

Pathways to Decarbonization:  
strategies and insights

2023

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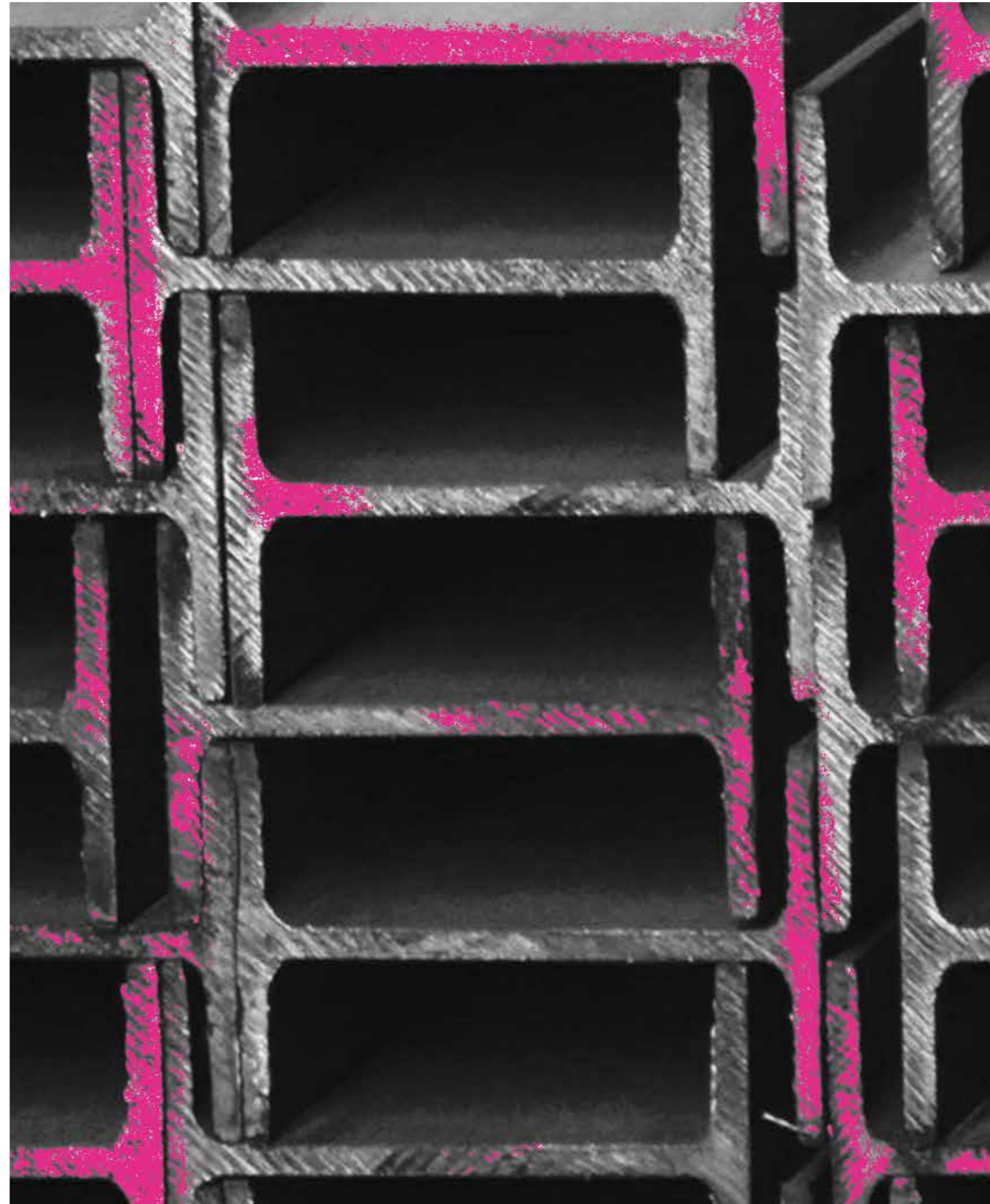
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# Overview Chalibria

## Launch of Chalibria 2022

**Making production processes more sustainable is a priority on the agendas of all companies. This not only because the European Community has defined urgency and the scope of action, approving regulations that are becoming more and more stringent and to which we are called upon to adapt but, above all, so as not to miss an opportunity for innovation and competitiveness. As an industry we are, therefore called upon to be accelerators and drivers of change to promote the ongoing transformation and to be, at the same time, among its protagonists.**

In order to achieve the European objectives, decarbonisation emerges as a priority, that's why specific plans are being implemented at both public and private level.

In line with this, AFV Beltrame Group has also defined, as the core of its sustainable strategy, a decarbonisation plan and a precise roadmap to reduce its CO<sub>2</sub> emissions by 2030.

Within the decarbonisation plan, four activity drivers have been identified:

### **A) Production efficiency:**

the Group strengthened its strategy on production efficiency through the installation of new gas furnaces for heating blooms, equipped with cutting-edge technologies in terms of energy optimisation and containment of emissions, but also with the design and implementation of heat recovery systems and the installation of digital control systems.

### **B) Circular economy:**

several projects are underway in all the plants of the Group to improve the quality of scrap and other raw materials, reuse waste from the production process (refining slag from the steel mill find internal uses or are subjected to certified processes of aggregate production, creating the conditions to meet the demands of green procurement in the construction supply chain replacing raw materials such as gravel or sand) and in the substitution of raw materials with recycled materials (e.g. recycled polymer or tyres, at the end of their useful life, used to replace coal, thus favouring the recycling of products otherwise destined for landfill). These applications have enabled the Group to consolidate the path of reduction of waste and by-products sent to landfill, favouring their recovery in cycles inside or outside the factories, covering today about 90% of their total.

### **C) Green energy supply:**

the Group wants to increase the use of green energy through the development of renewable energy for self-consumption and renewable energy supply contracts through "Power Purchase Agreements".

Among the main initiatives in 2022 was established, together with other two companies, "Renewability" a consortium of consumers of renewable energy. The consortium created has the objective of investing in the construction of generation plants from renewable sources and to supply the electricity produced by the plants to each member. In 2022, three plants were purchased in Abruzzo and two in Lazio, for a total of 24 MW, while in 2023 the investment continued with the purchase of a second batch of photovoltaic systems in Sicily of 4 MW.

### **D) Hydrogen projects:**

AFV Beltrame Group's furnaces are already prepared to be able to use hydrogen as a fuel in a mix with natural gas.



To achieve the European objectives, decarbonisation emerges as a priority

## Overview Chalibria

**Alongside the structured projects for the decarbonisation plan, the Group measured its CO<sub>2</sub> emissions with the support of two independent external consulting companies. What emerged is that the Beltrame's steel has a carbon footprint below the international and European sector averages, standing at 560 kg CO<sub>2</sub> per tonne of rolled steel (Scope 1,2 and 3 upstream), about 75% less than the emissions of the global steel industry and about 20% less than the European average of emissions from electric furnace steel.**

All this led, in autumn 2022, to the launch of the new "Chalibria" brand, the carbon neutral steel related to Scope 1+2+3 (upstream) emissions according to the cradle-to-gate criteria.

These emissions have been certified by RINA in accordance to ISO 14064-1. Thanks to RINA's digital platform, DIAS (Data Integrity Audit Services platform) traceability, integrity and transparency of data along the entire value chain are confirmed.

For emissions which the Group is not yet able to reduce yet, the carbon neutrality is achieved by offsetting them with the purchase of carbon credits generated by projects that contribute to removing or reducing the amount of CO<sub>2</sub> in the atmosphere. The carbon neutrality pathway is validated annually by RINA, according to the standard PAS 2060 internationally recognised.



The ecological transition must be supported, from an **economic-financial** and regulatory point of view, but also, and above all, from a cultural perspective in order to translate it into a key opportunity for a **true and inclusive transformation**

## European Tour 2023

### Chalibria's carbon neutral steel has been a protagonist of a European tour.

Paris, Bern, Garda Lake and Bucharest were the locations which hosted the events dedicated to customers and stakeholders at which the new brand was presented. At each event a round table discussion was organised with experts from different professional background, members of institutions, representatives of the economic world, both public and private, all united by their in-depth knowledge of the issues of sustainability and decarbonization. All of them offered a participative discussion on these topics with a detailed focus on the ongoing evolution of the steel sector.



### “Steel: the NEW frontiers of sustainability” 28<sup>th</sup> March, Brescia, Italy

Round table speakers: Carlo Carraro, Rector Emeritus and Professor of Environmental Economics Ca' Foscari University of Venice, vice president of the UN IPCC Working Group III; Alessandra Ricci, CEO SACE; Regina Corradini D'Arienzo, CEO Simest; Giovanni Baroni, vice president of Confindustria and president of Piccola Industria of Confindustria; and Marco Mari, president Green Building Council Italia; Raffaele Ruella, Managing Director AFV Beltrame Group and Carlo Beltrame, CEO France and Romania and Group Chief Business Development Officer AFV Beltrame Group. The debate was moderated by Sebastiano Barisoni deputy executive director Radio 24 - Il Sole 24 Ore.



### “Acier: les nouvelles frontières de la durabilité” 9<sup>th</sup> February, Paris, France

Round table speakers: Bruno Jacquemin, Managing Director of A3M and permanent delegate of CSF Mine et Métallurgie, Anaïs Voy-Gillis, Associate Director of June Partners and research associate at the IAE in Poitiers, Ambroise Lecat, Senior Partner at Roland Berger, and Carlo Beltrame, CEO France and Romania AFV Beltrame Group Beltrame Group and Group Chief Business Development Officer. The meeting was moderated by Capucine GRABY, journalist and entrepreneur.



### “Stahl: die neuen Grenzen der Nachhaltigkeit” 16<sup>th</sup> March, Berna, Switzerland

Round table speakers: Brigitte Wyss, Head of the Department of Economic Affairs of Canton of Solothurn, Cristina Schaffner, Director of the Swiss Building Industry Association, Stephan Geiger, Head of Sustainable Finance of EY Switzerland, and Daniel Egger, Head of Project Development at Neustark, Carlo Beltrame, CEO France and Romania, and Alain Creteur, Group CEO AFV Beltrame Group and CEO Sthal Gerlafingen. Nadine Brännimann moderated the discussion.



### Building the Future on Sustainable Firsts 27<sup>th</sup> April, Bucharest, Romania

The streamed event brought together key stakeholders institutional stakeholders, high-level government leaders, diplomats, representatives of financial institutions, academia (University of Architecture and Construction) and the business community - manufacturers, entrepreneurs, builders, architects and other relevant institutions.

The round table was attended by:

- Cristian Buşoi, MEP, Chairman of the Committee on Industry, Research and Energy of the European Parliament;
- Florin Spătaru, Romanian Minister of Economy;
- Sebastian Burduja, Romanian Minister of Research, Innovation and Digitisation;
- Mihai Diaconu, Secretary of State of the Ministry of Finance;
- Ileana Luminiţa Bălău, Director - Department for Strategies, sustainable programmes and projects, Department for Sustainable Development sustainable development, Romanian Government;
- Lara Tassan Zanin, Head of the EIB Group Office in Romania;
- Lucian Dumbrăvieanu, Principal Banker, Manufacturing and Services, Central and Southeastern Europe, EBRD;
- Arh. Ştefan Ghenciulescu, Editor-in-Chief, Zeppelin Magazine;
- Prof. Ing. Arh. Leo Van Broeck, Faculty of Engineering Sciences of KU Leuven - Department of Architecture;
- Arh. Raluca Munteanu, owner of the firm Arhi-Mede;
- Arh. Adrian Pop, architect, manager and sustainability consultant, architecture firm ADP;
- Carlo Beltrame, CEO France and Romania, Group Chief Business Development Officer AFV Beltrame Group.



### Made in Steel

9-10-11 maggio 2023, Fiera Milano Rho, Milano

Made in Steel is the International Conference & Exhibition dedicated to the steel supply chain. A showcase exhibition and at the same time a cultural centre that, through conferences, forums and round tables, aims to promote the flow and transversality of knowledge, indispensable elements for the competitiveness of companies. The tenth edition took place on 9-10-11 May 2023 at Fiera Milano Rho in Milan. Usually, during the fair, the Made in Steel Awards are assigned and this year, for first time, was created a new category: "the Honorable Mention for Sustainability", dedicated to the exhibitor who best managed the themes of sustainability and circular economy at the hearth of the booth. To assign it the jury took into account both the stand design choices (the selection of recycled and recyclable materials) as well as the construction of the narrative and the experience offered to visitors. The Honorable Mention for Sustainability was awarded to AFV Beltrame Group: "for having given the stand the structure of a contemporary "hortus conclusus", a relaxing booth where social relations, business and attention to the environment can find their space. It is also the stand with the greatest visual impact among those of the companies that applied for the Award".



## Made in Steel 2023 AFV Beltrame Group's booth: winner of the category Honorable Mention for Sustainability





### The Central & Eastern European Forum 10<sup>th</sup>-11<sup>th</sup> January, Wien, Austria

The CEE Forum is the platform that brings together in the same event, the top representatives of the main multilateral bodies involved - EBRD, IFC, EIB, IMF, European Commission and ESM - on the future of this important region.

For 28 years, it has brought together issuers, investors, intermediaries and decision-makers and policymakers from the CEE and beyond, to network, gain valuable knowledge and help set the agenda for the year to come. The 2023 CEE Forum addressed some of the most pressing issues for participants in CEE markets:

- energy security: the costs of keeping the lights on;
- reconstruction of Ukraine;
- crisis playbook: an overview of the regional banking sector;
- monetary policy: fiscal accelerator; monetary disruption conflict management;
- rate de-synchronisation and its implications for the EEC.



### Decarb Connect Europe 12<sup>nd</sup>-14<sup>th</sup> June, Antwerp, Belgium

Decarb Connect's mission, carried out through events and networking, is to accelerate decarbonisation by working with leaders in the most energy-intensive sectors and with those who have complex challenges to solve. Decarb Connect offers open access webinars and workshops, industry reports, podcasts and more. The system intermediates access to hard-to-reach information and facilitates collaborations, with the aim of accelerating decarbonisation in "hard-to-abate" sectors.



### CEE Sustainable Finance Summit 15<sup>th</sup>-19<sup>th</sup> May, Prague, Czech Republic

The CEE Sustainable Finance Summit aims to ignite the debate on sustainable finance and the opportunities it offers Central and Eastern Europe.

The summit is hosted by like-minded organisations from the region and invites financial sector professionals policy makers and key stakeholders from the business world, politics and civil society to participate in the discussion on how to unlock the potential of sustainable finance. The summit also serves as a space for networking and the exchange of experiences between different countries in the region.



### Assofermet: Beltrame talks about its decarbonisation process at the autumn conference 5<sup>th</sup>-6<sup>th</sup> October, Rome, Italy

ASSOFERMET is the national association of entrepreneurs who trade and pre-processing in the sectors of iron and steel, non-ferrous metals, ferrous scrap, hardware and related, divided into four national unions: **Assofermet Steels; Assofermet Scrap; Assofermet Metals; Assofermet Ironmongery.**

AFV Beltrame Group participated in the Autumn Conference: "Going green: the wave that invests companies and changes paradigms", in October in Rome. Sustainability, steelmaking, circular economy and how the major global trends impact the Italian and international economy the topics covered. Enrico Fornelli, CCO and Giovan Battista Landra, Group Sustainability & Environment Director have told about the path of decarbonisation undertaken by AFV Beltrame Group and the challenges of electric steel furnace.

## GBC Italia

The Green Building Council Italy is a non-profit association whose members include the most competitive companies and the most qualified associations and professional communities operating in the sustainable building segment. **GBC Italia is part of the World GBC**, a network of national GBCs present in more than 70 countries, which represents the world's largest international organisation active in the sustainable construction market. GBC Italy promotes a process of transformation of the Italian construction market through the promotion of third-party certification system and its own protocols certification (the GBC systems) expressly developed for the specificities of the Italian market, whose parameters establish precise criteria for the design and realisation of buildings that are healthy, energy efficient and low environmental impact buildings.

“

To achieve the ambitious 2050 global targets, to face climate change, a synergetic and swift action is essential by all players in the construction sector. The steel sector, fundamental for it, is therefore called upon to a profound transition, starting with from the reduction of its own carbon footprint, aimed at identifying new production methods for a sustainable growth. Joining the Green Building Council Italy therefore represents for us an opportunity in this sense.

Raffaele Ruella, AD e Group CFO.

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To decarbonise the construction's sector the **involvement of the entire supply chain is required**: public authorities, investors, manufacturers of systems and materials, designers and builders.



The AFV Beltrame Group has joined this non-profit association, founded by the world's leading steel players worldwide in the field of electro-steel.

Its aim is contributing to the climate strategy defined within the framework of the 2015 Paris Agreement, establishing a specific standard for the steel industry and supporting its reduction of carbon emissions, with the commitment to achieve a scenario of a global average temperature increase of no more than 1.5°C by 2050.

The GSCC comprises more than 35 international members, representing steel producers, trade associations end users, scrap metal suppliers and non-governmental organisations.

**The Global Steel Climate Council (GSCC) is an international coalition of steel producers and stakeholders, committed to achieving a 1.5°C scenario by 2050 and establishing a global steel standard that leads toward a cleaner future.**

**General framework**

Faced with the need to have a global standard that defines the criteria for uniquely qualifying steel as "green" or "low carbon footprint", several associations support an approach aimed at rewarding the progress made by steel companies in reducing specific emissions. The decreasing trend is linked to the percentage of scrap used in the process, rather than considering its actual carbon footprint, expressed in value relative to the unit of product, which depends on the production cycle that generated it.



These proposals equate, in terms of carbon footprint classification, steel obtained from the primary cycle, which mainly uses natural resources such as iron ore and coal in blast furnaces, with steel produced through the circular process of ferrous scrap re-use in electric furnace (EAF).

Since the specific emissions of blast furnaces are about four times higher than those of the electro-steel process, these approaches (based on the so-called "sliding scales" of scrap use) would allow integrated cycle steel producers to classify steel products as "green" even if they are significantly higher in CO<sub>2</sub> emissions than those of the EAF.

In contrast, GSCC's proposed standard aims at incentivising immediate actions across the steel industry to reduce carbon emissions using currently available technologies, while investing in emerging clean technologies.

The GSCC standard defines carbon intensity reference values for steel products, decreasing over the years, consistent with what is required by the pathway to limit the global temperature increase to 1.5 degrees by 2050, based on known scientific evidence. It also specifies how to calculate the annual reference values used to define the consistency of the manufacturers' proposed reduction pathway with the standard. In this context, the Standard requires that reduction targets, in line with the carbon neutrality pathway, be elaborated according to both medium and long-term scenarios.

**Aims of the GSCC Standard**

In summary, the Steel Climate Standard has three important objectives:

- 1 Provide an unambiguous framework, independent of the technological processes used, for the certification of steel products and for the setting of science-based emission reduction targets, applicable to all steel producers, equally on a global basis.
- 2 Ensure transparency in the communication to all buyers and users of the actual carbon footprint associated with steel products, ensuring objective assessments and informed purchasing decisions based on the actual carbon footprint of the process used to generate the products.
- 3 Create a clear and replicable industry-wide standard to achieve emission reduction targets by 2050 consistent with the Paris Agreement, through monitoring, planning and implementation of targeted carbon reducing carbon emissions.

**Commitment of the AFV Beltrame Group**

Adopting the indications of the Standard proposed by the GSCC, the AFV Beltrame Group expresses its commitment to pursue a reduction in specific carbon dioxide emissions from its processes, foreseen by the document itself.

Our commitment includes:

- A 40% reduction by 2030 in the overall contribution of direct and indirect emissions from the production of electricity consumed (Scope 1 + Scope 2), taking as a base reference 2015 figures.
- The achievement of carbon neutrality, defined as the minimum value achievable with the use of the currently technologies available today and with those in development, (even with a very low degree of maturity, some of which even in the feasibility assessment phase, though promising). According to the Standard, steelmaking processes will have to achieve a specific emissions, in total not exceeding 0.12 tonnes of CO<sub>2</sub> per tonne of finished product.

In addition, we are committed to continuously improving the quality and accuracy of data on indirect emissions from transport activities in the steel industry, in the procurement phase, and those embedded in the raw materials used in the production process.



The new standards, already agreed with EU governments, oblige companies **to publish regularly data concerning their social and environmental impact, making them more responsible.**

## Regulatory context



### FIT FOR 55

The "Fit for 55" package, presented by the European Commission on 14 July 2021, aims to translate the ambitions of the Green Deal and consists of a series of proposals to revise climate legislation. This package has been the subject of several negotiations, with provisional agreements, which have not yet been finally approved. The main environmental aim of the "Fit for 55" is to accelerate the decarbonisation of European companies, with a goal increasingly ambitious 2030 target of a 55%, or even 62%, reduction in emissions compared to 1990 levels, as stated in the latest 2022 draft.

Among the main innovations within the "Fit for 55" package are the revision of the EU-ETS emissions trading mechanism and the impact of the CBAM (Carbon Border Adjustment Mechanism).



## EU-ETS

The EU-ETS mechanism, currently in its so-called 4th phase (2021-2030), is one of the most important policies for the reduction of greenhouse gas emissions of the European Union. The ETS works according to the "Cap&Trade" principle, providing a cap on emissions for the actors involved (Cap) and the possibility of trading between the actors involved (Trade).

The progressive reduction of the "Cap" therefore determines the need to reduce its own emissions and to define a decarbonisation pathway for all European companies, beyond the annual compliance needs that can be met by accessing the CO<sub>2</sub> emission credits (EUAs). Furthermore, the reduction of the "Cap" results in the reduction of free allocated allowances, which are indexed by a mechanism of "benchmark" to the performance of the 10 best companies Europe.

The provisional agreement of December 2022 contains the following proposed changes to the EU-ETS:

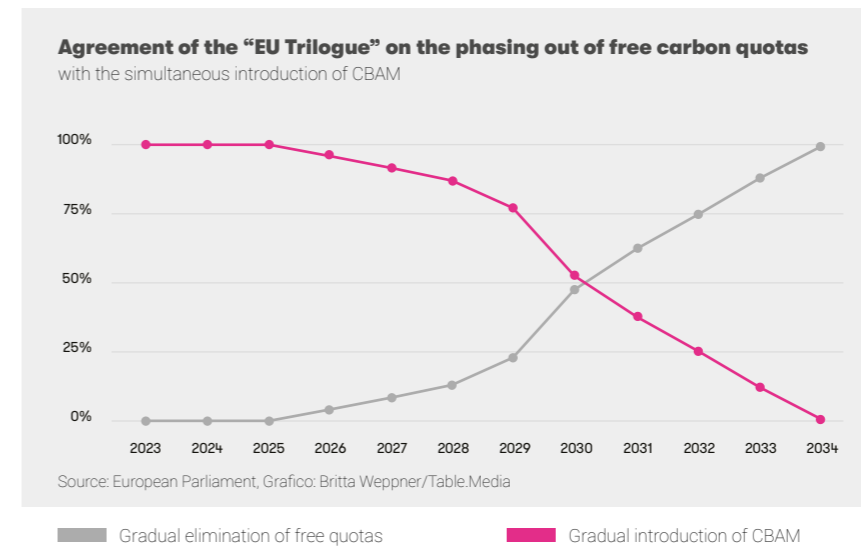
- reduction of emissions from all sectors included in the EU-ETS by 62%;
- reduction of total emissions (mechanism cap) and increase of the linear emission reduction to 4.3% between 2024 and 2027 and 4.4% between 2028 and 2030;
- reinforcement of the MSR (Market Stability Reserve) with an extension beyond 2023 of the forecast input of 24% (with a threshold of 400 million tonnes) and dynamic management of the MSR as a control system of price fluctuations;
- increased demands on ETS companies regarding energy diagnostics and decarbonisation plans and climate neutrality.

## CBAM

### (Carbon Border Adjustment Mechanism)

The CBAM is a carbon border adjustment mechanism that clearly addresses the risk of carbon leakage of companies and carbon emissions ("carbon leakage") resulting from the increased level of ambition of the EU in the climate field.

This mechanism is intended to prevent the Union's efforts to reduce emissions from being offset by an increase in emissions outside the EU, through relocation of production or increased imports of products that are originally subject to at a lower climate cost. The CBAM will be operational as of 2026, and will gradually decrease the percentage of free free ETS allowances (phase out of free allowances).



As regards the steel sector, all materials of the heading "cast iron, iron and steel" in Annex I to Regulation (EU) 2023/1773, excluding scrap and certain ferroalloys. Between the latter are considered only ferrochrome, ferromanganese and ferromnickel.

In addition, the Regulation provides, once in operation, to count only the direct emissions (thus excluding indirect emissions associated with consumption electricity) incorporated in the imported product.



On 1 October 2023, the transitional phase of implementation of the CBAM Regulation was launched. The quarter ending on 31 January 2024 is the first reporting period for which reporting obligations by importers (or indirect customs representatives) apply.

During this transitional period, the EU Commission intends to collect information aimed at the subsequent revision steps in order to implement a gradual transition to the phase-in starting from 01/01/2026. As regards the requirements at this stage, the following table summarizes the characteristics.

CBAM Transitional Phase - Compliance Structure				
Parties who are required to declaration	Type of performance	Emissions subject to CBAM	Issue cost	Corrective
Importer or indirect customs representative which in a given quarter of a year imported the goods listed in Annex 1	Quarterly CBAM report containing information on goods imported during that quarter	There is no obligation to purchase certificates	Zero	Do not apply

The timing of the implementation of the various obligations in the transitional period are as follows:

31/1/2024	31/7/2024	31/12/2024	31/12/2024
Presentation of the first CBAM quarterly report	Submission of report and correction of previous reports. Alternative calculation methods may be used (Art. 3 para. 3).	CBAM register of authorised CBAM registrants. Start of application submission: <ul style="list-style-type: none"> <li>• declarant status authorised</li> <li>• third country operators and installations registration.</li> </ul>	Commission report on products to be included Calculation: possibility to use alternative methods ex art 3 par 2

Details of the information to be included in the communication by registrants.

During the transitional period, importers shall report on a quarterly basis the amount and emissions incorporated in imported goods, separating direct and indirect emissions, as well as the extent of any "carbon tax" resulting from the application in the country of origin of a mechanism of taxation of carbon dioxide released in the production process.

One of the main tasks of the importer is to ensure the completeness of the list of imported quantities (according to the applicable CN codes) and other relevant factors required in the CBAM report, through the application of clear import monitoring procedures, in particular with regard to:

- Total quantity of each type of goods, expressed in megawatt hours (MWh) for electricity and in tonnes for other goods (t), detailed by individual production plant in the country of origin of the goods.
- Actual total CO<sub>2</sub> emissions, expressed per MWh of electricity or per tonne of each commodity.
- Total direct emissions of CO<sub>2</sub>, deriving from the specific production activities of each type of goods.
- Total indirect emissions of CO<sub>2</sub>, including the amount of electricity consumed in the production process and the emission factor applied.
- Carbon price due in the country of origin for emissions incorporated in imported goods, taking into account any taxation mechanisms applied.

Regarding the default factors of the embedded emissions, which can be used in the transitional period, a JRC (Joint Research Center) document was published in September 2023: "Greenhouse gas emission intensities of the steel, fertilisers, aluminium and cement industries in the EU and its main trading partners" which contains the default emission factors by type of products and semi-finished products at the level of non-EU countries that can be used temporarily for the CBAM reporting. These factors can be used for 100% of total incorporated emissions for the first 3 quarters of reporting (until 31 July 2024) in the absence of specific values provided by individual producers.

Below a couple of illustrative tables that show, on the basis of the factors specific to the various countries, the cost associated with the emissions incorporated in the goods imported from extra-EU countries.

**CASE A) CN 72142000: Iron or non-alloyed steel; bars and rods.**

Country	Direct [tCO <sub>2</sub> /t]	Indirect [tCO <sub>2</sub> /t]	Total [tCO <sub>2</sub> /t]	Cost* [€/t]
China	1.84	0.34	<b>2.18</b>	+174
India	4.9	0.73	<b>5.63</b>	+450
Turkey	1.83	0.14	<b>1.97</b>	+158
Ukraine	2.16	0.29	<b>2.45</b>	+196

**CASE B) CN 72249000: Semi-finished products of alloyed steel.**

Country	Direct [tCO <sub>2</sub> /t]	Indirect [tCO <sub>2</sub> /t]	Total [tCO <sub>2</sub> /t]	Cost* [€/t]
China	1.71	0.54	<b>2.25</b>	+180
India	2.72	0.57	<b>3.29</b>	+263
Turkey	1.87	0.27	<b>2.14</b>	+171
Ukraine	1.45	0.94	<b>2.39</b>	+191

\*It is assumed that producing countries have not adopted a carbon tax mechanism. CO<sub>2</sub> price: €80/t.



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The objective of **sustainable finance** is to create long-term value by directing capital towards activities that not only generate economic added value, but are at the same time **useful to society and are not a burden on the environment**

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## Sustainable Finance

The process of regulation of sustainable finance implemented by the European institutions aims to ensure common rules and an organic approach to combat greenwashing and create funding channels dedicated to businesses that can really prove to be sustainable. The Sustainable Growth Action Plan since 2018 has established ten actions to be implemented at European level, based on the three pillars of European sustainable finance:

- the creation of a classification system based on scientific data of sustainable activities (the c.d. "Taxonomy");
- the introduction of a mandatory reporting regime for both financial and non-financial companies on their impact on the environment and society, as well as the operational and financial sustainability risks they face;
- the preparation of a set of instruments aimed at supporting companies, financial market participants and intermediaries, in aligning their investment strategies with the Union's environmental objectives.

It is therefore "sustainable" finance that takes into account factors of environmental (Environmental), social (Social) and corporate governance (Governance), the so-called ESG factors, in the investment decision-making process, directing capital towards longer-term sustainable activities and projects.

## Taxonomy

EU Regulation 2020/852 has introduced the taxonomy of economic activities in the European regulatory system compatible, a classification of activities that can be considered sustainable on the basis of alignment with the environmental objectives of the European Union and compliance with certain social clauses.

To be environmentally friendly, an activity must fulfil the following criteria:

- 1** • Make a "substantial contribution" to at least one of the six environmental objectives:
  - Mitigation of climate change;
  - Adaptation to climate change;
  - Sustainable use and protection of water and marine resources;
  - The transition to a circular economy;
  - Pollution prevention and control;
  - The protection and restoration of biodiversity and ecosystems.
- 2** "Do not cause significant harm" (Do No Significant Harm - DNSH) to any of the environmental objectives;
- 3** Be carried out in compliance with minimum social guarantees (for example, those provided by the OECD guidelines and UN documents).
- 4** Comply with the technical screening criteria set by the European Commission.



The European reference regulatory **framework for sustainability** is still evolving. Further proposals are currently being negotiated between the **European Parliament and the Council of the EU.**

## CSDR

On 28 November 2022, the European Council approved definitively the Corporate Sustainability Reporting Directive (CSRD), one of the cornerstones of the European Green Deal and the Agenda for Sustainable Finance, amending Directive 2014/95 (NFRD - Non-Financial Reporting Directive).

The entry into force, finally, took place on 5 January 2023, and will entail big companies, not currently subject to the non-financial reporting directive and meeting 2 of the following criteria:

- turnover exceeding € 40 Million;
- net worth over € 20 million;
- over 250 employees

the obligation to present their reports on issues related to sustainability performance starting in 2026 (with reference to 2025).

The objective of the CSRD is to expand the entities required to provide sustainability information to stakeholders, in particular financial ones by providing:

1. all information on how developments in the field of sustainability influence and have an impact on the company (for example, the effects of climate change on the business model) in terms of financial materiality;
2. all information on the effects that the company itself has on the surrounding environment (for example the effect of emissions from production processes on the air quality of local residents) in terms of materiality and impact.

These two perspectives generate the concept of "dual materiality", representing the impact on the company and the impact of the company.



## Green Claims Directive

In recent years, companies have tried to improve their behavior and awareness on environmental issues, also in order to meet the expectations of customers and stakeholders. However, the lack of clear and common rules on how to communicate the actual green footprint of products exposes companies to potential accusations of greenwashing. Data on the accuracy and reliability of so-called "green claims" in Europe are anything but comforting: "about 53% of green claims provide vague, misleading or unfounded information", according to a European Commission study in 2020. In addition, "40% of claims have no supporting evidence, and half of these offer a weak or non-existent verification possibility". On 22 March 2023, the European Commission took a step towards better consumer protection in the EU by proposing a new directive to combat the proliferation of fake green claims.

The Green Claims Directive aims to:

- make green claims reliable, comparable and verifiable across the EU;
- protect consumers from greenwashing.

The Green Claims Directive sets out what companies must do to demonstrate and communicate their green credentials. That is, it defines the rules for the validation of voluntary green claims and regulates their use. The Commission proposal provides for a ban on the use of any product classification system that is not based on common EU rules. It also lays down minimum transparency requirements for sustainability labels, which will have to be verified by an independent third party, and establishes a register of reliable eco-labels. In addition, companies will be obliged to provide evidence in support of their environmental performance statements, and market surveillance authorities will have to apply regular checks and severe penalties in case of infringement. The Directive mainly regulates the so-called "Explicit Environmental Claims" (EEC), defining Mandatory evidence requirements, also for Environmental Labelling Systems ("Environmental Labelling Schemes" - ELS). Environmental Claims" (EEC), defining mandatory evidence requirements, also for environmental labelling systems ("Environmental Labelling Schemes" - ELS).



## EPBD Proposal

### Energy Performance of Buildings

The first version of the EPBD (Energy Performance of Buildings Directive) was published in 2002 (Directive 2002/91/EC). In the following years, the EPBD has been subject to several revisions that have finally led to the last proposal for amendment by the European Commission dated 15 December 2021.

With this proposal, the Commission aims to improve the regulatory framework existing to reflect higher ambitions and more pressing needs climate and social action, while providing EU countries the necessary flexibility to take account of differences in European real estate park. The document also illustrates how Europe can obtain by 2050 a real estate park with zero emissions and completely decarbonised. Approval by Parliament European EPBD Directive, which took place in Strasbourg in 2023, gave the green light to the directive on green houses that provides for the improvement of the energy class of buildings from 2030.

The Energy Performance of Buildings Directive (EPBD) is the main EU legal instrument to decarbonise the housing stock of Member States. Since its adoption, the EPBD has been closely linked with the EU's climate objectives and has been aligned to reflect their progressive evolution. The objective of the European directive is to encourage, in all countries restructuring of private and public buildings, in order to reduce energy consumption and CO<sub>2</sub> emissions of the 27 Member States.

The Directive states that such buildings are responsible for 40% of final energy consumption and 36% of energy-related greenhouse gas emissions, and 75% of the total assets are not energy efficient and natural gas is mainly used for heating buildings, representing about 42% of the energy used for space heating and residential sector.

## Critical Raw Material Act

Essential raw materials are of great economic importance for Europe, but are also very vulnerable to supply disruptions and subject to growing global demand, driven by decarbonisation economies. For example, EU demand is expected of rare earth metals will increase six-fold by 2030 and seven-fold by 2050; for lithium, EU demand is expected to increase by twelve times by 2030 and twenty-one times by 2050. Today Europe is based strongly on imports, often from a single third country, and the recent crisis highlighted the EU's strategic dependencies.

Critical raw materials are indispensable for the EU economy and a wide range of technologies needed for strategic sectors such as renewable energy, digital, space and defense. Critical Raw Materials Act (CRM Act) will guarantee the EU access to a secure and sustainable use of essential raw materials, enabling Europe to achieve its 2030 climate and digital targets.

The Commission's proposal for an act on raw materials will ensure that the EU can rely on strong, resilient and sustainable value chains for critical raw materials. The proposed regulation will strengthen all European critical raw materials value chain stages, will diversify EU imports to reduce strategic dependencies, improve the EU's ability to monitor and mitigate the risks of supply disruption by improving its circularity and sustainability.

The main points of the Act are as follows:

1. Setting benchmarks for national capacities by 2030;
2. Creation of secure and resilient supply chains;
3. Preparation and mitigation of supply risk;
4. Improving the sustainability and circularity of critical raw materials on EU market.



Renewability Consortium, Abruzzo, Italy

## French Decree No. 2022-539 of 13.04.2022

On January 1, 2023, French Decree No. 2022-539 of April 13 2022 came into effect. It focuses on carbon offsetting and carbon neutrality declarations present in the marketing activities of products sold in the French market.

This decree allows to advertise and/ or label a product as "carbon neutral" only after quantifying its carbon footprint, the strategy for reducing emissions and the compensatory measures taken. The aim of the decree is to regulate the use of "carbon neutrality" claims, adequately supported by data and measurements and avoid greenwashing practices.



In order to comply with French legislation, the following requirements must be met:

1. Prepare a greenhouse gas (GHG) emission balance including direct and indirect product emissions;
2. Describe the strategy for managing greenhouse gas (GHG) emissions and methods for offsetting residual emissions.

The Beltrame Group has made efforts to comply with the requirements of this decree and has taken the following steps.

First, it has calculated its company-wide carbon footprint, as reported in ISO 14064-1. This accounting of emissions is all-inclusive, including both direct (Scope 1) and indirect (Scope 2 and Scope 3) emissions in the calculation.

The result of this assessment shows a reduction in greenhouse gases compared to the previous year, in line with the improvement trend started from the Group and with the decarbonisation path. These results were inspected by RINA, which has issued a certificate compliance with ISO 14064-1 and PAS2060.



Moreover, the AFV Beltrame Group has developed an "ad hoc" mapping procedure Chalibria product emissions: "Life cycle analysis of the finished product Chalibria-steel carbon neutral by AFV Beltrame Group, version 1 of 10/02/2023". Through this process, the resulting emissions are tracked the life cycle of the product, which are reduced and fully compensated with the purchase and cancellation of carbon credit.

It has been quantified and confirmed that the CO<sub>2</sub> emissions considered in the perimeter of the Chalibria project, cover more than 80% of total CO<sub>2</sub> emissions related to the life cycle of the finished product. Also on this aspect, the independent auditor RINA has released an opinion of verification that confirms the validity of emission management process of the finished product, to further test the Group's drive towards carbon neutrality.

# Stakeholder engagement and materiality analysis



## Stakeholder Engagement strategy

The Group has always been strongly oriented towards stakeholder involvement and believes that the exchange of information, listening to their requests and expectations and satisfying mutual interests with a view to collaboration and bilaterality, are conditioning factors for the business strategy.

Transparency is the prerequisite of the relationship that the Group has with every stakeholder and is closely linked to sustainability: for these reasons, a path was undertaken during 2022 aimed at dynamically mapping stakeholders, their interests, possible areas of collaboration and related material issues. Moreover, given the industrial sector in which the Group operates, the growing regulatory demands and the decarbonisation process, which create a strong interconnection between the interests of stakeholders, a new approach is crucial to the success of long-term steel projects and to the ability to work together towards European climate neutrality objectives.



## Materiality analysis

Continuing the path taken in previous years, 2022 was marked by the Group's particular attention to sustainability.

During the year, in fact, the list of material issues was updated in accordance with the Standards of the Global Reporting Initiative (GRI) 2021.

To do this, a comprehensive analysis was carried out, involving internal and external stakeholders and integrating different methodologies that led to the revision of the list of material issues to be reported within the Sustainability Report, identifying all issues that may or could represent current and potential positive and negative impacts on the economy, environment and people, including impacts on human rights.

Below, the list of material topics in order of priority:



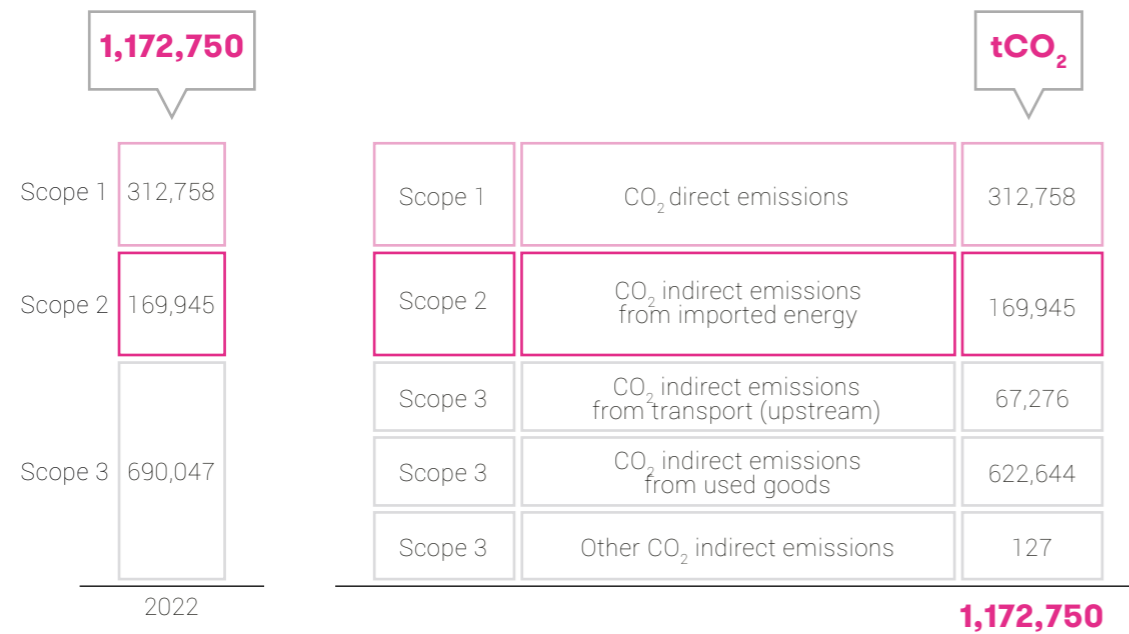


# Measurement & Target

## New measures 2023: absolute emissions and specific emissions

In 2022, AFV Beltrame Group renewed its commitment to monitoring and quantifying its greenhouse gas emissions generated throughout the value chain, both in absolute [tCO<sub>2</sub>] and specific [tCO<sub>2</sub>/t] terms. The detail is available for all emissive categories: Scope 1, 2 and 3. It emerged that the Group performed better in each of the emissive categories (Scope 1, 2 and 3) than in 2021, and reduced overall absolute emissions by 9%.

### CO<sub>2</sub> in absolute value: Scope 1+2+3 (upstream) emissions for steelworks and rolling mill [2022; tCO<sub>2</sub>]



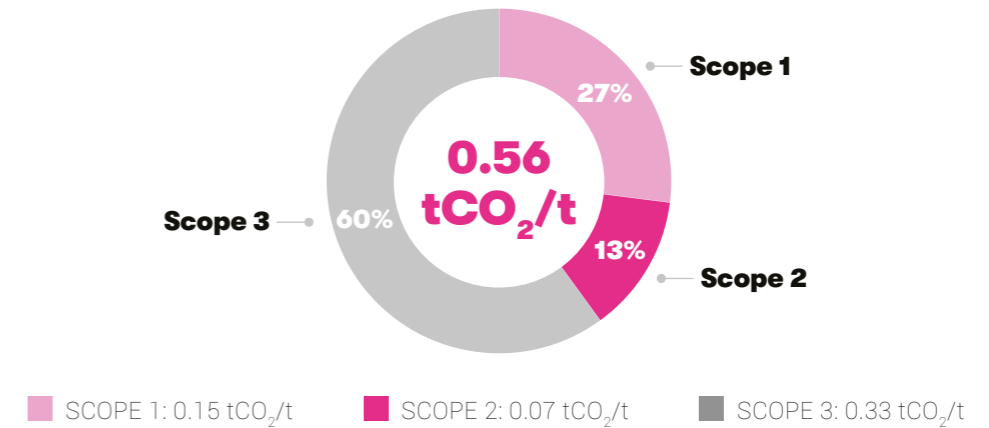
**Notes:** Scope 1 includes the following emissions outside the ETS scheme: fuel combustion from company cars and fugitive emissions; Scope 2 is calculated by applying a market-based approach, using the AIB 2021 residual mix factors per country, for Switzerland used zero value as the electricity purchased in 2022 is covered by a guarantee of origin.



At the end of the accounting, the data were subjected to verification by the RINA Certification Body, which issued a conformity opinion on the methodology used and the results shown. In April 2023, the Beltrame Group obtained the renewal of the certificate of conformity in accordance with ISO 14064-1, which defines and regulates the rules of accounting for GHG emissions at organisation level.

AFV Beltrame Group also quantified the specific emissions, comparing the tons of CO<sub>2</sub> emitted to the tons of finished product. These indicators were calculated for each of the three Scopes, in order to identify the most impactful. The following graph shows the specific indicators for 2022 and their breakdown:

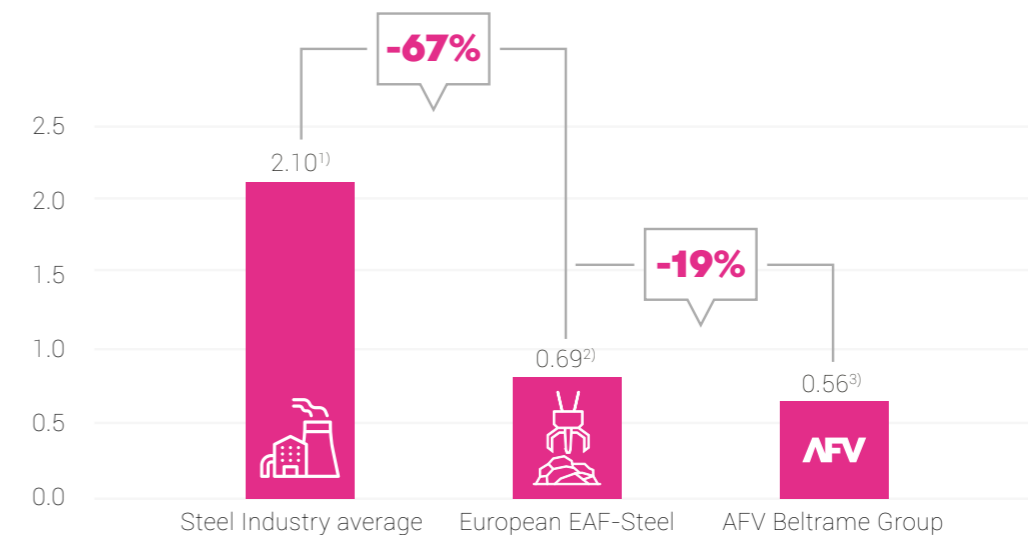
### CO<sub>2</sub> intensity: Scope 1+2+3 (upstream) emissions for steelworks and rolling mill [2022; tCO<sub>2</sub>/t of finished steel product].



**Notes:** Scope 1 includes the following emissions outside the ETS scheme: fuel combustion from company cars and fugitive emissions; Scope 2 is calculated by applying a market-based approach, using the AIB 2021 residual mix factors per country.

AFV Beltrame Group's Scope 1+2+3 (upstream) emissions are 0.56 tCO<sub>2</sub> per ton of finished product. Overall, the Group's KPI decreased by about 2% compared to 2021. The perimeter of the carbon footprint measurement and calculation activity is "cradle to gate": Scope 1, 2 and 3 (upstream). Emissions of AFV Beltrame Group result lower than both the average emissions of the world steel industry and the European average emissions of electric arc furnace steel (EAF), the same production technology of AFV Beltrame Group.

### Sector average Scope 1+2+3: steel mill + rolling mill [tCO<sub>2</sub>/t finished product; 2022].



1. World Steel Association average CO<sub>2</sub> emissions of steelworks (Scope 1,2,3) integrated with data processing from external emission database (Scope 1,2,3) of rolling mill;  
 2. European Commission benchmark for electric kiln steel (values '21-'25 for Scope 1+2 of steelworks) integrated with data processing from external database for the calculation of steel mill Scope 3 and Scope 1+2+3 emissions of rolling mill;  
 3. For the group indicator, the market-based approach was used for the calculation of Scope 2.

## EPD - Environmental Product Declaration

AFV Beltrame Group has drawn up several Environmental Product Declarations (EPD) validated by independent third parties for merchant bars, for the reinforcing steel bar in coils, for SBQ profiles and for the Beltreco industrial aggregate. EPD refers to a voluntary product certification scheme, developed in application to ISO 14025 (Type III environmental labelling), according to the International EPD System Program.

Such declarations shall relate to the environmental impacts that may be associated with the product life cycle and that are evaluated through life cycle analysis (LCA - Life Cycle Assessment), in order to ensure transparency, objectivity and comparability of the results expressed, relating to the environmental performance of products.

EPD - Product	Plant AFV Beltrame Group	Emission date
Merchant bar	Vicenza	<b>2022 (being updated)</b>
Beltreco inert aggregate	Vicenza	<b>2022 (being updated)</b>
Merchant bar	San Didero	<b>2022 (being updated)</b>
Merchant bar	San Giovanni Valdarno	<b>2022 (being updated)</b>
Merchant bar	Stahl Gerlafingen	<b>2022</b>
Rebars	Stahl Gerlafingen	<b>2022</b>
Merchant bar	LME	<b>2019 (being updated)</b>
Special steels - SBQ Bars	Donalam	<b>2021</b>

The EPD declarations of the Group's products have been validated and recorded under the main international schemes (International EPD, System and IBU - Institut Bauen und Umwelt).

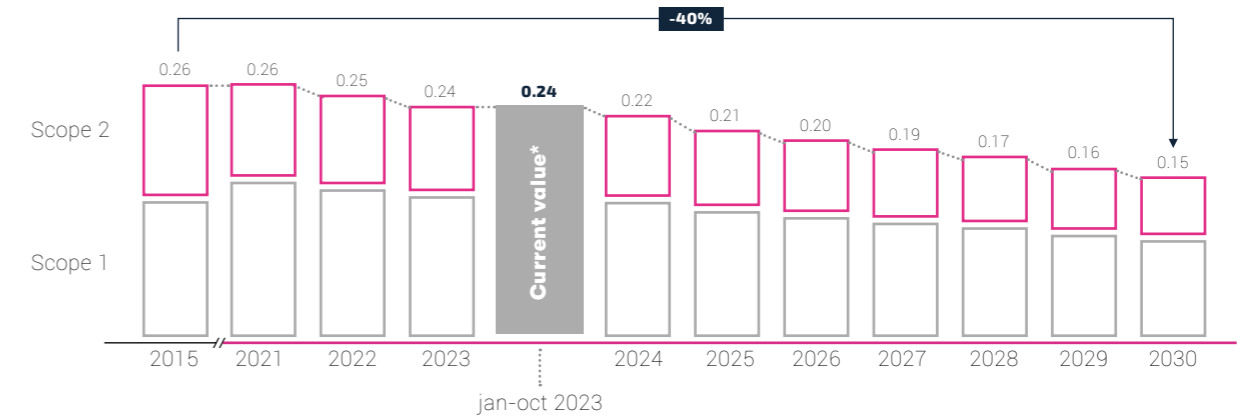
A further fundamental element supporting the peculiar circularity of the electric furnace steel industry is the declaration of the recycled material content present in the finished products. This certification, consistent with the UNI EN standard ISO 14021, identifies the percentage of materials coming from recovery cycles used in the production process of AFV Beltrame Group merchant bars, which, also for the year 2022, was higher than 95%. An independent third-party attestation of the calculation procedure and its results for the AFV and LME plants is planned for 2023.

## Reduction target and current emissions level 2023

AFV Beltrame Group has defined a Decarbonisation Plan in which it has established a target of reduction of emissions of Scope 1 and 2 of 40% to 2030, compared to the level of 2015. According to the decreasing trend identified in the Decarbonisation Plan, in 2023 the KPI of Scope 1 and 2 should have been 0.24 (expressed in tCO<sub>2</sub>/t).

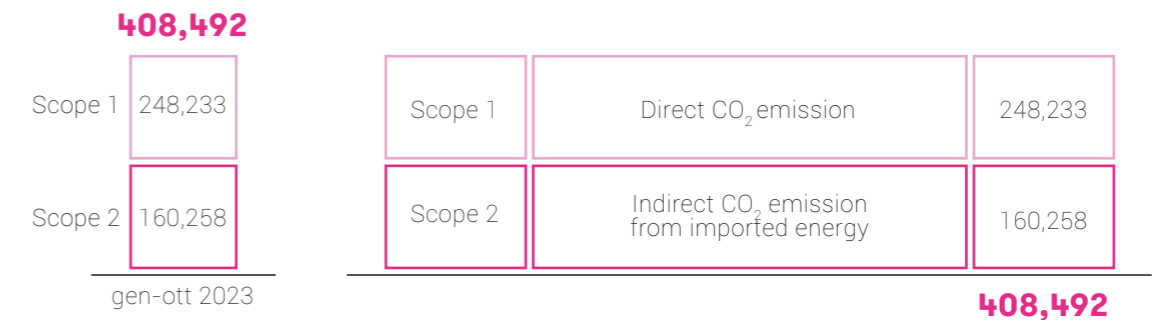
The group's decarbonisation strategy in the first 10 months (Jan-Oct 2023) remains in line with the target. However, it should be noted that the indicator is influenced by two variables: production volumes (endogenous variable), which improve KPIs as production increases and electricity emission factors (exogenous variable). In particular, France electricity emission factor (source: AIB 2022) was significantly higher than the historical figure due to the exceptional and prolonged shutdowns of the French nuclear power plants. This factor has a significant impact on the final calculation of the KPI [tCO<sub>2</sub>/t]. The chart below depicts the reduction path, with the fixed annual target value.

**Scope 1+2 annual emission reduction plan for AFV Beltrame Group [tCO<sub>2</sub>/t finished product; 2015-2030].**



\*The value of Scope 1+2 indicated for the first 10 months has not yet been certified by the third party so it may change.

**CO<sub>2</sub> in absolute value: Scope emissions 1+2+3 (upstream) for for steel mill and rolling mill [Jan-Oct '23; tCO<sub>2</sub>]**



**Notes:** Scope 1 and 2 values for the period Jan-Oct 2023 are not yet certified by the third party. Scope 1 only includes emissions included in the EU-ETS scheme; Scope 2 is calculated using a market-based approach, using the AIB 2022 residual mix factors per country, for Switzerland used zero value as the total electricity purchased in 2023 is covered by a guarantee of origin. For Italy the value of the supplier is used (last declared relative to the year 2022)

**>95% materials from recovery cycles used in the production process of Beltrame Group merchant bars**

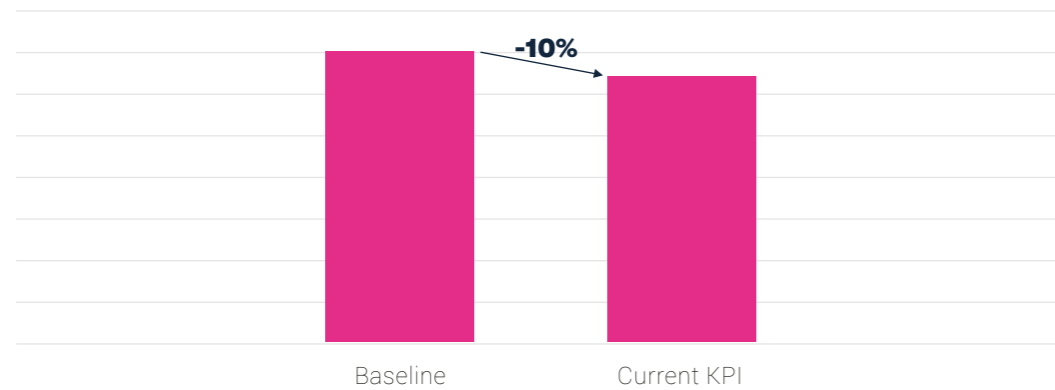
# Our past, ongoing and future activities

## Decarbonisation projects 2024

During 2023, the new rolling furnaces were commissioned at the production sites in Gerlafingen (CH), Trith Saint Léger (FR) and Calarasi (RO). Some already note a reduction in the specific consumption of natural gas per tonne of finished product [Nm<sup>3</sup>/t] and consequently a reduction in direct emissions Scope 1.

For example, the specific reduction of natural gas [Nm<sup>3</sup>/t] obtained in one of our production sites, calculated comparing the baseline value with that of the first 6 months of operation of the new plant. At the same production site in September 2023 there was a 20% saving of natural gas in line with the project parameters.

Revamping reheating furnace for rolling mill



Since the interventions entered into operation during 2023, it is not possible to provide an overall assessment of the actual savings achieved. These projects are constantly monitored but only when a set of sufficiently broad and representative data it will be possible to make an assessment of the savings actually achieved for each production site.

### Furnace in Stahl Gerlafingen, CH - KOMBI

In March 2023 Stahl Gerlafingen commissioned the new reheating furnace for the Kombi rolling mill and dismantled the old one. The furnace was installed in a different position than before, to avoid long interruptions in production and create enough space for future improvements. The foundations and preparatory work took about a year.

The new kiln will enable AFV Beltrame Group to produce more efficiently and sustainably, increasing the mill's productivity and reducing natural gas consumption. The plant is equipped with regenerative burners, which recover the heat to preheat the combustion air very efficiently. This allows us to save between 15 and 20% of natural gas consumption and emissions direct CO<sub>2</sub>. In addition, the residual heat of the cooling circuit and exhaust fumes is recovered to preheat the water in the heating network.



### Furnace in LME, FR - TGP

At the end of February 2023, the LME plant commissioned the new reheating furnace for the TGP rolling mill. The new equipment was built to replace the old one which was dismantled and dated back to 1976. The construction of the new furnace took about a year as it became necessary to carry out some ancillary works (moving underground networks, building new building, etc.).

This 25 million euro project aims to make the production line reliable and sustainable and to optimize natural gas consumption: this new furnace is equipped with a regenerative burner technology (with heat recovery on each burner through ceramic systems) that allows us to aim at a saving between 10 and 15% in methane gas consumption and CO<sub>2</sub> emissions of the rolling furnace.



### Furnace in Donalam, RO

In June 2023, the Calarasi (Donalam) plant put the new Rolling furnace to replace the existing one. The total investment for the construction of the new mobile bar furnace exceeds EUR 13 million and represents an important step towards energy saving and decarbonisation.

The new furnace, in addition to allowing an expansion of the range of products offered to the customer and improved production efficiency, is equipped with state-of-the-art technologies (e.g. hot air recirculation, regenerative burners, material loading/unloading) that will reduce methane gas consumption by about 30% compared to current and consequently CO<sub>2</sub> emissions.

# The reduction of the carbon footprint also drives a strategic long term business choice.

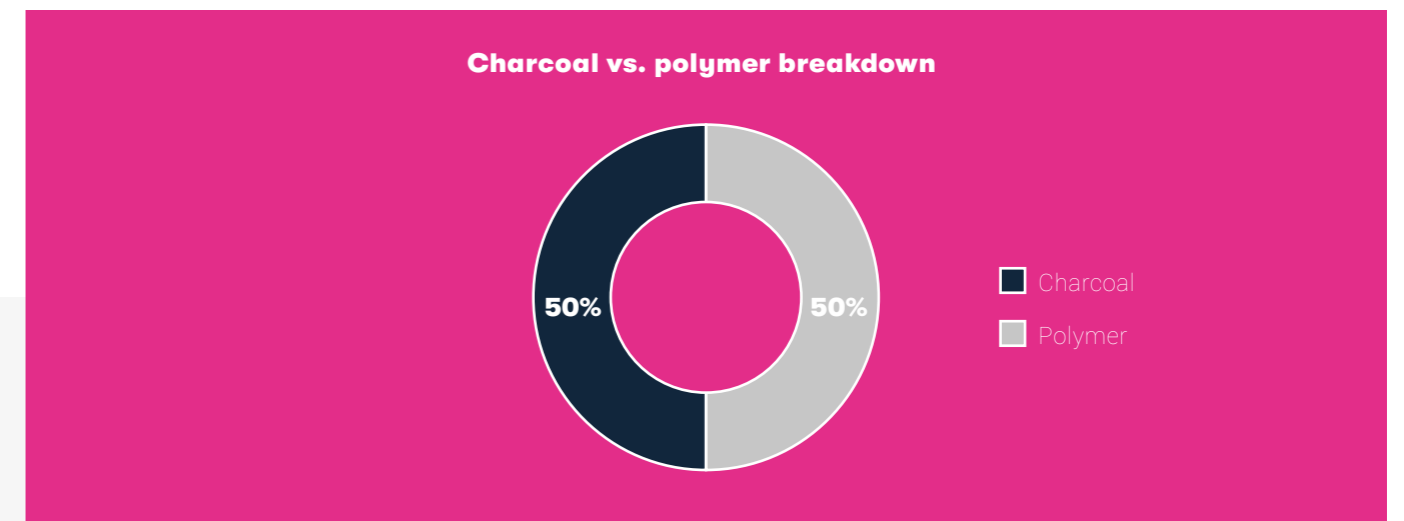
## Use of secondary reducing agent

The Vicenza plant commissioned the SRA (secondary reducing agent) injection plant as a partial replacement of anthracite coal, in the last months of 2022, and is constantly monitoring the progress of the project. The project is part of the decarbonisation initiatives with a specific value in view of circular economy. The SRA, material certified as "secondary raw material", is a technopolymer derived from the mechanical processing of plastic waste that acts as a reducing agent allowing to partially replace the carbon blown in the EAF furnace.

The polymer material, standardized by UNI10667, is composed of a lower amount of fossil carbon than coal, therefore has a lower emission factor. Consequently, the adoption of the polymer allows to lower CO<sub>2</sub> emissions and to reduce the carbon footprint of the steel produced. In addition, the polymer also has a not negligible share of biogenic carbon but with zero impact in terms of EU-ETS, providing the appropriate measurements.

Some preliminary results due to the introduction of the polymer in early 2023 are noted:

- the component of fine coal blown in EAF has already been reduced by 50% compared to 2022; this allows, in addition to encouraging circular economy practices, to reduce the use of natural resources and dependence on imports of material from abroad.

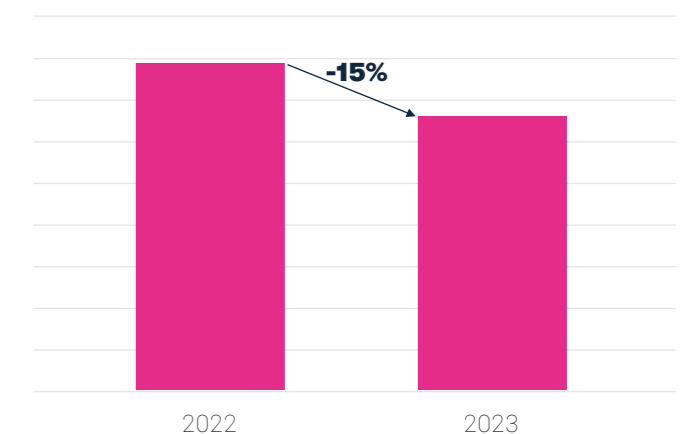


- the adoption of the polymer allows, to date, to reduce by 15% compared to 2022 the CO<sub>2</sub> emissions due to the use of coal in the process, considering only fossil carbon component contained in it.

These results are in line with the project objectives and will be constantly monitored for the purpose of reporting CO<sub>2</sub> emissions.

The AFV Beltrame Group is considering extending this ambitious project to the Stahl Gerlafingen and LME's Swiss and French plant.

## Specific CO<sub>2</sub> emissions (SRA project)



## Renewable Energy

### Photovoltaic plants 2023

AFV Beltrame Group is developing projects related to the supply of green energy, through direct investment in renewable energy production plants for self-consumption and through the signing of green energy purchase contracts (PPA - Power Purchase Agreement). By 2023 will enter into service some of these initiatives, for a total of about 14 MWp (of which 9MW produced through the Consortium Renewability) of photovoltaic systems that will reduce indirect emissions Scope 2. Thanks to these projects about 4% of the annual electricity consumed will be from renewable sources.



Renewability photovoltaic plant, Abruzzo, Italy

### Renewability Consortium

In 2022 AFV Beltrame Group joined the Consortium Renewability, a community of renewable energy consumers, which aims to invest in the construction of solar power generation plants and to provide the energy thus produced to each member. This project allows prices to be freed from the instability of the energy market by bearing only the industrial costs of the initiative and benefiting from energy produced from renewable sources.

AFV Beltrame Group will use the renewable energy produced by photovoltaic systems of "Renewability" present in Lazio, Abruzzo and Sicily. The share of power allocated to AFV Beltrame Group is 9 MW, which will result in an annual production of about 14 GWh. These plants are expected to be operational by the end of 2023.

### Stahl Gerlafingen's plant

The Swiss plant Stahl Gerlafingen has signed a contract of use with the energy cooperative ADEV Energiegenossenschaft for the installation of a photovoltaic plant with a capacity of 2 MW, installed on the roof of the profiles rolling mill, consisting of 4,500 photovoltaic modules distributed over an area of about 9,000 m<sup>2</sup>. The construction of the plant will take place from January 2024 and it is expected that the plant will be able to provide about 2 GWh/year of renewable electricity from April 2024. Stahl Gerlafingen will use 100% of the energy produced for self-consumption.

The main alternatives to fossil fuels available today come from **hydroelectric, photovoltaic and wind power plants.**



Stahl Gerlafingen's plant, Switzerland



Photovoltaic plant, San Giovanni Valdarno, Italy

### San Giovanni Valdarno

1.6 MW photovoltaic system located on the roof of the San Giovanni Valdarno plant consists of 2,970 photovoltaic modules spread over a total area of 11,000 m<sup>2</sup>.

The photovoltaic system will be able to produce about 2 GWh/ year of renewable energy of which more than 70% will be self-consumed by the production plant.

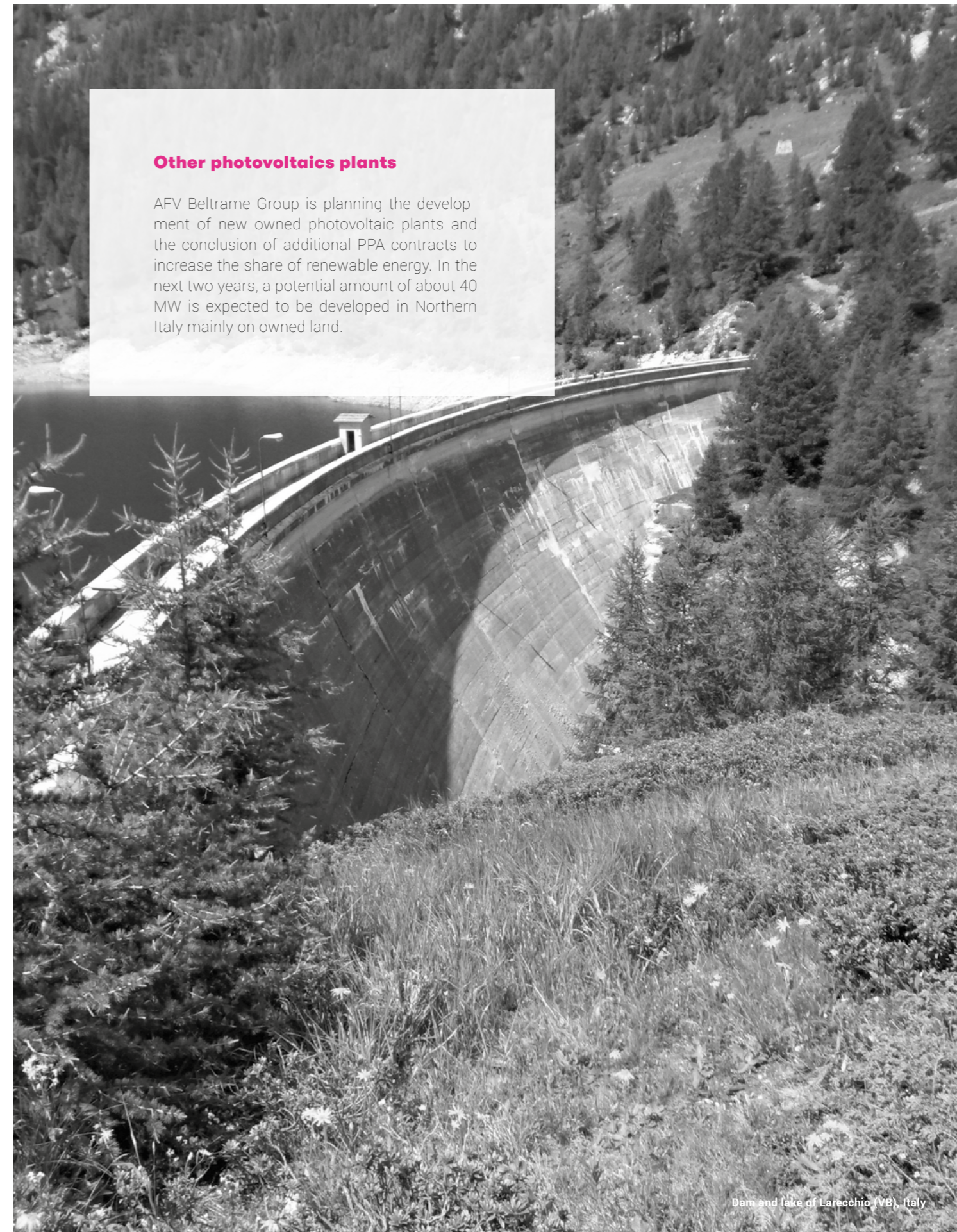
This will allow a reduction of energy withdrawal from the network of about 20%. The plant will come into operation by the end of 2023.

### Sirio

3.3 MW ground photovoltaic system composed of more than 7,300 high efficiency photovoltaic modules with horizontal axis tracker technology located in the province of Mantua. The plant, which came into operation in July 2023, will produce about 5 GWh/ year. The renewable electricity produced by the plant will be supplied to AFV Beltrame by signing a PPA contract with the company that owns the plant.



Photovoltaic plant, Ceresara, Italy



### Other photovoltaics plants

AFV Beltrame Group is planning the development of new owned photovoltaic plants and the conclusion of additional PPA contracts to increase the share of renewable energy. In the next two years, a potential amount of about 40 MW is expected to be developed in Northern Italy mainly on owned land.

Dam and lake of Larecchio (VB), Italy

## Idroelettriche Riunite

The current climate change and the progressive trend in energy prices, recorded in recent years, lead us to consider, with increasing urgency, solutions that accelerate the energy transition.

It is a matter of implementing clean energy production that gradually but constantly replaces fossil fuels.

Currently, there are several systems that can be used to exploit renewable energy and many are in place for some time. Among these a leading role is played by hydroelectric plants that affect, in Italy, for just over 17% of the total energy produced and about 40% of the total renewable production.

Their main advantage is that, by harnessing the power of moving water to produce energy, they do not generate polluting greenhouse gas emissions.

With the aim of an increasing supply of clean energy to cover its energy needs, AFV Beltrame Group in 2023 acquired and subsequently incorporated Idroelettriche Riunite S.p.A., a company that has been operating in the production of renewable energy for over a century.

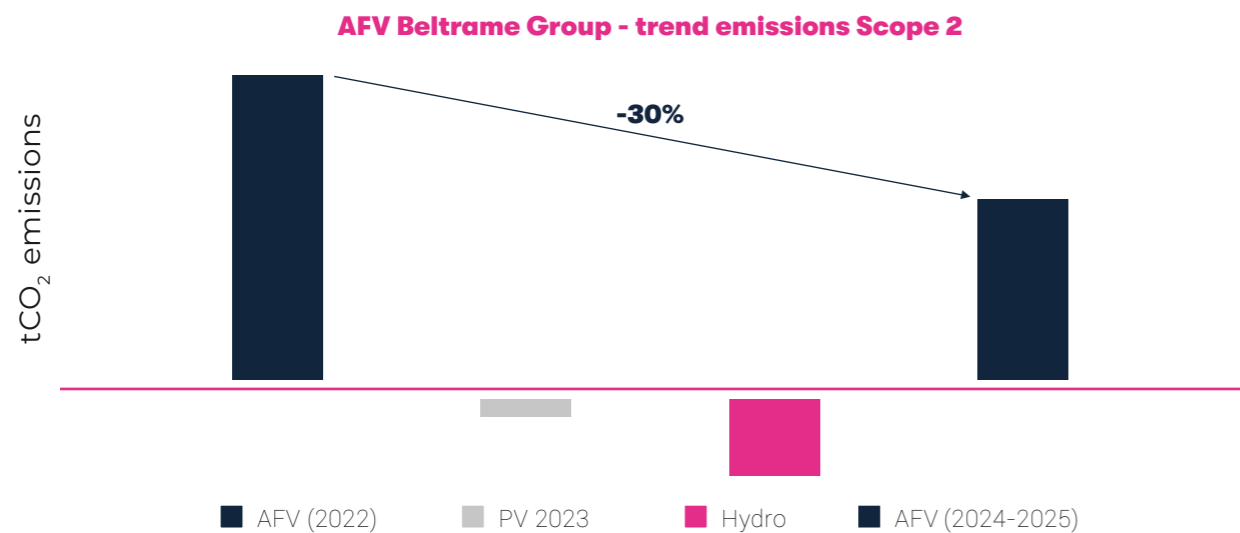
It was the founder Antonio Beltrame, in the first decades of the last century, to understand that the construction of hydroelectric power plants would allow to feed directly the family steel factory, in a less expensive way compared to the use of electricity alone. This belief led him to build in 1925 the first Group power plant in Pontetto. Over the years Beltrame built or acquired several power plants. The choice of location was obviously linked the geographical conformation of Italy, characterized by the presence of the Apennine ridge and the Alps.

Thanks to the natural slopes of the soil sufficiently high, it is possible to guarantee the productivity of hydropower plants and for this reason they were built for the most part in northern Italy.

Today, AFV Beltrame Group owns 10 plants located between the Italian regions Piemonte and Veneto. These are small and large power plants with an average production of 160 GWh/year of renewable energy, equal to 30% of the energy needs of the Italian plants, leading to a reduction of about 36,000 tons of CO<sub>2</sub> released into the atmosphere.

The incorporation of Idroelettriche Riunite is therefore an important step towards reducing the missions of Scope 2.

To enhance all this, the company is working with the energy supplier to create an innovative contract that allows the sharing of energy produced by renewable (hydroelectric and photovoltaic) plants with the Italian production plants from 2024.



**The hydroelectric plants managed are:**



**Carturo plant**

Location: San Giorgio in bosco (PD)  
Waters: Brenta River  
Year of construction: 1989-1992  
Turbines: 2 Kaplan  
Power: 400 kW  
Average production: 16,400,000 kWh/year



**Agrasina plant**

Location: Montecrestese (VB)  
Waters: Diga di Larecchio, Torrente Isorno  
Anno di costruzione: 2009-2013  
Turbines: 1 Pelton e 2 Francis  
Power: 5.100 kW  
Average production: 7.500.000 kWh/year



**Collicello plant**

Location: Valstagna (VI)  
Waters: Fiume Brenta  
Year of construction: 2017  
Turbines: 1 Kaplan  
Power: 130 kW  
Average production: 1.000.000 kWh/year



**Cipata plant**

Location: Montecrestese (VB)  
Waters: Diga Agrasina, Torrente Isorno,  
Rio Tomello, Rio Nocca, Rio Gillino  
Year of construction: 1950-1953  
Turbines: 2 Pelton  
Power: 10.600 kW  
Average production: 31.600.000 kWh/year



**Colzè plant**

Location: Longare (VI)  
Waters: Fiume Bacchiglione  
Year of construction: 1937-1939  
Turbines: 1 Kaplan  
Power: 750 kW  
Average production: 3.500.000 kWh/year



**Montecrestese plant**

Location: Montecrestese (VB)  
Waters: Torrente Isorno, Torrente Melezzo  
Year of construction: 1940-1946  
Turbines: 2 Francis  
Power: 700 kW  
Average production: 4.100.000 kWh/year



**Debba plant**

Location: Longare (VI)  
Waters: Fiume Bacchiglione  
Year of construction: 1943  
Turbines: 2 Kaplan  
Power: 400 kW  
Average production: 1.600.000 kWh/year



**Nuova Ceretti plant**

Location: Montecrestese (VB)  
Waters: Diga di Larecchio, Torrente Isorno  
Year of construction: 1927; 1995-1998  
Turbines: 1 Pelton  
Power: 10.500 kW  
Average production: 40.300.000 kWh/year



**Valstagna plant**

Location: Valstagna (VI)  
Waters: Fiume Fiume Brenta  
Year of construction: 1942-1951  
Turbines: 2 Kaplan e 1 Francis  
Power: 7000 kW  
Average production: 33.800.000 kWh/year



**Pontetto plant**

Location: Montecrestese (VB)  
Waters: Torrente Melezzo, Rio Molini, Torrente  
Isorno, Torrente Fenechio  
Year of construction: 1925-1926  
Turbines: 2 Pelton e 2 Francis  
Power: 8.800 kW  
Average production: 20.500.000 kWh/year



## Scope 3 measurement in the supply chain

In the first months of 2023, the analysis of greenhouse gas emissions (GHG) covering all the Group's plants was renewed. Accounting refers to the emission performance of 2022, and ended with obtaining the ISO 14064-1 certification, issued by the RINA Certification Body in April 2023.

The main emission contribution of AFV Beltrame Group comes from Scope 3, that is indirect emissions generated along the value chain. Altogether these pile to beyond 800 thousand tons of CO<sub>2</sub>, on almost 1.3 million tons of CO<sub>2</sub>. Scope 3 emissions are therefore equal over 60% of total emissions at Group level.

AFV Beltrame Group is strongly convinced of the need to further assessing the carbon footprint of its indirect emissions of type Scope 3.

Therefore, it has undertaken a Stakeholder engagement path focused on the main suppliers of raw materials and transport (upstream and downstream), that are the most impacting items within the category of Scope 3.

The first step was to make the mapping of strategic suppliers from the point of view of CO<sub>2</sub> emissions by dividing them into the most impactful macro-categories.

A questionnaire was draft in which various levels of information were requested, e.g. type and quantity of material supplied, country of origin, CO<sub>2</sub> emissions of product, means of transport used during the supply and other useful information for the purpose of decarbonization.

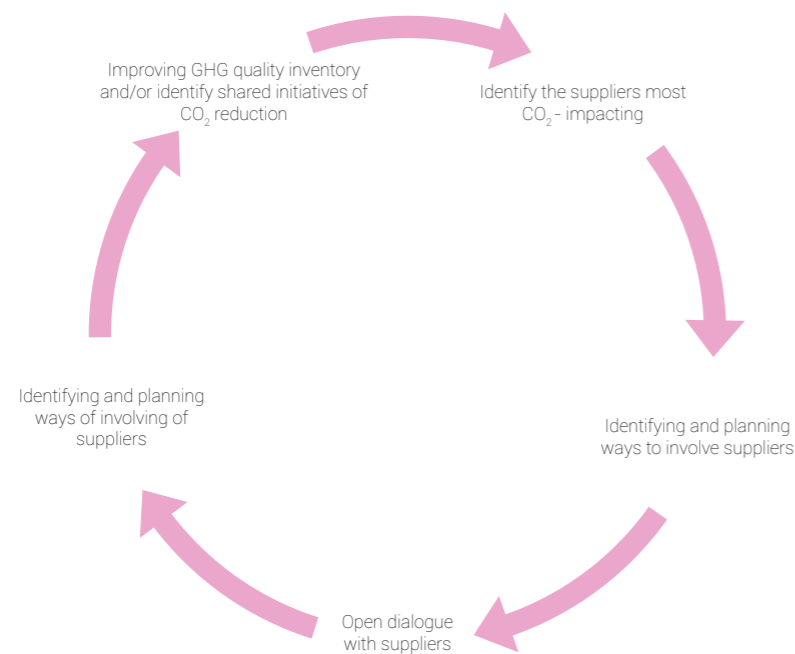
**The questionnaire was sent to more than 80% of the transporters of finished products and to more than 95% of the suppliers of the most CO<sub>2</sub>-impacting raw materials. The participation of suppliers was high with a response rate over 80% in all categories concerned.**

After analysing the responses of the questionnaires, the Group is committed to conducting in-depth interviews with the main impacting partners at Scope 3 level in order to:

- know the level of customer awareness on sustainability and decarbonisation issues;
- verify the presence of specific data (e.g. CO<sub>2</sub> emissions), methods used in the calculation and/or the presence of any certifications (e.g. ISO14064-1) to improve the quality of the GHG emission inventory;
- encourage the improvement of suppliers' awareness of environmental issues with the possibility of evaluating future partnerships.

This initiative provides a solid starting point for build a network of connections with the Group's suppliers with a commitment to maintain and periodically renew the exchange of information.

**The objective of the project is to improve the quality of the GHG emission inventory through the acquisition of primary data by suppliers reaching the 30% of Scope 3 with specific emission factors.**



With Chalibria we implement the strategy of **decarbonization**, taking advantage and value.



## Focus on raw materials

Within Scope 3 of its supply chain, AFV Beltrame Group is working with raw material suppliers. In addition to screening and identification of the most emission-related categories, A qualitative method for scoring for each of the suppliers has been developed based on the level of commitment and awareness on sustainability and decarbonisation issues.

In addition, a significance matrix has been built to classify the relevance of the various raw materials with respect to the Group's business. This matrix correlates the "emissive class" of the product category with the "complexity" of the productive sector.

The key areas to be addressed are those relating to the production of lime, ferroalloys and iron/steel, while coal producers, electrodes and refractories, although significant, have a lower impact due to the lower weight of CO<sub>2</sub> emissions on the overall assessment.



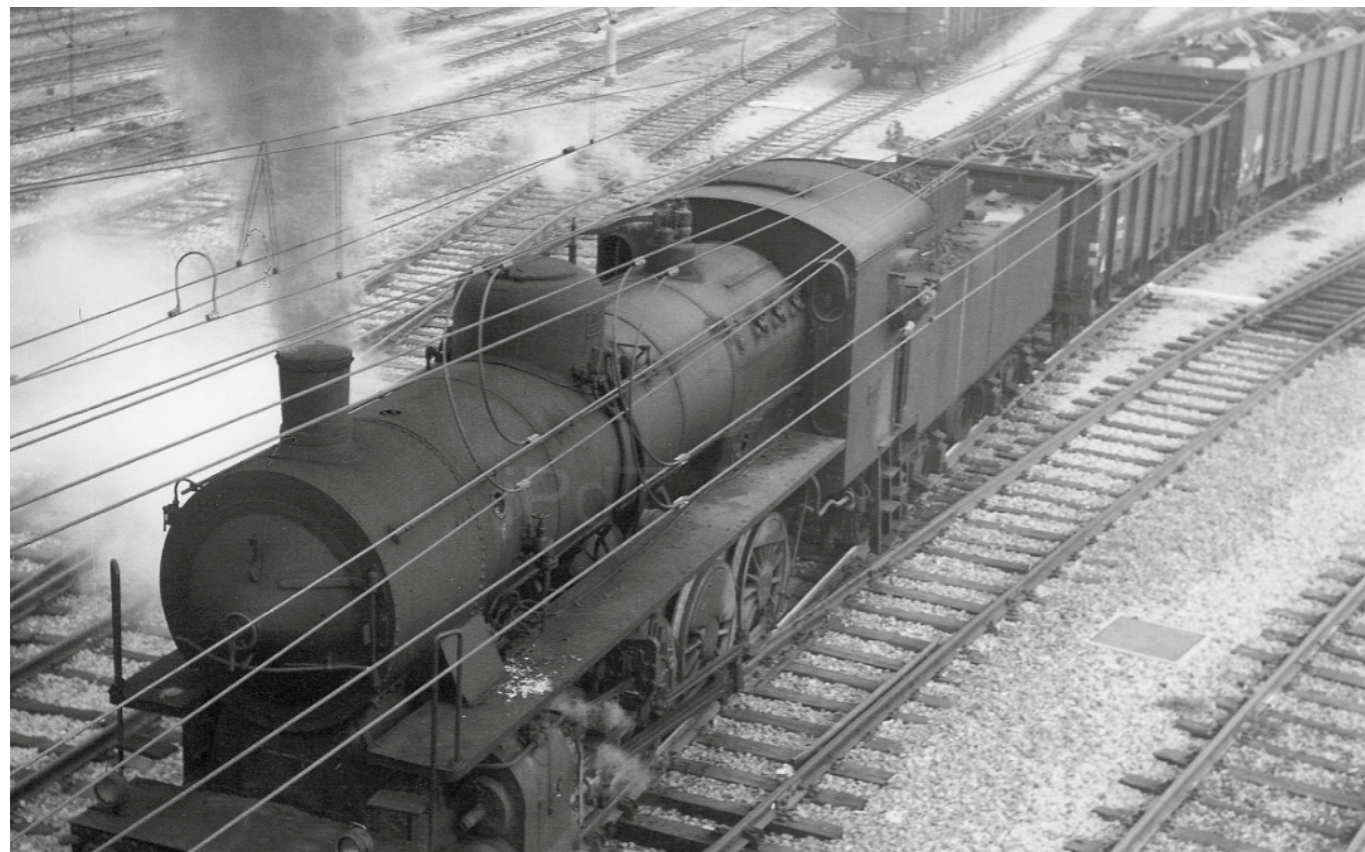
## Focus on transports

Following the results of the questionnaires and the interviews conducted, a qualitative methodology was developed for assigning a score to each conveyor that would enhance the commitment to environmental sustainability. The assessment criteria shall include:

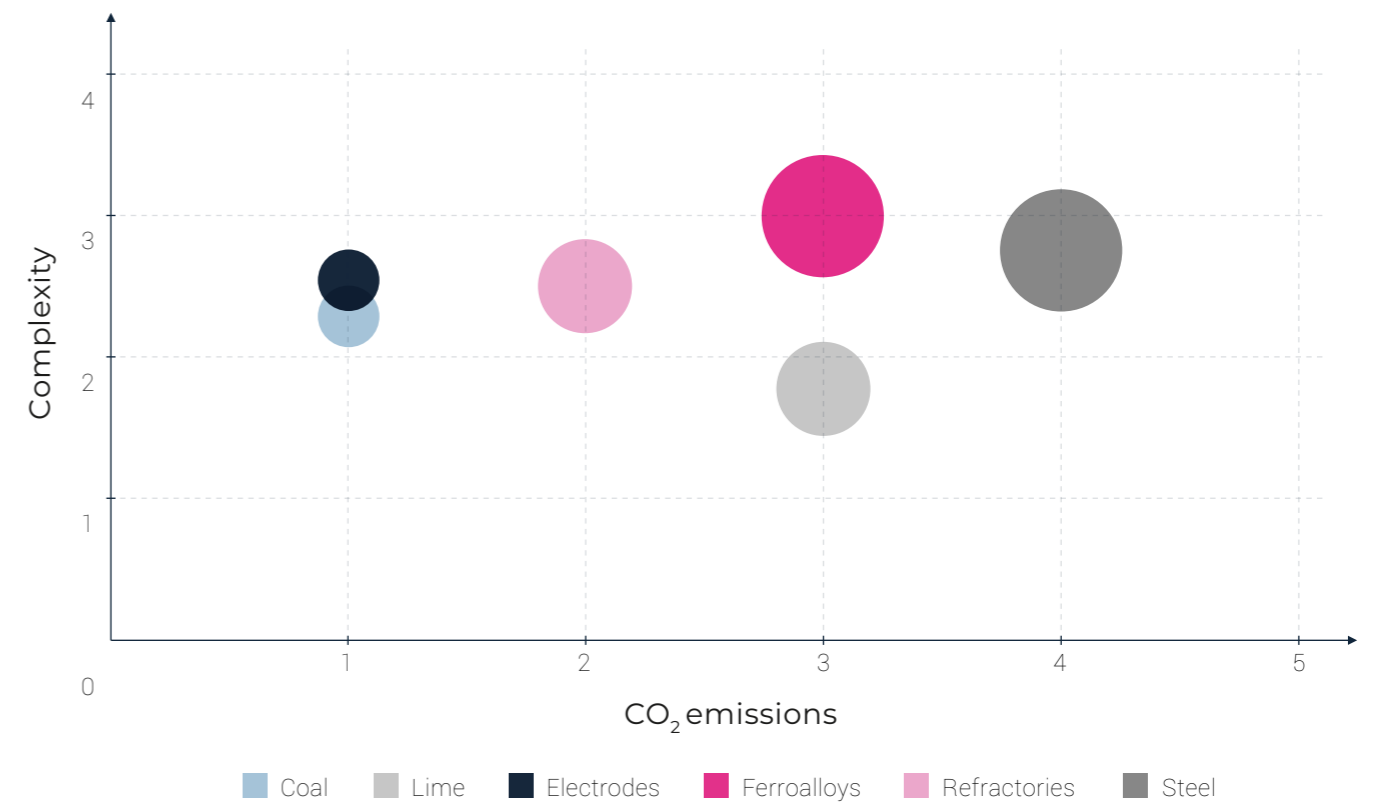
- freight modes (e.g. intermodal, rail or road);
- emissive class of the fleet of vehicles used;
- calculation of CO<sub>2</sub> emissions by the transporter;
- direct involvement in sustainability actions.

In order to improve stakeholder engagement, AFV Beltrame group has established a strategy that is developed on two lines:

- map possible collaborative initiatives with transporters on sustainability issues, such as switching to an intermodal mode of transport or alternative fuels;
- strengthen cooperation with transporters in order to encourage them to improve the accuracy of emissive data provided.



Significance Matrix



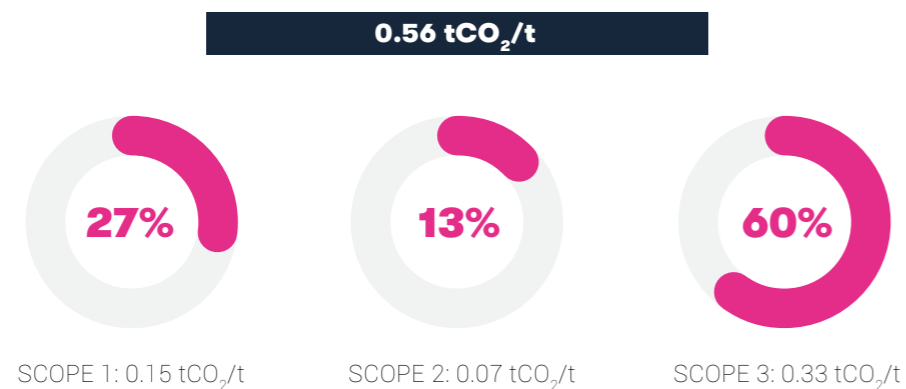
# Future developments

AFV Beltrame Group can offer its customers products with a carbon footprint verified by a third party according to international standards.

Today the company offers the market two different proposals:

- steel with certified Scope 1+2+3 (upstream) emission values lower than the average of European EAF furnaces. Value represents the weighted average of the Group and enhances the path taken by the company over the years in terms of efficiency.
- carbon neutral steel (Chalibria) related to certified Scope 1+2+3 (upstream) emissions, which enhances the decarbonisation plan adopted by the company and will provide added value in competitive terms for the coming years.

## Emission intensity of AFV Beltrame Group: Scope 1+2+3 (upstream) for steel and rolling mill [tCO<sub>2</sub>/t finished product steel, 2022].



## Chalibria, carbon neutral steel now

Since autumn 2022, the Group has been offering Chalibria, carbon neutral steel, and continues its commitment to implementing projects that will reduce CO<sub>2</sub> emissions.

### Chalibria is AFV Beltrame Group's carbon neutral steel for Scope 1+2+3 (upstream) emissions along the "cradle-to-gate" value chain.

The carbon footprint calculation for Scope 1+2+3 (upstream) is verified by the RINA accredited Certification Body in accordance with 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), RINA's digital platform that supports audit activities: **this platform guarantees traceability, integrity and transparency of data along the value chain "cradle-to-gate" for Chalibria steel.**

AFV Beltrame Group quantifies emissions, at plant level, for Scope 1+2+3 (upstream) for steel mill, rolling mill and upstream transport (including material transport between plants) across the platform. This allows you to have KPI specific CO<sub>2</sub> emissions for the "cradle-to-gate" value chain for all plants.

The approach used for Chalibria products guarantees a coverage of more than 80% of CO<sub>2</sub> emissions from the entire product life cycle (cradle to grave)<sup>1</sup>.

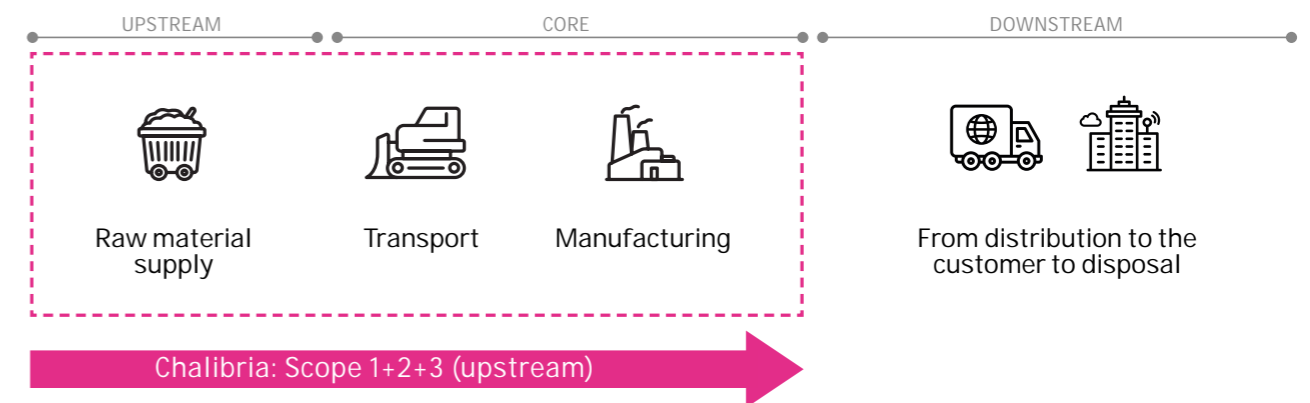
This is supported by the fact that they have also been quantified and, where not available, estimated downstream emissions of products and this contribution was lower than 20% of the total issued at group level.

For the emissions, which the Group is not able to reduce through the projects included in the Decarbonisation Plan yet, the carbon neutrality of Chalibria is obtained by offsetting CO<sub>2</sub> emissions through the purchase of carbon credits on a voluntary basis, in line with the PAS2060 certification (Specification for the demonstration of Carbon Neutrality).

The commitment of AFV Beltrame Group, through the investments of the Decarbonisation Plan, will allow the reduction of the emissions of the "cradle-to-gate" value chain and consequently a decreasing purchase of carbon credits. This commitment was revised in 2023 through GHG inventory update and third-party verification of emission reductions overall resulting from the implementation of completed projects.



### Boundaries of Chalibria's carbon neutrality



<sup>1</sup> Exclusions from the Chalibria perimeter:

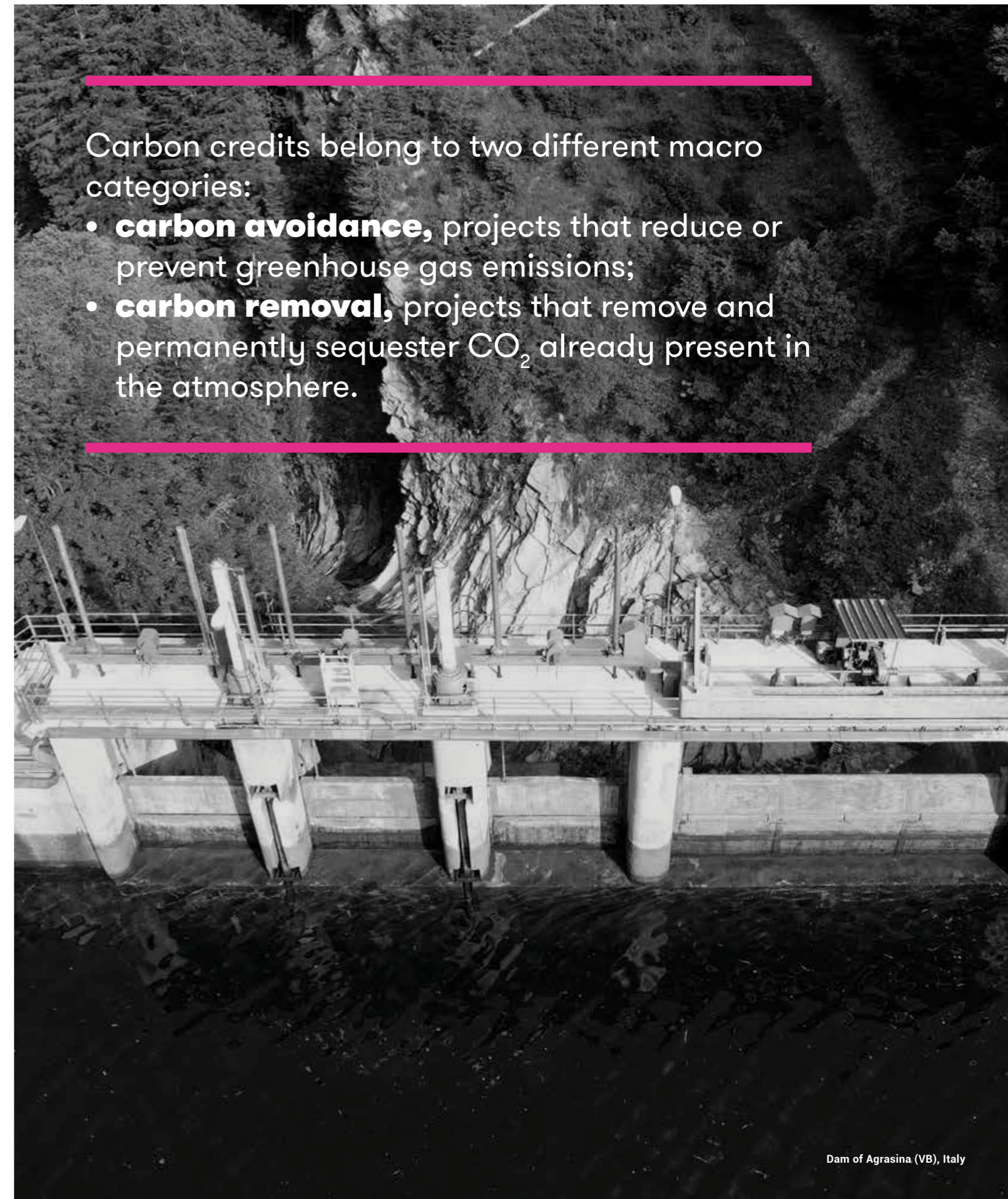
- Downstream transport from the gate to the customer AFV Beltrame has been calculated in the inventory ISO 14064-;
- The phases of transport from customer AFV Beltrame ad end user and those related to the end of life of the product have been estimated for the calculation of the contribution in view cradle- to- grave but excluded from the inventory according to ISO 14064-1 as insignificant and with a high degree of uncertainty about the activity data.

Voluntary carbon credits are certificates that can be purchased by companies to offset the residual CO<sub>2</sub> emissions generated by their activities. These credits are generated by projects that help remove or reduce the amount of CO<sub>2</sub> in the atmosphere. AFV Beltrame Group carefully selects projects that generate carbon credits basing its purchasing process on evaluation criteria that ensure the integrity and quality of the project, in particular:

1. Procurement of CO<sub>2</sub> credits from Program Operators included in the IETA-ICROA Code of Conduct (e.g. VCS - Verified Carbon Standard, CDM - Clean Development Mechanism, GS - Gold Standard) validated and verified by independent and reliable third parties
2. Selection of projects that meet the minimum eligibility criteria (additionality, permanence, no-double counting), preferring those subject to a robust system of quantification of CO<sub>2</sub> emissions (reduction and/or removal)
3. Ensure that projects contribute not only to the reduction of CO<sub>2</sub> emissions but also to a wider positive impact on the environment, local communities and sustainable development (sdgs).

The carbon neutrality certificate of Chalibria steel, sent to our customers, shows the reference project for the carbon credit used for the compensation, together with the verification of the compliance of carbon credits issued by RINA in line with the PAS2060 certification

<sup>2)</sup> The purchase of carbon credits is classified according to different price classes: A) below 10 €/tCO<sub>2</sub>; B) between 10 and 40 €/tCO<sub>2</sub>; and C) above 40 €/tCO<sub>2</sub>. The project purchased by AFV Beltrame Group falls into class A). All purchase and cancellation transactions are recorded and stored by AFV Beltrame Group as evidence in the case of checks.



## Carbon credits belong to two different macro categories:

- **carbon avoidance**, projects that reduce or prevent greenhouse gas emissions;
- **carbon removal**, projects that remove and permanently sequester CO<sub>2</sub> already present in the atmosphere.

**AFV BELTRAME GROUP**

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