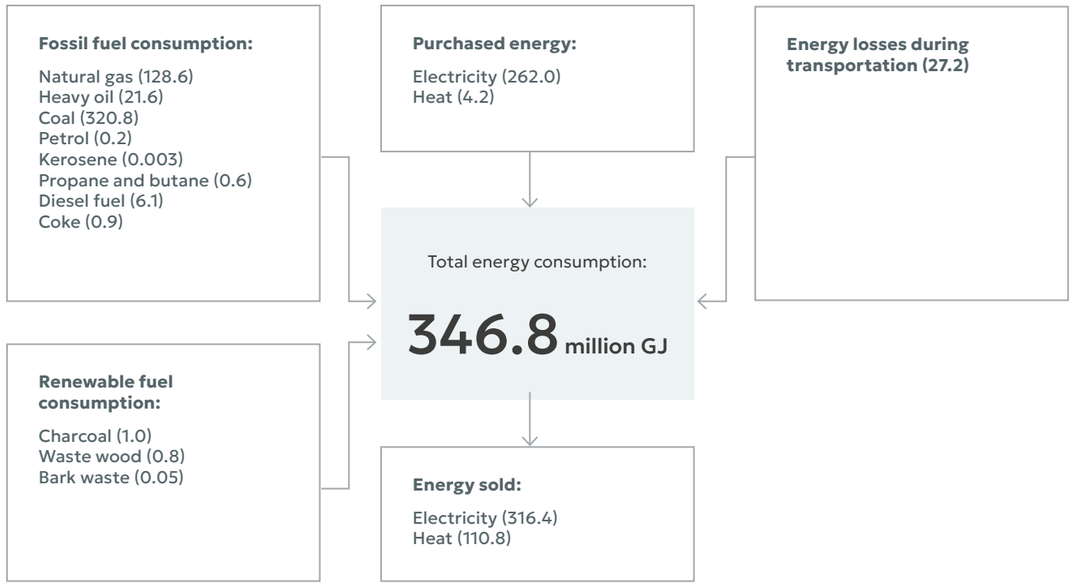
GRI 305-4, 14.1.8

GHG emissions intensity during electrolysis, tonnes of CO_2e per MWh



GRI 302-1, 14.1.2, SASB EM-MM-130a.1

En+ Group's energy balance in 2024



GRI 302-3, GRI 14.1.4

The energy intensity of the Metals segment was 113.6 GJ per tonne of aluminium produced, a 3.2% increase vs. 2023. The energy intensity of the Power segment reached 2.551 in the reporting period, down 4% due to increased output at HPPs and reduced losses.

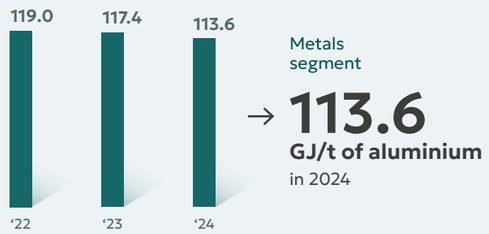
For more details on energy consumption, see Appendix Additional ESG Data

Plans for 2025 and the medium term

- To update a climate strategy.
- To reassess the impact of climate-related risks on the Company's operations.
- To continue implementing the climate strategy.

GRI 302-3, 14.1.4

Energy intensity, GJ/t of aluminium



GRI 302-3, 14.1.4

Energy intensity, GJ/MWh