

ESG KPIs

| E Environmental KPIs | 2019 | 2020 | 2021 |
|--|----------|----------|-----------------|
| Environmental management | | | |
| Percentage of industrial units & RES units with ISO 14001:2015 certification | 84% | 87.5% | 89.3% |
| Environmental expenditures (mio €) ¹ | 61.0 | 71.6 | 82.8 |
| Incidents of non-compliance with environmental laws and regulations and relevant fines | 0 | 0 | 0 |
| Energy & Air emissions | | | |
| Direct GHG emissions (Scope 1 - CO ₂ thousand tons) | 2,798.0 | 2,885.5 | 2,276.0 |
| Indirect GHG emissions (Scope 2 - CO ₂ thousand tons) | 1,841.3 | 1,573.9 | 1,337.9 |
| Other emissions (Scope 3 - CO ₂ thousand tons) ² | N/A | 6,991.4 | 5,612.4 |
| Total NO _x emissions (t) | 1,553.3 | 1,480.0 | 1,363.4 |
| Total SO _x emissions (t) | 3,634.0 | 3,190.1 | 3,214.3 |
| Particulate emissions (t) | 94.3 | 80.5 | 41.8 |
| Fluorine emissions (t) | 258.3 | 262.2 | 210.8 |
| CF ₄ emissions (t) | 11.8 | 13.3 | 10.8 |
| C ₂ F ₆ emissions (t) | 14 | 16 | 1.3 |
| Specific NO _x emissions (t/Tj electricity production) ³ | 0.054 | 0.046 | 0.042 |
| Specific SO _x emissions (t/Tj electricity production) ³ | 0 | 0 | 0 |
| Total energy production (Tj) | 20,816.5 | 21,856.6 | 20,235.6 |
| Energy production from RES (% of total energy production) | 6.5% | 8.6% | 9.7% |
| Total energy consumption (Tj) | 53,353.0 | 54,621.9 | 52,423.7 |
| Electricity consumption (% of total energy consumption) | 19.4% | 18.9% | 20.0% |
| Specific energy consumption in secondary aluminium production (Gj/t of production) | 4.82 | 5.05 | 5.02 |
| Specific product consumption (Tj /Tj of electricity produced) | 1.7 | 1.6 | 1.6 |

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|--|-----------|-----------|------------------|
| Water Management | | | |
| Total water consumption (ML) ⁴ | 6,533.6 | 6,603.4 | 6,950.5 |
| Total water withdrawal (ML) | 170,788.2 | 170,327.5 | 169,080.5 |
| Total water withdrawal from surface waters (ML) | 162,296.5 | 161,162.0 | 159,838.4 |
| Total water withdrawal from groundwater (ML) | 8,223.6 | 8,564.8 | 8,599.2 |
| Total water withdrawal from public water supply companies (ML) | 74.6 | 146.1 | 194.7 |
| Water savings in the production process (% of total water withdrawals) | 3.9% | 3.9% | 4.4% |
| Water consumption / ton of hydrated alumina production (m ³) ASI | 3.24 | 3.61 | 3.37 |
| Water consumption / ton of primary aluminium production (m ³) ASI | 1.23 | 1.37 | 1.29 |
| Circular Economy | | | |
| Total solid waste generation (thousand tons) | 849.1 | 839.4 | 934.1 |
| Total hazardous waste (thousand tons) | 22.8 | 24.0 | 19.5 |
| Total non-hazardous waste (thousand tons) | 826.3 | 815.4 | 914.6 |
| Solid waste reused or recycled (% of total solid waste generated) | 17.8% | 18.6% | 25.0% |
| Solid waste landfilled ⁵ (% of total non-hazardous solid waste generated) | 3.9% | 2.4% | 2.0% |
| Ecological Impacts | | | |
| Rehabilitation percentage of total land areas used in the mining process ASI | 82.3% | 83.3% | 84.3% |
| Raw & Other Materials | | | |
| Total bauxite consumption (t) ASI | 1,871,395 | 1,878,949 | 1,963,041 |
| Total natural gas consumption (mio Nm ³) | 1,133.7 | 1,177.0 | 1,106.8 |

1. Environmental Expenditures: Costs for waste disposal, emissions management, purchase of CO₂ rights, environmental remediation and costs for overall prevention and environmental management.
 2. The calculation of Scope 3 emissions is based on the GHG Protocol.
 3. Includes the emissions and electricity production of the Power & Gas BU.
 4. The difference between the total quantity of water withdrawals and the total quantity of water discharges.
 5. Includes the emissions and electricity production of the Power & Gas BU.