

Chalibria 

Carbon neutral steel
by AFV Beltrame Group

Current situation

AFV Beltrame Group's ambition is to become a leading player of sustainable steel: making production processes more sustainable are on top of companies' agenda and climate change, particularly for steel producers, is one of the main challenges.

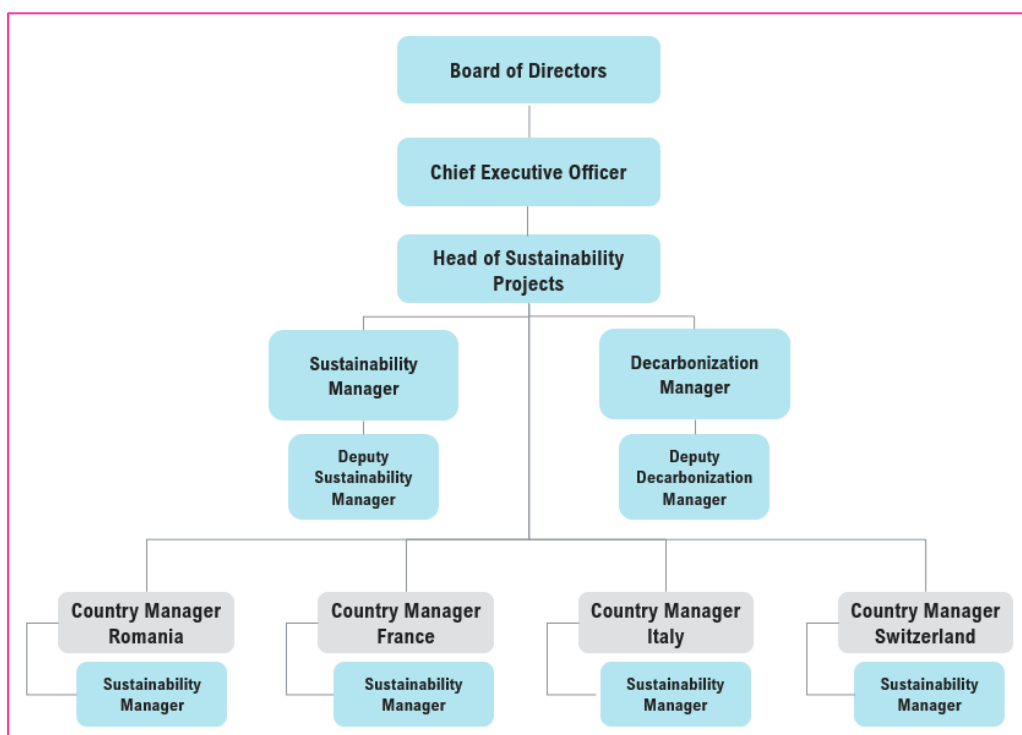
AFV Beltrame Group based core aspects of its strategy on sustainability pillars.

Best management practices, although necessary, are not enough because a credible, transparent, knowledgeable and holistic approach, addressing all Environmental Social and Governance (ESG) aspects, is needed. This approach is based on shared values with stakeholders.

Sustainability for AFV Beltrame Group is developed in close relationship with the context in which the Group operates, involving all stakeholders, with respect to their expectations and needs, starting with the human capital represented by employees.

The Group is committed on a daily basis to involve all the stakeholders on the value chain (shareholders and investors, employees, customers, governments, suppliers, local communities) to ensure a sustainable development. To make this a reality, the Group has an organizational structure that centrally monitors and coordinates the company's commitment to sustainability, define its strategy and validates projects managed by local operating structures.

AFV Beltrame Group organizational structure: focus on Sustainability



Within the more general framework of integrating sustainability into the Group business and strategy, five main pillars have been identified towards which effort should be focused and targets have been defined:

1 Safety

We have initiated a program of concrete actions aimed at reducing occupational accidents and illnesses. A focus on people that we consider fundamental for AFV Beltrame Group's growth. This includes the SHARP project, which aims to investigate the genesis of accidents (the number of which is in line with industry statistics) and to raise awareness among workers in order to ensure health and safety working activities.

2 Energy consumption

Since the beginning, AFV Beltrame Group has invested in reducing energy consumption: efficiency and reducing production costs has always been a driver for the AFV Beltrame Group to be competitive over the years. The Group wants to continue along this path and has enhanced its production efficiency strategy by modernizing its gas reheating furnaces, designing and implementing heat recovery systems and installing digital control systems

3 Water

We are constantly working to reduce water consumption. We have improved the cooling systems for less water use and optimized the stormwater treatment system.

4 CO₂ emissions

We have defined the Decarbonization Plan to 2030 for Scope 1 and 2 with a 40% emission reduction compared to a 2015 baseline. The Decarbonization Plan is the focus of our environmental corporate strategy.

5 Waste

We have set up a circular economy project with specific measures to improve the quality of scrap and other raw materials as well as to promote the reuse of materials involved in the production process. In line with the 'AWaRe' (All Waste Recovered) project, we aim to optimize the recovery of waste produced at the sites. By 2021, we will have recycled and valorized 90% of the waste produced by the Group.

Media attention and the new regulatory environment have provided new development opportunities: **reduce CO₂ emissions today is the key to access tomorrow's business environment, in which companies are asked to be increasingly sustainable to remain competitive.**

On CO₂ emissions, AFV Beltrame Group followed a structured and responsible approach based on three fundamental steps:

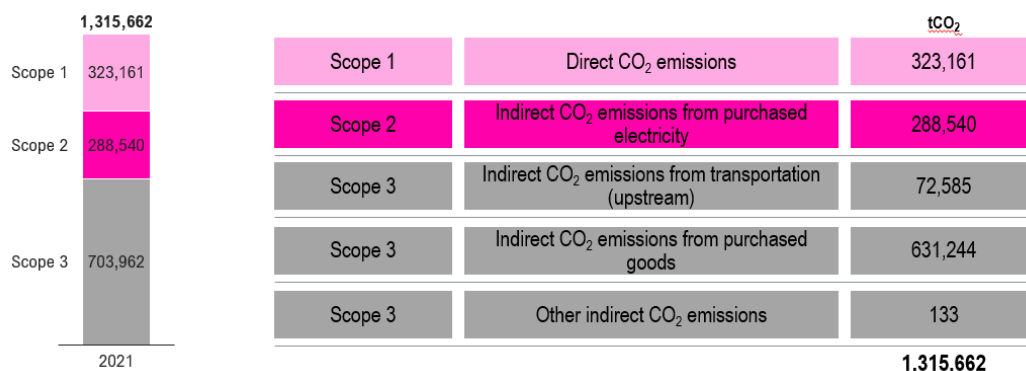


Measure: you can't manage what you have not measured, for this reason we completed the measurement of the CO₂ emissions generated by the value chain "cradle-to-gate"

The Group measures and monitors the CO₂ emissions generated by the value chain "cradle-to-gate": Scope 1, 2 and 3 (upstream)

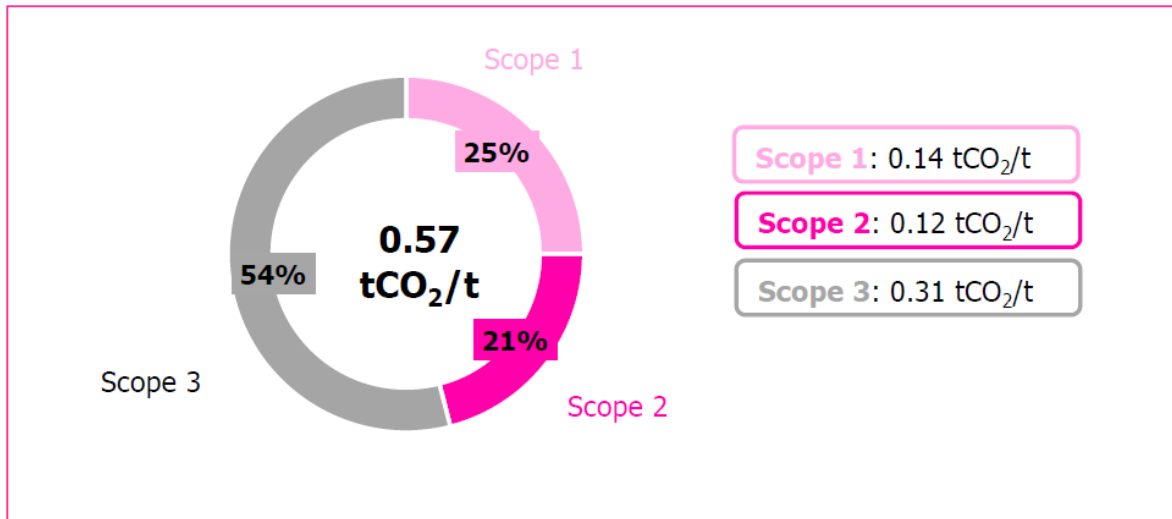
When it comes to calculate emissions, there are two main options for the steel industry: absolute value of emissions and CO₂ intensity, the latter expressed in tons of CO₂ per ton of steel finished product.

CO₂ absolute value: Scope 1+2+3 (upstream) emissions for steel mill and rolling mill [2021; tCO₂]



Note: AFV Beltrame Group Scope 1 includes the following emissions outside ETS scheme: fuel combustion from company cars and fugitive emissions; AFV Beltrame Group Scope 2 is calculated applying market-based approach and using 2021 AIB residual mix factors per country, for Switzerland the value is zero because all electricity purchased in 2021 was covered by Guarantees of Origin.

CO₂ intensity: Scope 1+2+3 (upstream) emissions for steel mill and rolling mill [2021; tCO₂/ t finished product steel].



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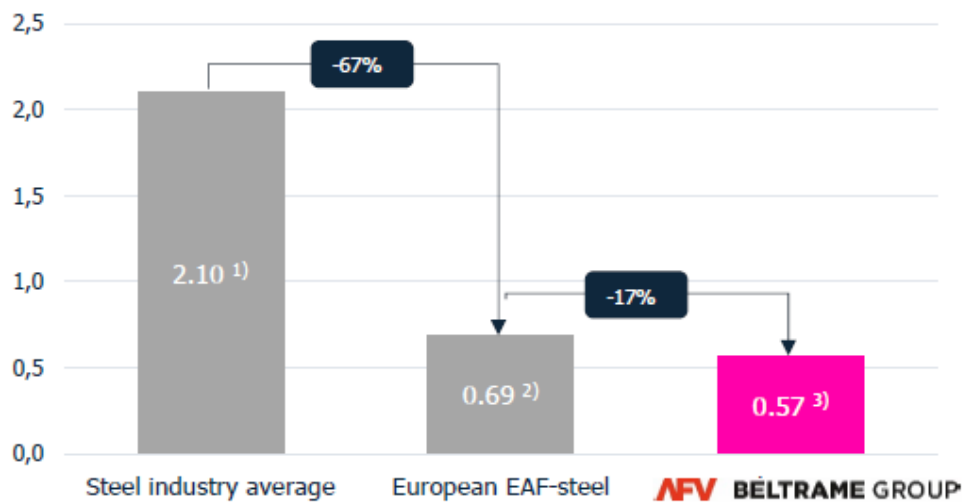
AFV Beltrame Group invested time and effort in calculating its carbon footprint, believing that all sources which end up into the final product should be considered for analysis and measurement purposes. For this reason, **AFV Beltrame Group prefers to look at Scope 1 + 2 +3 (upstream) for both melting shop and rolling mill: for one ton of finished product, AFV Beltrame Group's average CO₂ emissions are 0.57 tCO₂.**

AFV Beltrame Group Scope 1 + 2 + 3 (upstream) CO₂ emissions are validated by the Independent Certification Body RINA in accordance to ISO14064-1.

The measurement activity has been a challenging process, but AFV Beltrame Group is proud to have calculated its “cradle-to-gate” carbon footprint and to provide this most comprehensive indicator to stakeholders.

Analyzing the steelmaking industry benchmark, AFV Beltrame Group emissions' result below both the steelmaking industry emission and the European emission average for electric furnace steel (EAF steel), the same production technology as AFV Beltrame Group.

Industry average Scope 1+2+3 (upstream) emissions: melting shop + rolling mill [tCO₂/ t of finished product; 2021]



- 1) World Steel Association CO₂ emission average (Scope 1+2+3 melting shop) integrated with external database CO₂ emission average for Scope 1+2+3 rolling mill
- 2) European Commission benchmark value '21-'25 for EAF carbon steel (Scope 1+2 melting shop) integrated with elaborations based on external database inputs for Scope 1+2+3 rolling mill and Scope 3 melting shop
- 3) AFV Beltrame Group Scope 1+2+3 melting shop and rolling mill calculated applying market-based approach for Scope 2

For the measurement analysis, the internal AFV Beltrame Group's team was supported by the external consultancy firms Alperia and Roland Berger. Alperia acted as technical consultant and Roland Berger as strategic consultant.

What is our commitment

Despite the lower CO₂ emissions, AFV Beltrame Group is committed to further reduce its carbon footprint.

Identify actions: we defined tangible actions to reduce our CO₂ emissions.

Whit this purpose, a lot of effort is required and therefore AFV Beltrame Group has defined a CO₂ reduction strategy for all the companies in the Group, based on 4 drivers:

Number of projects included in the Decarbonization Plan by typology [2021]

	AFV Beltrame Group
Production efficiency	23
Circular economy practices	5
Green energy sourcing	14
Hydrogen solutions	3
	45

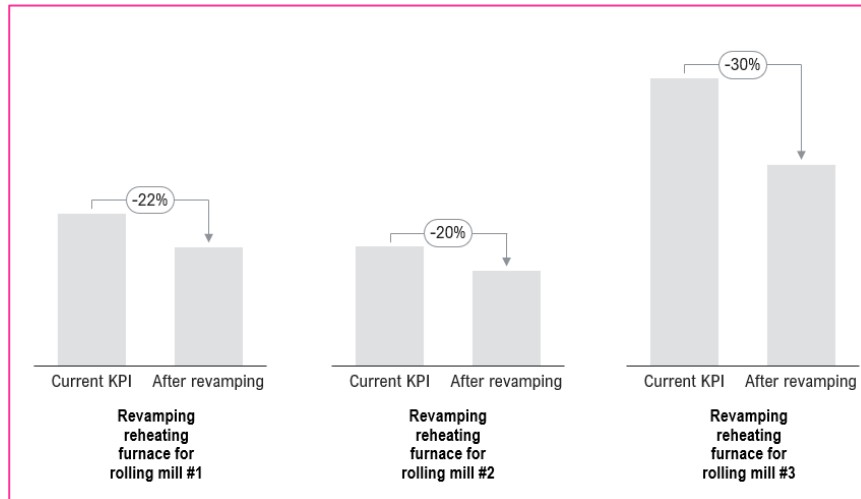
A) **Production efficiency:** projects aimed at **improving the efficiency** of production processes with several core projects for the Group:

- revamping of main reheating furnaces for rolling mills
- usage of digital control systems for melting shops and rolling mill furnaces
- increase the inlet temperatures of the billets
- enhance operating procedures
- ...

Update and revamp the equipment (e.g. reheating furnaces) has always been a priority for AFV Beltrame Group to reduce energy consumption and production costs. Several projects have been already approved to further reduce the gas

consumption KPI per ton of steel produced and reduce consequently Scope 1 emissions.

Examples of some projects on Production efficiency: saving obtained with revamping of main reheating furnaces [m³ natural gas used per ton of steel produced; current KPI: 2021]

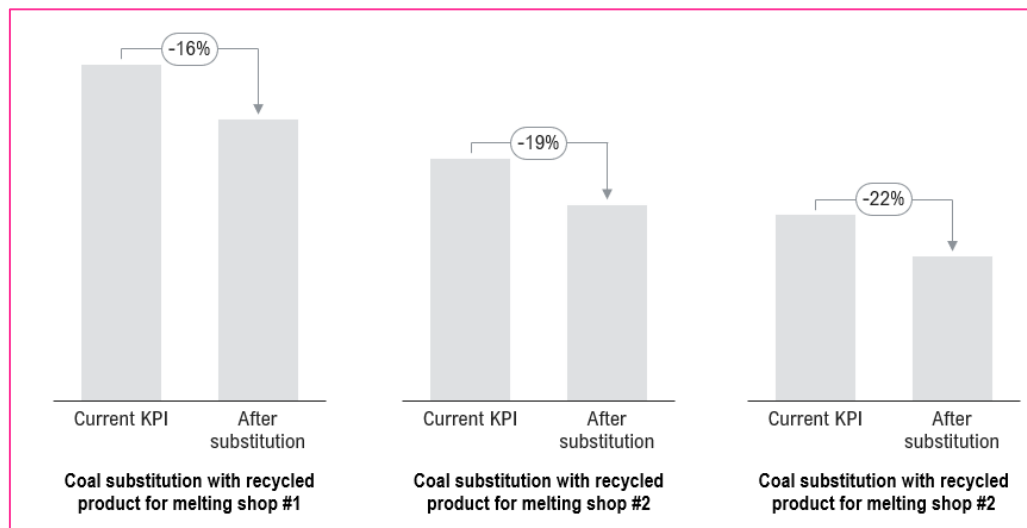


B) Circular economy practices: measures to improve the **quality of scrap** and other **raw materials** such the re-use of production process waste (steel mill and refinery slag is used internally or undergoes certified aggregate production processes, creating the conditions to meet green procurement requirements in the construction supply chain) and the replacement of raw materials with recycled materials (e.g., recycled product used as polymer to replace coal).

These applications have enabled the Group to consolidate its path of reducing the waste and by-products sent to landfills, favoring waste recovery, covering today approximately 90% of the total.

AFV Beltrame Group's production is fully scrap-based, with over 97% of all iron and alloys used as input material being recycled.

Examples of some projects on Circular economy practices: saving obtained with the substitution of coal with recycled product [ton of coal used per ton of steel produced; current KPI: 2021]



C) **Green energy sourcing:** the Group is planning investments to reach two ambitious targets by 2030: **40% of renewable energy on total supply for AFV Acciaierie Beltrame (Italy) and Donalam (Romania)** and significantly increase of the quantity of fossil-free energy sources for LME (France) and SG (Switzerland)

For this reason, the Group identified projects related to the sourcing of **renewable electricity**, firstly through the construction of renewable energy plants for self-consumption and then through power-purchase-agreements (PPAs).

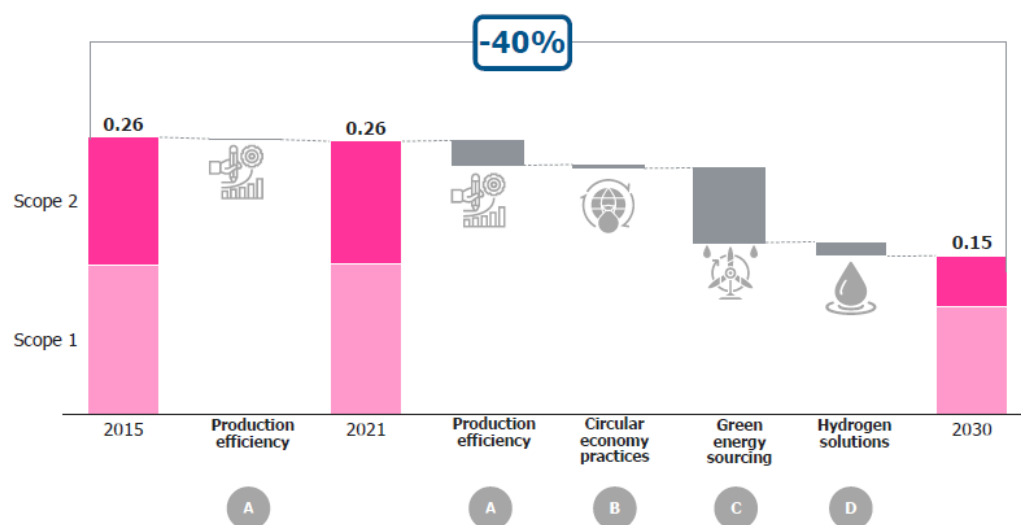
Among main initiatives, the Group set up 'Renewability' in 2022, a Community of Renewable Energy Consumers; the Consortium Company thus created aims to invest in the construction of generation plants from solar power and supply the electricity produced by the plants to each member.

In addition to contributing to the growth of renewables in Italy, the Renewability model allows companies to cope against rising energy costs due to international geopolitical instabilities. Community members have embraced a project that allows them to free themselves from energy market prices.

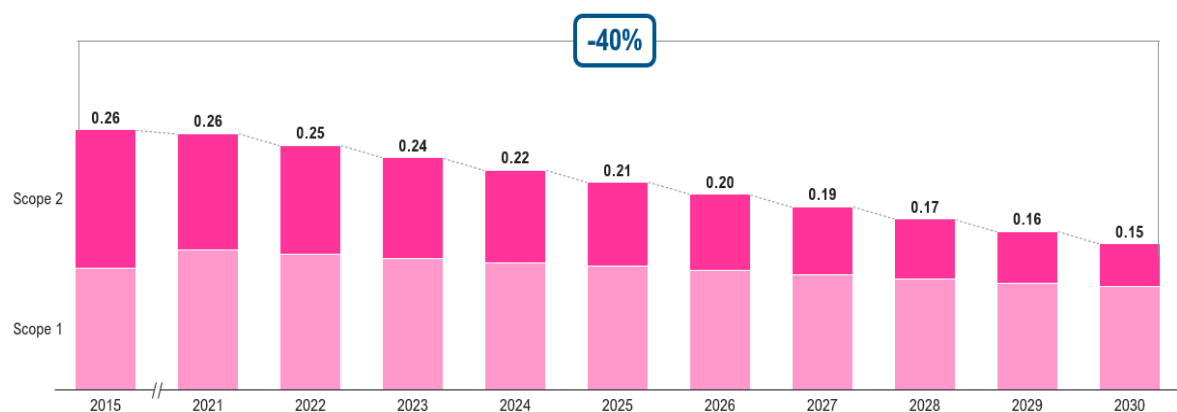
D) **Hydrogen solutions:** AFV Beltrame Group is also preparing for developments in the use of green hydrogen as a fuel. The AFV Beltrame Group's furnaces are already prepared to use hydrogen as a fuel in a mix with natural gas. Potential usage of green hydrogen are long term opportunities (from 2026 onwards) involving a fueling mix (80% natural gas and 20% green hydrogen) and the support also of induction furnaces.

Reduce: through these initiatives, CO₂ emissions, already among the lowest in the industry, will be further reduced. The Group has defined a **Decarbonization Plan** aiming at reducing Scope 1 and 2 emissions of 40% by 2030 compared to 2015 levels.

Scope 1+2 steel mill and rolling mill emission reduction plan for AFV Beltrame Group [tCO₂/ t finished steel; 2015-2030]



Scope 1+2 emission reduction roadmap for AFV Beltrame Group [tCO₂/ t finished steel; 2015-2030]



As for Scope 3 emissions, AFV Beltrame Group has successfully fulfilled emission measurement. The next steps include the engagement of suppliers, mainly those related to logistics and supply chain, to raise awareness around emission reduction issues and the identification, together with stakeholders within the value chain, of initiatives aimed at emissions reduction. It is planned to set a quantitative reduction target also for Scope 3 as soon as more information is available from our supply chain.

To identify the actions and the reduction target definition, the internal AFV Beltrame Group's team was supported by the external consultancy firm Roland Berger

What we offer: Chalibria, carbon neutral steel now

As we strive to implement projects that enable us to reduce CO₂ emissions, the Group has decided to launch its own carbon neutral steel, Chalibria.

Chalibria, the carbon neutral steel of AFV Beltrame Group for Scope 1+2+3 (upstream) emissions in the "cradle-to-gate" value chain.

The calculation of the carbon footprint for Scope 1+2+3 (upstream) is verified by the Independent Certification Body RINA in accordance to ISO14064-1 (Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals).

AFV Beltrame Group uses "DIAS" (Data Integrity Audit Services platform), the RINA's digital platform that supports audit activities: **this platform ensures the traceability, integrity and transparency of data along the value chain "cradle-to-gate" for Chalibria, carbon neutral steel.**

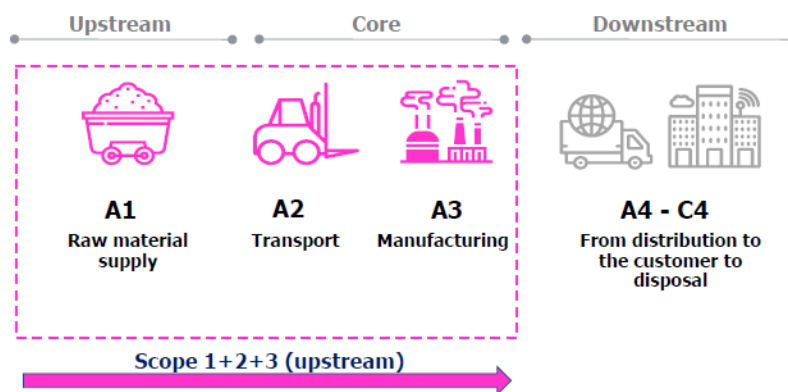
The development of the DIAS platform for AFV Beltrame Group was followed by RINA consultants with the involvement of internal AFV Beltrame Group teams.

AFV Beltrame Group quantifies emissions at plant level for Scope 1+2+3 (upstream) for melting shop, rolling mills and upstream transportations (incl. both external and internal transportations) through the platform. This allows to have specific CO₂ emissions KPIs for the value chain "cradle-to-gate" for all the plants.

The approach used for Chalibria products ensures more than 80% coverage of CO₂ emissions from the entire product life cycle (“cradle-to-grave”)¹.

We also quantified and, if not available, we estimated the downstream product emissions, and this contribution was found to be less than 20% of the total emitted at the AFV Beltrame Group level.

Chalibria carbon neutrality boundaries



For these emissions, which the Group is not yet able to reduce through the projects included in the Decarbonization Plan, Chalibria's carbon neutrality is achieved by offsetting CO₂ emissions through the purchase of carbon credits on a voluntary basis, in line with the PAS2060 (Specification for the demonstration of Carbon Neutrality) certification.

AFV Beltrame Group's commitment, through the investments of the Decarbonization Plan, will enable the reduction of the value chain emissions "cradle-to-gate" and consequently a decreasing purchase of carbon credits.

Carbon neutrality will also be attested through a certificate issued by RINA in accordance with the international standards and sent to all our customers who purchase Chalibria.

¹ Exclusions from Chalibria boundaries:

- The downstream transport from AFV Beltrame gate to customer was calculated in the ISO14064-1 inventory.
- The phases of transport from AFV Beltrame customer to end users and those relating to the end-of-life ones of the product were estimated for the calculation from a cradle-to-grave perspective but excluded from the inventory according to ISO 14064-1 as they are not very significant and have a high degree of uncertainty on the activity data.

In line with international greenhouse gas standards, Chalibria allows our customers to reduce indirect emissions and report an equivalent reduction in the category of goods purchased for Scope 3.

Which carbon credits do we use?

Voluntary carbon credits are certificates that can be purchased by companies to offset CO₂ emissions generated by their activities. These credits are generated by projects that help to remove or avoid the amount of CO₂ in the atmosphere.

AFV Beltrame Group only uses carbon credits² verified by international standards (e.g., VCS (Verified Carbon Standard), Gold Standard) which ensure that double counting is avoided.

In the certificate sent to our customers, attesting Chalibria's carbon neutrality, is stated the reference project of the carbon credits used for the offsetting, along with carbon credits' verification conformity issued by RINA in accordance to PAS2060.

² The purchase of carbon credits is classified according to different price classes: A) below 10 €/tCO₂; B) between 10 and 40 €/tCO₂ and C) above 40 €/tCO₂. The project purchased by AFV Beltrame Group is in class A). All purchase and retire transactions are recorded and kept by AFV Beltrame Group as evidence in case of audits.