2022 Sustainability Report

Consolidated Non-Financial Statement drafted in accordance with Legislative Decree 254/16

CVA

100% CLEAN ENERGY

Communication and Sustainability Team | CVA

Knowledge Partner The European House Ambrosetti

Letter to the Stakeholders

Marco Cantamessa
Chairman

Giuseppe Argirò
Chief Executive Officer

Enrico De Girolamo
General Manager

Sustainability is the cornerstone of our future prospects. We are committed to creating a positive impact on the world through sustainable practices, promoting a balance between economic, social and environmental aspects. Together, we will build a better, more resilient future in harmony with the planet.

Dear readers,

the year that has just ended has highlighted more than ever the extent to which climate change requires institutions and companies to invest decisively in long-term adaptation strategies.

The year 2022 was characterised by contextual conditions that were as unpredictable as they were unprecedented, caused in large part by the energy crisis and the droughts resulting from the now full-blown climate change.

The energy *shock*, exacerbated by the Russian-Ukrainian conflict, caused severe repercussions in the markets as well as a sudden rise in inflation. In September 2022, the energy price was 40.8% higher than in the same period last year. Against this backdrop, EU Member States responded with emergency measures that have, however, brought the momentum for energy transition to a standstill, just think of the re-ignition of decommissioned coal-fired power plants in an attempt to curb Europe's dependence on Russian gas.

In the face of these transitional and contingent actions, however, it is crucial to remain focused on the trajectory mapped out: the urgency of managing and mitigating climate change risks can only be answered by Europe's ambitious 2050 climate neutrality targets and confirm the need for a concerted effort to accelerate the energy transition. With this in mind, the EU has further strengthened the commitments already made to tackle energy dependence with the approval of REPowerEU, the European Commission's plan to make Europe independent of Russian fossil fuels well before 2030 by diversifying energy supply sources, accelerating the energy transition through the development of renewables, and adopting measures to encourage energy saving and the conscious use of energy by citizens, businesses and organisations.

In addition to the complex geopolitical and economic situation, 2022 was characterised by the evidence of climate change, going down in history as the hottest year since 1880. Rising temperatures hit Europe and Italy in particular hard, with a record national average temperature of +1.15°C. The high temperatures were accompanied by long periods of severe drought, which had a negative impact on hydroelectric production. The country is experiencing a very bitter taste of what the water situation could be in the coming decades, with an increasing scarcity of the primary resource needed for our business. On a national level, the drop in hydroelectric production was a dramatic -38%, and in the specific case of CVA -28%.

The challenges outlined by climate change confirm the validity of the **strategy of diversification of renewable** energy sources for energy production that the Group has established with the Integrated Plan to 2027. Recent industrial transactions increase CVA's role in the energy transition challenge: the acquisition of Sistema Rinnovabili and the development of agri-voltaics brought about by the acquisition of Bonifiche Ferraresi will allow the Group to reach 514 MW of installed wind and photovoltaic capacity by 2024. These operations, also supported by *sustainability-linked* financial instruments, allowed for the acceleration of the implementation of CVA's development strategy, making it possible to achieve the objectives of the Integrated Plan in advance.

Moreover, the complexity of this period in history requires us to listen even more closely to **the local area and the communities** living there in order to create a resilient system based on trust and aimed at maximising our contribution to the growth and decarbonisation of the economy.

Over the course of 2022, we shared several periods of reflection and discussion with the *stakeholders* involved in the *revamping of* our Hône 2 and Chavonne hydroelectric power stations, which allowed us to harmonise design and production needs with those of the area.

At the same time, always paying attention to the needs of our host territories, maintenance and modernisation activities continued on our plants, dams and distribution networks, enabling us to maintain the integrity of our assets, the safety of energy supply and continuity of service. In particular, in spite of the uncertain framework of the concessions that are about to expire, the professionalism and reliability that have always been our hallmark have called on us, and continue to oblige us both to fully complete the investments undertaken on our hydroelectric plants and to look to the future with new projects.

Thanks to industrial investments, as part of a long-term vision, CVA will be a key player in the energy transition of the Aosta Valley and the country, in its role as a major public operator producing 100% GREEN energy. We are aware that this process requires a great sense of responsibility to make sustainability scenarios compatible and feasible. The whole world is looking at the energy sector with great expectations and it is imperative that its operators play their part. CVA is more than ever ready to take on this challenge, convinced that only through a common commitment can the goals be achieved.

While constantly renewing itself by looking at new challenges, however, CVA has not diminished its efforts to remain at the side of its customers, who in 2022 have been overwhelmed by increasing energy prices and rising inflation, with serious repercussions for households.

To counter this emergency, CVA has been able to adopt, with timely decisions, commercial solutions attentive to its customers: starting in February 2022, we have launched *Discount40*, an offer that provides, for the whole of 2023, a reduction in the bill on the energy component equal to 40% for all Aosta Valley households and 10% for other users. CVA's responsiveness thus made it possible to turn a moment of crisis into new opportunities, in accordance with the expectations of its *Stakeholders*.

To seize these opportunities and pursue industrial development and the achievement of its goals, the Group has also invested in its most valuable resource, its **people**. The year 2022 saw as many as 57 new staff hired: significant growth that confirms the virtuous link between growth and development, also in terms of the distribution of results across the territory and the labour market.

At the end of the year, we recorded turnover of Euro 1.7 billion and a margin of Euro 295.81 million, marking a change of 52.7% compared to the previous year. The **extraordinary results achieved** during the year and the publication of this document were possible thanks to the commitment and dedication of all the people at CVA. We would like to thank each and every one for contributing significantly to this achievement with professionalism and dedication.

Confident in a future full of shared and sustainable opportunities, we wish you happy reading.

Mont Blanc | Aosta Valley

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2022 at a glance

The past year was full of **significant events** for the entire CVA Group.

We summarised the **most representative values** within each *pillar,* which were respectively **assigned a colour**. Each aligned with the relevant **Sustainable Development Goals**.

Planet

People

Community

Prosperity & Governance

647 EMPLOYEES

+1.7 BILLION €
Turnover

1,105 MW
installed renewable power

164,000,000 Euro
NET PROFIT

+1,000 STUDENTS
involved in sustainability education projects

+98.5%
permanent contracts

2,371 GWh
the energy produced by water, wind and sun

+8.8%
new hires

295 MILLION €
EBITDA

43%
LOCAL SUPPLIERS
of CVA worth €37 million

5 accidents
OUT OF 1,013,083 HOURS WORKED

+1 Million
tonnes of CO_2 avoided in 2022 thanks to renewable production

POSITIVE IMPACT
zero emissions by 2024

42 MW
the new photovoltaic capacity operational from 2023

+150 MW
of agri-voltaic development in 2030

APPROX. 84,000 CUSTOMERS
served with the energy of CVA

+1.5 BILLION €
Distributed economic value

FUTURE PROOF
Smart assets for the energy transition

ESTIMATED +804 MW
renewable capacity in 2027

ALMOST 18,000 HOURS
training and refresher courses

+200 million €
investments as at 2026 for safe and resilient assets

122,000,000 Euro
payments to the public administration

+90%
plants with automation

Cyber resilience 27001 and 27701 certifications

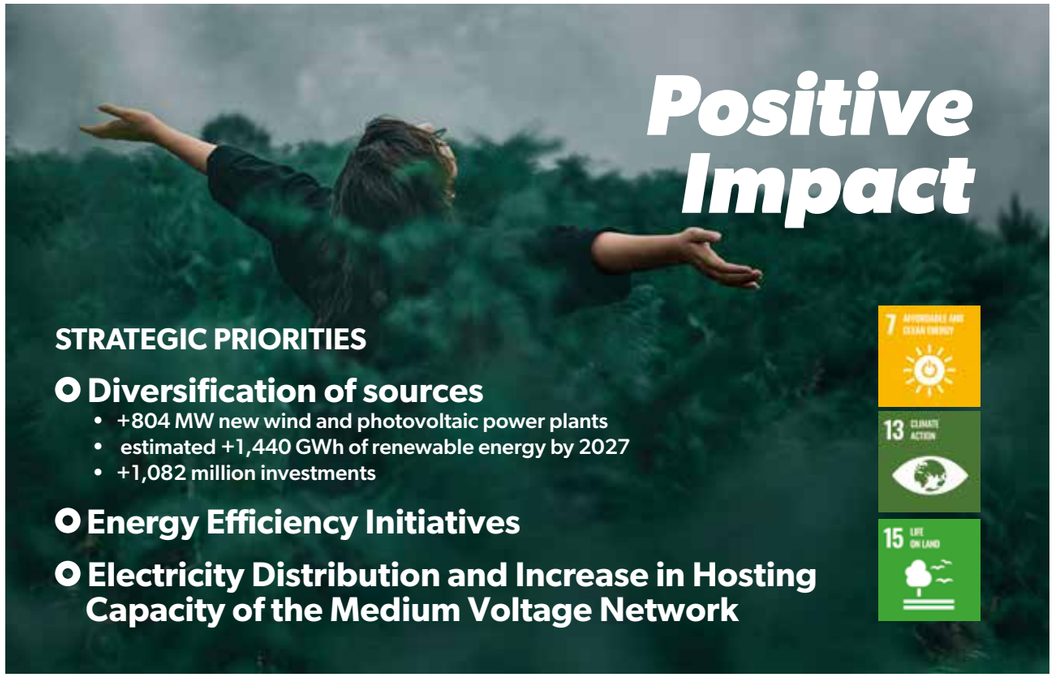
CVA: Community Company

THE INTEGRATED PLAN 2023-2027*

The 2023-2027 Integrated Plan represents the integration of CVA's **Strategic Industrial Plan**, with an outlook to 2027, and **specific sustainability-related objectives**. These saw the light of day in 2021 following the work of three dedicated, cross-functional groups, which involved all Group companies in the analysis of improvement objectives related to material topics.

The Integrated Plan aims to combine **corporate development with environmental and social sustainability** in order to generate shared value for CVA's stakeholders in the long term and to contribute to the energy transition. By means of specific lines of action and qualitative and quantitative objectives that can be measured over time, the Integrated Plan provides a response to the most pressing global challenges as defined by the United Nations Sustainable Development Goals (SDGs) and **outlines the Group's future development guidelines**, which can be traced back to three macro-categories: *Positive Impact*, *Future Proof and Empowering Communities*.

*The updates to the Integrated Strategic Plan approved in May 2023 are presented here. While the sustainability goals have not changed from what was reported for fiscal year 2022, the industrial development goals in the Plan offer new information that it was deemed appropriate to represent.



TARGET	WHERE WE ARE IN 2022	WHERE WE WANT TO GET TO
1. Zero emissions: reducing CO_2 emissions by 1,083 tonnes by 2030 and analysing emissions throughout the value chain	**Action Plan** data collection consolidated	• Definition of a **zero emission strategy for Scope 1 and 2 emissions** that can be certified according to the **Science-Based Target** initiative (SBTi) guidelines, in line with the scientific targets for tackling climate change • **Construction of Scope 3 CO2 emissions baseline** to optimise monitoring and variation over time, and definition of improvement actions
2. Resilient Ecosystems	**Comparison with 6 associations** for Nature Based Solutions (NBS) projects	• Selection and participation in active **Nature-Based Solutions** (NBS) projects nationwide • Selection and participation in **offsetting and reforestation** projects in the region and nationwide
3. Agrivoltaic Feasibility Studies	Development and deepening of **knowledge on the topic** Construction of the Partnership with **Bonifiche Ferraresi**	• Agri-voltaic pilot project to 2025 • **150 MW** agri-voltaic development on BF farmland by 2030
4. Balance and sustainability of withdrawals: 100% of waterways monitored	Defining the **hydrological perimeter**	• **Continuation and strengthening** of study (2014 until today) and research activities related to water resource protection and maintenance of river ecosystems • **Optimisation of water resource use** in respect of environmental protection and Ecological Flow (2021-2024) • **Evaluation of possible production increases** in light of the new release framework (2024-2026)

TARGET	WHERE WE ARE IN 2022	WHERE WE WANT TO GET TO
5. **Secure and resilient assets**: roughly € 30 million/year invested	**+ € 36 million invested** in modernisation and maintenance of assets	• Study, definition and implementation of a **plan of action and investment** for maintaining the integrity and resilience of the production and distribution assets of the Group
6. **Asset 4.0:** >90% of plants with automation solutions with 4.4.0 maintenance projects	Software **start-up achieved** on 66% of installed wind and PV capacity **13 Water units with 4.0 monitoring**	• Equipping wind and photovoltaic power plants with software to **analyse machine performance** and optimise operating approaches • **4.0 Technologies** to improve maintenance strategies for hydropower plants • Increasingly **smarter and digitised grids**
7. **100%** of slopes and relevant areas monitored with satellite technologies	**135 km² monitored areas out of 320 km²**	• **Monitoring through satellite technologies** of 100% of the territories and slopes where CVA is present with its facilities • Implementation of **additional insights and actions** on particularly relevant areas (e.g., dams)
8. Prevention of climate risks	**Completion of analysis of TCFD guidelines** and industry benchmarks Defining the **hydrological perimeter**	• **Performance of an analysis of the climate risks and opportunities** on CVA's assets according to the guidelines of the Task Force on Climate-Related Financial Disclosures (TCFD), with a specific focus on the hydroelectric sector • Down scaling IPCC scenarios in Aosta Valley and updating climate scenarios
9. Cyber resilient:	**Acquired Certifications ISO 27001 and 27701**	• I**SO 27001 certification** in the area of information security and **ISO 27701 certification** in the area of data privacy on business processes and customer management, in relation to remote control and plant maintenance as well as related production plans

TARGET	WHERE WE ARE IN 2022	WHERE WE WANT TO GET TO
10. Ci Vuole Ascolto (It takes listening): listening processes for the most relevant projects and >3 meetings/year for listening and discussion	**Meetings with the populations and administrative** bodies involved in the renovation of Hône and Chavonne 18 interviews with local and national SHs to **update materiality** Event with associations for the inauguration of the inclusive Giri d'Energia (energy tours) routes	• Initiation of **listening and discussion projects with key stakeholders**, at least 3 every year.
11. CVA for schools: +50% students reached each year	Implementation of **two training modules for schools** on Agenda 2030 and Climate Change **40 teachers in total involved, more than 1000 participating students** Preliminary **assessment of STEM scholarships** for girls launched	• **Continuation of the Labenergie project and increase in the number of students involved** in environmental education activities each year (from 2023) • **Raising local awareness of STEM pathways, increasing the participation of girls**, with the provision of 10 scholarships by 2026
12. Corporate volunteering	**Benchmark** analysis	• Activation of a **corporate volunteer programme** in support of **local institutions**
13. Upskilling and reskilling: >60% business population	**Involvement of about 35% of the corporate population.** 86% of activated users were enrolled in at least one course, and of these 81% attended at least one class	• Activation of targeted **training and skills development initiatives** in terms of upskilling and reskilling, on an annual basis through the activation and maintenance and enhancement of the company's digital-for-digital training platform

ABOUT US

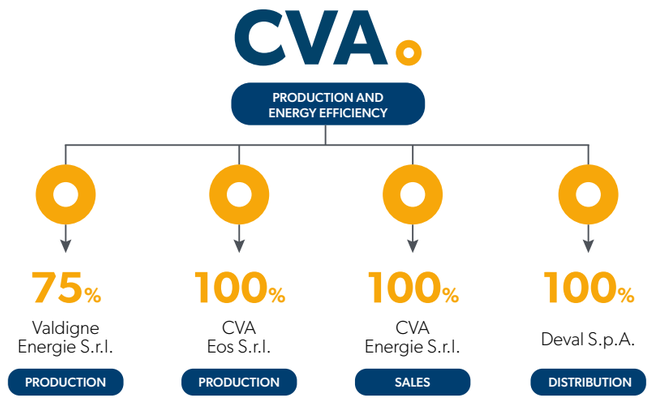
THE 2022 RESULTS

The CVA Group was founded in 2001 following the acquisition of Enel's entire hydroelectric structure in the Aosta Valley region and to supplement some of the plants it already owned. Today, it is one of Italy's leading energy service *providers*, active across the entire supply chain from production to sales and distribution**.** The company's *core business* consists of the **production of 100% renewable electricity**, making CVA one of the leading hydroelectric power producers in Italy[1].

With a view to assuming a central role in the energy transition, in 2021 CVA adopted an **Integrated Strategic Plan to 2027**, which envisages an increase in energy production from renewable sources, thanks to the revamping of hydroelectric power and major investments in new wind and photovoltaic plants, which will allow for an **increase in installed capacity of 804 MW** throughout Italy. In addition, capital placements in innovative technologies, upgrades of existing facilities and energy efficiency projects will further contribute to **mitigating climate-altering emissions**.

The CVA Group is controlled by its parent company, Compagnia Valdostana delle Acque S.p.A. – Compagnie Valdôtaine des Eaux S.p.A. - wholly-owned by the regional finance company Finaosta S.p.A., which in turn is controlled by the Autonomous Region of Aosta Valley. The Group operates through four subsidiaries and two associated companies, active across the entire energy value chain: from **production** to **distribution, sales and energy efficiency**. Each company in the Group has a specific mission and objectives in the electricity sector, which aim to create business opportunities while respecting the shared values of **sustainability, innovation and safety**.

The corporate structure of the CVA Group as at **2022** is shown, in which the fully consolidated companies as at 31.12.2022 have been taken into account consistently with the scope of the consolidated financial statements.



The composition of the Group

Energy production from hydroelectric sources is held by the parent company **CVA S.p.A.**, which owns 30 hydroelectric plants, and by **Valdigne Energie S.r.l.**, which owns two hydroelectric plants.

Valdigne Energie is 75% owned by CVA and 25% by the municipality of Pré-St.-Didier. CVA S.p.A. also owns four wind power plants located in Aosta Valley, Lazio, Tuscany and Apulia and four photovoltaic plants in Aosta Valley and Piedmont.

CVA Eos S.r.l. has three other wind power plants in Apulia and one in Campania. At the end of 2022, with effect from 1 January 2023, the parent company CVA S.p.A. transferred its photovoltaic and wind power plants to CVA Eos S.r.l., thus operating a corporate rationalisation aimed at a specialisation by production source, which sees CVA Eos S.r.l. involved in wind and solar production developments throughout Italy.

Through **CVA Energie S.r.l.**, the Group offers energy sales services. A wholly-owned subsidiary of CVA, CVA Energie has been operating as a wholesaler in the Italian electricity market since October 2002.

In the *Energy Management* area, CVA Energie operates in the energy markets with trading activities, balancing the energy produced by the CVA Group and the energy provided and for purposes of hedging against the risks related to the fluctuation of energy prices.

A wholly-owned subsidiary of CVA, **Deval S.p.A.** is the main electricity distributor in Aosta Valley and offers its service to about 130,000 consumers located in 69 (out of 74) municipalities of the region. The CVA Group also holds a 10.98% stake in **Telcha S.r.l.**, a company managing the district heating project for the city of Aosta, and a 13.7% stake in Le **Brasier S.r.l.,** responsible for the district heating plant located in Morgex.

The Group's financial results

The Group ended 2022 with turnover of EUR 1.7 billion and an EBITDA of EUR 295.3 million, an increase of 53% compared to 2021. The financial results of the CVA Group are shown below.

Economic results

Euro thousands	2022	2021	2020
Turnover	1,728,280	710,645	536,182
EBITDA	295,281	193,412	138,933
Operating income	236,187	132,070	87,198
Net profit attributable to the Group	163,975	133,441	59,977

Equity information

Euro thousands	2022	2021	2020
Net invested capital	534,157	970,882	830,257
Consolidated shareholders' equity of the Group	869,985	814,703	809,694
Consolidated shareholders' equity of the Group and minority interests	878,873	824,197	817,344
Net financial position	(344,716)	146,684	12,914

Overview of Aosta Valley mountains

We continue to diversify our portfolio for the sustainable development of the country

Acquisition of SR Investimenti S.r.l

In line with the commitments made in the Integrated Plan, the Group continues to **diversify into renewable energy sources**, strengthening its position as a central player in the energy transition challenge. In December 2022, CVA signed a preliminary contract for the **acquisition** from the funds Pioneer Point Partners and Davidson Kempner European Partners LLP, of **100% of SR Investimenti S.r.l.**, a company that owns 42 MW of operational photovoltaic plants, 194 MW of authorised projects and 846 MW of projects under development, plus 1,200 MW for future projects.

As shown in the table below, the transaction will allow the Aosta Valley Group to **consolidate its position as Italy's leading 100% renewable operator**, reaching 514 MW of installed wind and photovoltaic capacity by 2024, thanks to the 292 MW contributed by Sistema Rinnovabili. The acquisition will also generate an **estimated incremental cumulative EBITDA** contribution of EUR 492.3 million for the five-year period 2022-2026. Moreover, this transaction is part of the strategic path outlined in the Business Plan to 2026, which envisages around EUR 650 million in investments, of which more than EUR 410 million for new renewable power plants.

DEVELOPMENT OF INSTALLED CAPACITY FOLLOWING THE ACQUISITION OF SR INVESTIMENTI

(MW)	Operational in 2022	Installed in 2023	Installed in 2024	Total in operation as at 2024
CVA	170	37.2	15.48	222.68
SR Investimenti	42	80	170	292
Cumulative total	212	117.2	185.48	514.68

The turning point with Bonifiche Ferraresi

The acquisition will enable CVA to play a leading role in the energy transition challenge. **The growth in photovoltaics complements the Group's historical and deep-rooted presence in hydroelectricity** and further consolidates its profile as Italy's leading renewable energy operator, in line with its strategy of diversifying renewable energy sources for power generation. The transaction is also of particular industrial significance **as it will enable CVA to meet the targets set in the strategic plan to 2027 ahead of schedule**.

CVA will be able to exploit its technological and plant management skills, contributing to the construction of a renewable energy mix aimed at **improving prices for households and businesses, as well as greater energy independence and security**.

CVA will also be able to achieve diversification and expansion objectives in green energy generation through the realisation of authorised and pipeline projects with a consequent significant impact on the Valdostan socio-economic fabric.

Alliance between Bonifiche Ferraresi S.p.a. and CVA for agri-voltaics

Also in December 2022, CVA **subscribed to the purchase of a 3% stake in the share capital of Bonifiche Ferraresi S.p.A. Società Agricola -** Italy's largest agricultural company by Utilised Agricultural Area (UAA), controlled by BF S.p.A., listed on the Milan stock exchange.

> **Through this partnership, CVA intends to develop an additional 150 MW of photovoltaic energy and consolidate the objectives of the Group's Strategic Plan, with the aim of achieving a balanced mix of production exclusively from renewable sources and a redistribution of the risk profile. The deal is particularly important for us because we see it as a "pathfinder project in the development of the national agri-voltaic sector, which is crucial for the achievement of the EU renewables target" said Giuseppe Argirò, CEO of CVA.**

This operation is part of the broader "Investment Agreement" that envisages the creation of a strategic partnership aimed at **developing an agri-voltaic pipeline** in the areas of Bonifiche Ferraresi, such as the Jolanda di Savoia hub, and then opening up to important regional and national developments through the Consorzio Agrari Italia (CAI) network. Through its own *know-how* and that recently acquired through the integration of SR Investimenti, CVA will invest its resources in the development and construction of the plants.

This integration will allow quality project development in the area of renewables contributing to the energy transition process, as envisaged by the **National Integrated Energy and Climate Plan (so-called "PNIEC")** and the decarbonisation and energy transition strategy supported by the European Union's "**REpowerEU**". In fact, the aim of the two companies is to start a real national pilot project on the agri-voltaic front and contribute to the energy transition goals set by the country, which will require the development of 10 GW of photovoltaic energy by 2030.

Recent acquisitions enhance CVA's role in the energy transition challenge, making the Group a leading player on the national scene.

Producing energy in harmony with the environment

Agri-voltaics is based on the **use of the land for both the production of photovoltaic energy, thanks to the installation of solar panels, and for agricultural and livestock farming activities**. More specifically, the photovoltaic panels are mounted high enough above the ground below to allow traditional cultivation practices.

In addition to energy production, this system helps reduce the negative effects of solar radiation on humans and increases crop productivity, protecting biodiversity through **improved** soil **conservation** and protecting the climate through renewable electricity production. No less important, agri-voltaics increases the profitability of agriculture in a broad sense, leading to increased land-use efficiency **and reducing the competition between energy production and agricultural production**.

THE ALIGNMENT OF CVA WITH THE EUROPEAN TAXONOMY

The European Taxonomy - approved by **EU Regulation 2020/852**[2] - represents the flagship initiative of the Sustainable Finance Action Plan launched in 2018 by the European Commission. The objective of the Strategy is to identify **the "degree of eco-sustainability" of economic activities**, increasing the transparency of information available to the market about companies' sustainability performance and strategies, for the benefit of consumers and investors.

In particular, the Taxonomy introduces a **unique classification system at international level for the identification of eco-sustainable economic activities**, i.e. those that can make a substantial contribution to the achievement of at least one of **six environmental objectives** identified by the Regulation: climate change mitigation, climate change adaptation, sustainable use and protection of water and marine resources, transition to a circular economy, pollution prevention and control, and protection of biodiversity and ecosystem health.

In 2021, the European Commission adopted the ***Climate Delegated Act***[3], which defines technical screening criteria and "Do No Significant Harm" (DNSH) requirements only for activities that can contribute to the achievement of the first two climate goals of **mitigation** and **adaptation**. In 2022, the EC, following a negotiation phase between the Member States, introduced the ***Complementary Delegated Act***[4], which amends the Climate Delegated Act by introducing the activities and related criteria to determine the sustainability or non-sustainability of energy generation from **nuclear** and **natural gas**. To date, the Taxonomy has identified **109 economic activities** organised into **13 sectors**, of which 86 activities can make a substantial contribution to both the climate change mitigation and adaptation objectives, 8 only to mitigation and 15 only to adaptation.

For the reporting year 2022, in line with the guidance of the ***Disclosure Delegated Act***[5], non-financial companies that fall within the scope of Legislative Decree 254/2016 for the annual reporting of non-financial information, and therefore subject to EU Regulation 2020/852, are required to publish a disclosure of the **percentage share of turnover, capital expenditure (CapEx) and operating expenditure (OpEx) attributable to eligible economic activities and aligned with the Taxonomy, with reference to mitigation and adaptation objectives**.

Eligibility and alignment of the CVA Group

In order to meet the disclosure requirements of the Taxonomy, in 2022 CVA retraced the cross-Group process carried out in the first year of application of the Regulation, a project managed by the Innovation and Sustainability Strategy Area and which actively involved, in addition to the companies in the reporting perimeter, the Group's Operations Department and its Administration, Finance, Control and Services Department.

The first step involved **updating the eligibility analysis** to identify the activities carried out by CVA Business Units in 2022 that match those listed in Annexes I and II of the *Climate Delegated Act*. With regard to the Group's *core* business, the updated analysis returned a result in line with the previous year: **10 eligible economic activities**, belonging to **3 sectors of** the Taxonomy: "Energy", "Construction and Real Estate" and "Professional, Scientific and Technical Activities".

Furthermore, in accordance with the provisions of the Regulation, **in 2022 the Group carried out the analysis of the alignment of eligible assets to the Taxonomy** through the verification of three categories of technical criteria.

CRITERIA FOR SUBSTANTIAL CONTRIBUTION

For each eligible activity, compliance with the **technical screening criteria** necessary to establish the substantial contribution to the achievement of the mitigation and/or adaptation objective was verified, actual technical thresholds that establish the limits within which the activity is able to meet the first requirement for Taxonomy alignment. As an example, but of particular relevance to CVA's core business, are the criteria for activity 4.5 "Electricity generation from hydropower", for which the Group was 100% aligned. In fact, **all of the Group's 32 hydropower plants meet the criteria for the contribution to climate change mitigation target**: the 18 run-of-river plants are directly aligned as they do not have a reservoir, while for all the other 14 basin and tank plants, compliance with the power density threshold of **more than 5W/m²** was verified, taking the reservoir as the reference area.

100%

activities aligned to the first two climate objectives of the Taxonomy

CRITERIA FOR "*DO NO SIGNIFICANT HARM*" (DNSH)

For each eligible activity that met the criteria for a substantial contribution to at least one of the two climate objectives, the technical and regulatory requirements were checked to **ensure that the activity in question would not cause significant harm to the other environmental objectives** defined in the Regulation. This analysis included the verification of both **specific criteria**, which impose ad-hoc technical or regulatory verifications for each activity and objective, and **general criteria**, which refer to compliance with European or national regulations or to the performance of verification activities on environmental aspects. The latter are explained in the Climate Delegated Act with special "recurring" requirements that, for CVA-eligible activities, can be found in the Appendices: A. "Generic criteria for adaptation to climate change" and D. "Generic criteria for the protection and restoration of biodiversity and ecosystems".

MINIMUM SOCIAL SAFEGUARDS

In order to complete the alignment to the Taxonomy of the activities identified as eligible by the Group, CVA verified **compliance with the minimum social safeguards on human**

rights and labour protection required by the Regulation. In this regard, a document has been formalised that, by referring to the principles set out in **corporate policies and codes,** ensures business compliance with the OECD Guidelines for Multinational Enterprises and the UN Guiding Principles on Business and Human Rights[6].

Of the total of 10 eligible activities identified by CVA, to date 9 are fully aligned and 1 is partially aligned (activity 7.6).

Eligible activities of the CVA Group aligned to the first two climate mitigation and adaptation targets

Code	Eligible Activities	Target*	Aligned
4.1	Electricity generation using solar photovoltaic technology	M	Yes
4.3	Electricity generation from wind energy	M	Yes
4.5	Electricity generation from hydropower	M	Yes
4.9	Transmission and distribution of electricity	M	Yes
4.10	Storage of electricity	M	Yes
7.2	Renovation of existing buildings	M	Yes
7.3	Installation, maintenance and repair of energy efficiency equipment	M	Yes
7.4	Installation, maintenance and repair of charging stations for electric vehicles in buildings	M	Yes
7.6	Installation, maintenance and repair of renewable energy technologies	M	Yes
9.1	Engineering activities and related technical consultancy dedicated to adaptation to climate change	A	Yes

*Where "M" stands for Climate Change Mitigation and "A" stands for Climate Change Adaptation.

6 Regulation 2020/852, Art. 18: "minimum safeguards [...] shall be procedures implemented by an undertaking that is carrying out an economic activity to ensure the alignment with the OECD Guidelines for Multinational Enterprises and the UN Guiding Principles on Business and Human Rights, including the principles and rights set out in the eight fundamental conventions identified in the Declaration of the International Labour Organisation on Fundamental Principles and Rights at Work and the International Bill of Human Rights"

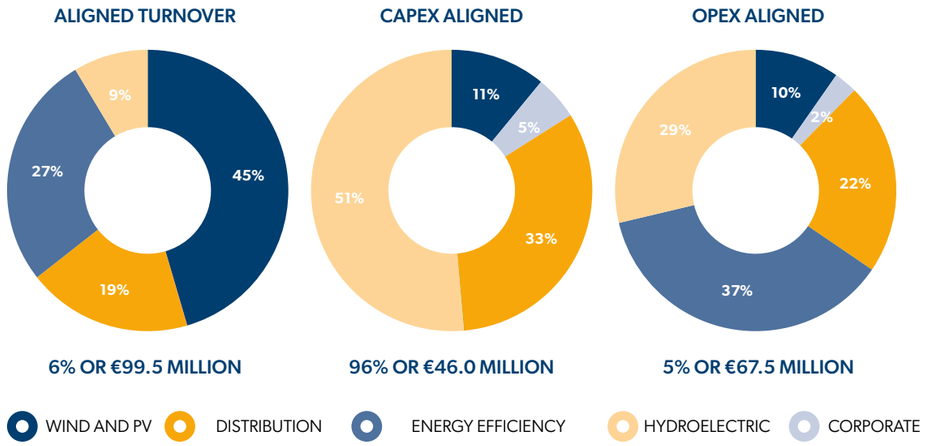
The economic and financial KPIs required by the Taxonomy

In line with the indications of in the *Disclosure Delegated Act*, the Group calculated the percentages of **turnover**, **CapEx** and **OpEx**, related to eligible activities for the first two climate objectives in the Taxonomy.

In relation to the economic results achieved in 2022, CVA recorded an eligible and aligned **turnover** value of 6% and an eligible and aligned CapEx value of 96%. In addition, **eligible and aligned OpEx are equal to 5% of the total taxonomy-eligible operating costs**.

The turnover value, down from the 12.4% recorded for financial year 2021 eligibility, was mostly attributable to the increase in the denominator of the KPI as a result of **rising energy prices**, which boosted the revenue of the Sales BU, which is ineligible for Taxonomy purposes overall. Revenues related to renewable energy production activities, mainly represented by the **intra-group sale of** the energy itself, are not considered admissible by the Regulation given *intercompany* activities and are, moreover, valued from 2022 onwards at a fixed price that was lower than average market values. The share of eligible turnover is essentially attributable to the forms of **incentive of wind and photovoltaic production**, which in 2022 experienced sharp contractions in unit values, both for the feed-in tariffs pursuant to MD 6/7/2012 and for the former Green Certificates, which went from 109.36 €/MWh in 2021 to 42.85 €/MWh in 2022. The reduction in the KPI for operating expenses - eligible OpEx to 17.5% in 2021 - resulted mostly from the expansion of the denominator related to the operations of the Sales BU due to both the exclusion of hydroelectric derivation fees and environmental compensation expenses.

Looking at the 2022 alignment share of the KPIs, **the Group's Business Units contributing most to the turnover result are Wind and Photovoltaics, Energy Efficiency and Distribution**, **with 45%, 27% and 19% of the total** Taxonomy-aligned turnover, respectively. In terms of investments, the BUs making the largest contribution are **Hydro** (51%) and **Distribution** (33%). Finally, as far as operating expenses are concerned, the largest contribution comes from the **Energy Efficiency** BU (37%) and the **Hydro** BU (29%).



In line with what has already been highlighted in the 2021 Report, the **application of the Taxonomy to the CVA Group is penalised by a calculation method that is unsuitable for correctly representing the sustainability of the activities carried out by a company that produces and markets 100% renewable energy**. There are two reasons for this:

- the elimination of the intercompany profit and loss indicators of the Group's production companies, including the holding company CVA S.p.A. and the wholly-owned subsidiary CVA Energie, which deals with the marketing of energy and to which **94% of CVA's turnover** is attributed at the consolidated level. In fact, in order to ensure the comparability of the KPIs required by the Taxonomy, the Disclosure Delegated Act requires companies to apply the same accounting standards used in their Consolidated Financial Statements. Consequently, **for the preparation of taxonomy information, the application of consolidation accounting principles requires the exclusion of intra-group activities and turnover generated by own consumption**. In the case of industrial groups, **this provision may lead to obvious distortions, in particular where eliminations of *intercompany* turnover between companies do not allow a large part of the turnover to be valued**. In fact, intra-group activities comply with organisational and accounting approaches that do not provide an interpretation of the sustainability profile of a company's activities;
- the **inability to count turnover from the sale of energy as an eligible activity**. In fact, to date, the activities identified by the Taxonomy for the first two climate objectives include the production, distribution and transmission of electricity produced from renewable sources, while the sale of energy, even if produced exclusively from renewable sources, is not considered eligible.

Evidence of the above also emerges from the significant deviation between the percentages of alignment to the Taxonomy of the economic KPIs of Turnover and CapEx, 6% and 96% respectively. In fact, as is well known, capital expenditures represent the investments directed by the Group to the *core* business economic activities carried out by CVA and, therefore, mainly related to the production of electricity from renewable sources.

In addition, for the determination of eligible turnover volumes, by carrying out a sources/uses analysis of the energy flows that generate the turnover and excluding hedges of energy sold, it appears that the percentage of 2022 eligible turnover for the CVA Group is 82%.

CVA's alignment in the absence of revenues from the sale of renewable energy

In full compliance with the regulatory framework defined by Regulation 2020/852, CVA did not include among eligible and aligned revenues those related to the sale of energy, which is now excluded from the list of activities that, according to the Taxonomy, can make a substantial contribution to achieving the first two mitigation and adaptation goals.

For this reason, the share of aligned revenues is severely penalised: suffice it to say that the Group's aligned revenues exclude sales referable to 96% of aligned CapEx.

Accounting standards and disclosures

Below is the qualitative information required by the Regulation on the construction of the economic-financial KPIs required by the Taxonomy. In particular, it explains **how the percentages of turnover**, **CapEx** and **OpEx** relating to the Group's eligible and aligned activities and defined on the basis of the indications of Annex 1 to Delegated Act 2178/2021 are established.

The data in CVA's disclosures refer to the Group's performance for the **year 2022**, including all companies included in the reporting scope of the Consolidated Financial Statements, prepared in accordance with International Financial Reporting Standards (IFRS). In particular, **CVA used a dedicated accounting process to identify the economic and financial items needed for the construction of the KPIs required by the Taxonomy**. The data used are traceable and attributable to general, industrial and regulatory accounting.

In particular, in order to obtain the information necessary to construct the economic KPIs, CVA used the dedicated accounting process, which is based on the reporting provided in compliance with IFRS 8 - Operating Segments. In addition, more detailed analytical accounting tools integrated in the collection information system were used to analyse the available data in depth and, when necessary, drivers were used to complete missing information. The information presented refers to the reporting used for the Group's Consolidated Financial Statements for the fiscal year ending **31 December 2022**, in accordance with IFRSs issued by the IASB and the laws and regulations in force in Italy. CVA considers it plausible that the process of determining KPIs may change in the future as a result of possible regulatory developments related to the Regulation.

Below is a summary of how the KPIs required by the Taxonomy are calculated for eligibility and alignment with the activities and the criteria listed in the Regulation.

TURNOVER

- Denominator: total value of net sales that contribute to the definition of "Revenues" in the CVA Group's Consolidated Financial Statements.
- Numerator: net turnover from products and services associated with eligible economic activities aligned with the taxonomy.

CAPEX

- Denominator: total value of capital expenditure contributing to the CVA Group's "Total Investments". The calculation included increases in tangible and intangible assets during FY 2022 considered before depreciation, amortisation, impairment and any revaluation, including those resulting from restatements and reductions in value, for the year in question, and excluding changes in Fair Value.
- Numerator: eligible capital expenditure aligned to the Taxonomy.

OPEX

- Denominator: total value of operating expenses, excluding expenses considered as overheads, expenses for electricity, gas, water, expenses for fluids or reagents necessary for the operation of plant, machinery and buildings, leases, hydroelectric derivation fees and expenses for environmental compensation.
- Numerator: eligible operational expenditure aligned to the Taxonomy.

SHARE OF CVA GROUP TURNOVER FROM PRODUCTS OR SERVICES ASSOCIATED WITH TAXONOMY-ALIGNED ECONOMIC ACTIVITIES

						DNSH Criteria "Do no significant harm"									Category	
Economic activities	**Activity code**	**Absolute turnover (thousands €)**	**Share of Turnover**	**Substantial contribution to mitigation**	**Substantial contribution to adaptation**	**Climate change mitigation (1)**	**Adaptation to climate change (2)**	**Water and marine resources (3)**	**Circular economy (4)**	**Pollution (5)**	**Biodiversity and ecosystems (6)**	**Minimum Safeguards**	**Share of Taxonomy-Aligned Turnover, Year N**	**Share of Taxonomy-Aligned Turnover, Year N-1**	**Qualifying activity**	**Transition activities**
		€	**%**	**%**	**%**	**Y/N**	**Y/N**	**Y/N**	**Y/N**	**Y/N**	**Y/N**	**Y/N**	**%**	**%**	**A**	**T**
A. ACTIVITIES ELIGIBLE FOR TAXONOMY																
A.1 Environmentally sustainable activities (taxonomy-aligned)																
Electricity generation using solar photovoltaic technology	4.1	8,163.17	0.5%	100%	-	Y	Y	Y	Y	Y	Y	Y	n.a	n.a		
Electricity generation from wind energy	4.3	37,082.29	2.1%	100%	-	Y	Y	Y	Y	Y	Y	Y	n.a	n.a		
Electricity generation from hydropower	4.5	8,581.39	0.5%	100%	-	Y	Y	Y	Y	Y	Y	Y	n.a	n.a		
Transmission and distribution of electricity	4.9	18,826.81	1.1%	100%	-	Y	Y	Y	Y	Y	Y	Y	n.a	n.a	A	
Storage of electricity	4.10	4.76	0.0%	100%	-	Y	Y	Y	Y	Y	Y	Y	n.a	n.a		
Installation, maintenance and repair of charging stations for electric vehicles in buildings	7.4	0.12	0.0%	100%	-	Y	Y	Y	Y	Y	Y	Y	n.a	n.a	A	
Installation, maintenance and repair of renewable energy technologies	7.6	26,868.45	1.6%	100%	-	Y	Y	Y	Y	Y	Y	Y	n.a	n.a	A	
Turnover of environmentally sustainable activities (taxonomy-aligned) (A.1)		99,526.97	6%	100%	0%	Y	Y	Y	Y	Y	Y	Y	n.a	n.a		
A.2 Eligible activities not aligned with the taxonomy																
Installation, maintenance and repair of renewable energy technologies	7.6	4,741.49	0.3%													
Turnover from activities eligible for the taxonomy but not environmentally sustainable (activities not aligned with the taxonomy) (A.2)		4,741.49	0.3%													
A.1+A.2 Total		104,268.46	6.0%													
B. ACTIVITIES NOT ELIGIBLE FOR TAXONOMY																
B Turnover from activities not eligible for the taxonomy		1,624,011.34	94.0%													
A+B Total		1,728,279.81	100%													

SHARE OF CVA GROUP CAPEX FROM PRODUCTS OR SERVICES ASSOCIATED WITH TAXONOMY-ALIGNED ECONOMIC ACTIVITIES

						DNSH Criteria "Do no significant harm"									Category	
Economic activities	**Activity code**	**Absolute turnover (thousands €)**	**Share of Turnover**	**Substantial contribution to mitigation**	**Substantial contribution to adaptation**	**Climate change mitigation (1)**	**Adaptation to climate change (2)**	**Water and marine resources (3)**	**Circular economy (4)**	**Pollution (5)**	**Biodiversity and ecosystems (6)**	**Minimum Safeguards**	**Share of Taxonomy-Aligned Turnover, Year N**	**Share of Taxonomy-Aligned Turnover, Year N-1**	**Qualifying activity**	**Transition activities**
		€	**%**	**%**	**%**	**Y/N**	**Y/N**	**Y/N**	**Y/N**	**Y/N**	**Y/N**	**Y/N**	**%**	**%**	**A**	**T**
A. ACTIVITIES ELIGIBLE FOR TAXONOMY																
A.1 Environmentally sustainable activities (taxonomy-aligned)																
Electricity generation using solar photovoltaic technology	4.1	13,970.19	29.1%	100%	-	Y	Y	Y	Y	Y	Y	Y	n.a	n.a		
Electricity generation from wind energy	4.3	1,761.21	3.7%	100%	-	Y	Y	Y	Y	Y	Y	Y	n.a	n.a		
Electricity generation from hydropower	4.5	18,061.36	37.7%	100%	-	Y	Y	Y	Y	Y	Y	Y	n.a	n.a		
Transmission and distribution of electricity	4.9	11,086.21	23.1%	100%	-	Y	Y	Y	Y	Y	Y	Y	n.a	n.a	A	
Storage of electricity	4.10	223.06	0.5%	100%	-	Y	Y	Y	Y	Y	Y	Y	n.a	n.a		
Renovation of existing buildings	7.2	107.27	0.2%	100%	-	Y	Y	Y	Y	Y	Y	Y	n.a	n.a		T
Installation, maintenance and repair of energy efficiency equipment	7.3	664.92	1.4%	100%	-	Y	Y	Y	Y	Y	Y	Y	n.a	n.a	A	
Installation, maintenance and repair of charging stations for electric vehicles in buildings	7.4	81.61	0.2%	100%	-	Y	Y	Y	Y	Y	Y	Y	n.a	n.a	A	
Close to market research, development and innovation	9.1	76.00	0.2%	100%	-	Y	Y	Y	Y	Y	Y	Y	n.a	n.a	A	
CapEx of environmentally sustainable activities (taxonomy-aligned) (A.1)		46,031.82	96%	100%	0%	Y	Y	Y	Y	Y	Y	Y	n.a	n.a		
A.2 Eligible activities not aligned with the taxonomy																
CapEx of activities eligible for the taxonomy but not environmentally sustainable (activities not aligned with the taxonomy) (A.2)		-	0.0%													
A.1+A.2 Total		46,031.82	96.0%													
B. ACTIVITIES NOT ELIGIBLE FOR TAXONOMY																
B CapEx of activities not eligible for taxonomy		1,911.50	4.0%													
A+B Total		47,943.31	100%													

SHARE OF CVA GROUP OPEX FROM PRODUCTS OR SERVICES ASSOCIATED WITH TAXONOMY-ALIGNED ECONOMIC ACTIVITIES

						DNSH Criteria "Do no significant harm"									Category	
Economic activities	**Activity code**	**Absolute turnover (thousands €)**	**Share of Turnover**	**Substantial contribution to mitigation**	**Substantial contribution to adaptation**	**Climate change mitigation (1)**	**Adaptation to climate change (2)**	**Water and marine resources (3)**	**Circular economy (4)**	**Pollution (5)**	**Biodiversity and ecosystems (6)**	**Minimum Safeguards**	**Share of Taxonomy-Aligned Turnover, Year N**	**Share of Taxonomy-Aligned Turnover, Year N-1**	**Qualifying activity**	**Transition activities**
		€	%	%	%	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	%	%	A	T
A. ACTIVITIES ELIGIBLE FOR TAXONOMY																
A.1 Environmentally sustainable activities (taxonomy-aligned)																
Electricity generation using solar photovoltaic technology	4.1	303.67	0.0%	100.0%	-	Y	Y	Y	Y	Y	Y	Y	n.a	n.a		
Electricity generation from wind energy	4.3	6,249.71	0.5%	100.0%	-	Y	Y	Y	Y	Y	Y	Y	n.a	n.a		
Electricity generation from hydropower	4.5	20,987.79	1.5%	100.0%	-	Y	Y	Y	Y	Y	Y	Y	n.a	n.a		
Transmission and distribution of electricity	4.9	14,938.82	1.1%	100.0%	-	Y	Y	Y	Y	Y	Y	Y	n.a	n.a	A	
Storage of electricity	4.10	27.06	0.0%	100.0%	-	Y	Y	Y	Y	Y	Y	Y	n.a	n.a		
Installation, maintenance and repair of energy efficiency equipment	7.3	3.99	0.0%	100.0%	-	Y	Y	Y	Y	Y	Y	Y	n.a	n.a	A	
Installation, maintenance and repair of renewable energy technologies	7.6	24,824.54	1.8%	100.0%	-	Y	Y	Y	Y	Y	Y	Y	n.a	n.a	A	
Engineering activities and related technical consultancy dedicated to adaptation to climate change	9.1	170.84	0.0%	-	100.0%	Y	Y	Y	Y	Y	Y	Y	n.a	n.a	A	
OpEx of environmentally sustainable activities (taxonomy-aligned) (A.1)		67,506.42	4.9%	99.7%	0.3%	Y	Y	Y	Y	Y	Y	Y	n.a	n.a		
A.2 Eligible activities not aligned with the taxonomy																
Installation, maintenance and repair of renewable energy technologies	7.6	4,380.80	0.3%													
OpEx of activities eligible for the taxonomy but not environmentally sustainable (activities not aligned with the taxonomy) (A.2)		4,380.80	0.3%													
A.1+A.2 Total		71,887.22	5.2%													
B. ACTIVITIES NOT ELIGIBLE FOR TAXONOMY																
B OpEx of activities not eligible for the taxonomy		1,302,267.51	94.8%													
A+B Total		1,374,154.73	100%													

THE VALUE CHAIN

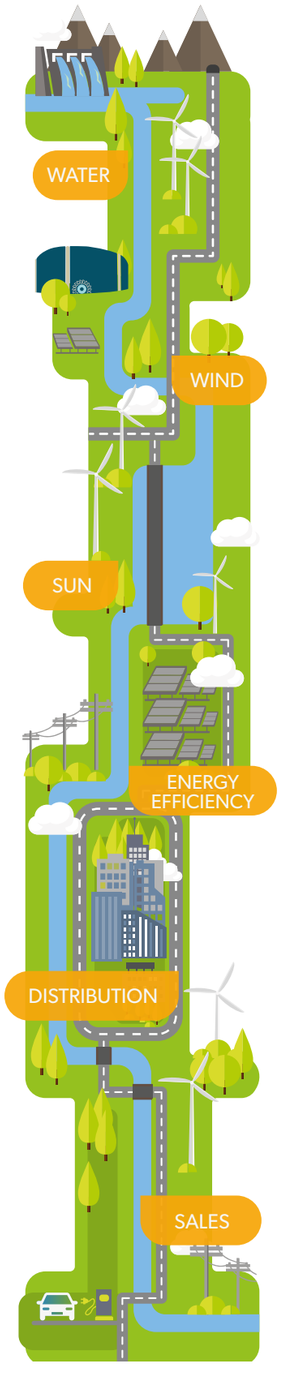
Nature is the CVA Group's main source of energy. Through its 32 hydroelectric power plants, 8 wind farms and around 54,000 photovoltaic modules, CVA produces energy from renewable sources amounting to around **1,105 MW of installed power**.

Water, drawn, turbined and fully released, wind and sun are the raw materials for the CVA Group's clean energy production. The entirely renewable and naturally occurring sources of production mean that the procurement phase only applies to services, components and machines.

The **electricity distribution** phase is in the hands of the subsidiary Deval, which operates a distribution network of high, medium and low voltage power lines over **4,100 km** long, with more than **1,700 transformer stations**. The company carries out the electricity distribution and metering under concession and is committed to maintaining a high quality of service and to ensuring the resilience of distribution networks through continuous and remote monitoring of the entire network.

In addition to the production and distribution of electricity, CVA is also involved in the **sale of energy to end consumers, through the company CVA Energie**, which operates in both the protected and free market. In the former, the company offers electricity through the Enerbaltea brand, while in the latter **tailor-made offers** are constructed to meet the needs of different types of customers, such as domestic consumers, condominiums, small professionals and large business customers.

In terms of **energy efficiency**, while CVA is committed to promoting the use of energy-efficient appliances, encouraging consumers to use energy more efficiently, it also supports the revitalisation of the local economy by financing energy efficiency operations, carried out by local industry players. On the strength of its technical, economic and organisational skills, **CVA offers itself as a facilitator in order to help the** sector operators in the area activate energy efficiency initiatives, as provided for by Law No. 77 of 17 July 2020 - which increased the eco-bonus on energy developments of buildings to 110%.



Green Energy Building for energy efficiency

the Relaunch Decree[7] of 2020 introduced for the first time the **110% super tax credit**, aimed at increasing tax deductions for energy efficiency measures in Italian buildings, in order to promote economic recovery and meet the climate targets set by the PNIEC. The bonus, extended by Budget Law 2022 to 30 June 2023, covers all energy efficiency and earthquake-proofing works, installation of photovoltaic systems and infrastructure for charging electric vehicles in buildings.

In line with the provisions of the Integrated Plan, and capitalising on its **technical expertise in the local energy sector**, in 2020 CVA launched the ***Green Energy Building*** label, aimed at supporting citizens, construction companies and professionals who want to undertake work to improve the energy performance of buildings. In this context, CVA plays the role of **facilitator for the activation of efficiency initiatives** and acts as an intermediary **between companies and citizens** who express their willingness to access the superbonus. The Group actually accredits industry operators with the required professionalism and capabilities, finances projects by absorbing the tax credit, supervises the design and construction activities, and provides the necessary support for the management of the paperwork required by the administrative process. The year 2022 saw EUR 92 million of superbonus contracts. In the course of 2023, all work in progress on apartment blocks and private residences must be completed in order to avoid missing out on the legal benefits.

92 million €

of superbonus contracts

Hydropower concessions: the wait goes on

For CVA, the majority of hydroelectric concessions will expire in 2029, and the regulatory framework on concession renewals still appears to be disorganised, patchy and susceptible to further regulatory changes. The process to establish a regional regulation of the matter by means of a law implementing the special statute was initiated by the Region of Aosta Valley as early as 2019, but was subsequently interrupted due to the fall of the Regional Council.
The new regional government that took office in September 2020 resumed this process, which to date has not yet been completed, also in view of the recent installation of the current national government. Despite this political and regulatory uncertainty, backdrop, Aosta Valley continues to be in first place in Italy in terms of **coverage of its energy consumption by renewable sources**, amounting to 91% in 2019, already well above the 52.1% target set for 2020 by the *burden sharing*[8]. This is mainly due to the contribution of entirely local hydropower.

DIALOGUE WITH STAKEHOLDERS

Materiality analysis and stakeholder engagement

Materiality analysis makes it possible to identify the most significant issues for an organisation in its relations with the environment, the economy and people. Conducting such an analysis enables an overall assessment of the sustainability context in which the company operates and the interests of stakeholders potentially affected by the company's business activities. The term "materiality" is used to emphasise the importance, concreteness and measurability of the factors identified; thanks to this analysis, the company is able to effectively communicate its commitment to sustainability to the outside world while developing engagement and dialogue with its stakeholders.

In 2022, CVA updated its **material topics** in line with the updates of the requirements of the **Global Reporting Initiative (GRI) 2021 Standards**, effective 1 January 2023. Starting with the materiality analysis carried out in 2018, this process led to a **redefinition** of **both the topics and their prioritisation**.

Starting from an analysis of CVA's sustainability context and value chain, a list of actual and potential positive and negative impacts generated by the company's activities on the external context were identified. These impacts were the subject of a technical assessment, aimed at firstly measuring their significance, by the internal CVA functions most involved in sustainability issues, i.e. the Risk Management Function, the Civil Engineering and Electromechanical Engineering Functions, the Communication, Marketing, Sustainability and European Projects Office, and the Quality Services Environment (QSA) Function. In detail, each negative impact attributable to the identified key issues was assessed according to four parameters: scale, scope, irremediable character and likelihood. Positive impacts, on the other hand, were measured according to their scale, scope and likelihood. The result of this exercise returned a list of 14 impacts deemed most relevant. Then, the most significant ones were associated with themes, charting the materiality threshold on the basis of their significance.

Eighteen *external* stakeholders representing **different categories of stakeholders** were involved in the validation of these impacts and selected on the basis of their relevance to the activities carried out by CVA and their knowledge of the Aosta Valley territory and CVA's business. The short-list of stakeholders was asked to express their views on the prioritisation of the proposed topics of greatest impact. Through this process, **nine material topics were identified** on the basis of their significance.

Material topics for the CVA Group and its stakeholders[9]

- Renewable energy production and mitigation of the impacts of the energy crisis
- Asset integrity and adaptation to climate change
- Water resource management
- Soil consumption, protection of biodiversity and landscape
- Technological and service innovation
- Trust, reputation and territorial anchoring
- Well-being and skills development
- Cybersecurity and data protection
- Reduction of CO_2 emissions (Scope 1 and 2)

Materiality threshold

- Sustainability in the supply chain
- Transparent communication and marketing
- Diversity, inclusion and equal opportunities
- Listening and customer satisfaction
- Circular economy

*Materiality is the threshold beyond which an issue becomes important enough to be reported on.

These topics were in turn reviewed by the CVA Board, which conducted its final evaluations and selected the final topics, as follows.
The centrality of the materiality analysis will be further enhanced with the application of the single European standard developed *by the European Financial Regulation Advisory Group (EFRAG*), which is currently in the approval process. In fact, the analysis of the organisation's externally generated *impacts (impact materiality*) will be supported by the analysis of the *outside-in* sustainability risks, i.e. *financial materiality*, which makes it possible to map the risks and opportunities that externally may have an influence on the company's business.

Stakeholders involved

- **Biamonte Luca** | Legambiente, National Council Member
- **Lorenzetti Marco** | Confindustria Aosta Valley and Head of the Industrial Relations Office, General Manager
- **Bovet Fulvio** | BIM Consortium, Director
- **Marlier Ezio** | Aosta Valley Mountain Guides, President
- **Broggio Michele** | UILTEC, Regional Secretary
- **Müller Markus H.-P.** | Deutsche Bank - Managing Director, Chief Investment Officer ESG & Global Head Private Bank
- **Brunet Genny** | COA Energia, Finaosta S.p.A.
- **Pelanda Alessandro** | SAVT, Regional Secretary
- **Cappellari Tamara** | RAVDA, Coordinator of the Industry, Economic Development and Energy Department
- **Rocco Raffaele** | RAVDA, Coordinator of the Planning, Water Resources and Territory Department
- **Cosentino Marco** | Intesa Sanpaolo, Vice President Relationship Manager North West Area
- **Rosset Rosina** | Association Valdotaine Consommateurs et Usagers (AVCU), President
- **Fosson Jean Pierre** | Montagna Sicura Foundation, Director
- **Rubbo Igor** | ARPA VdA, Director
- **Franzoso Luca** | RAVDA, Coordinator of the Environment Department, Sustainable VdA Contact Person
- **Ruggeri Katia** | FLAEI Aosta, Regional Secretary
- **Jean Noel Albert** | FICTEM, Regional Secretary
- **Zammarchi Giuseppe** | Unicredit, Head of ESG Metrics, Policies and Disclosure

Listening and dialogue with the territory

In the development of its activities and business, CVA is in continuous dialogue with local stakeholders to fully understand their needs and develop a shared plan of action, mediating the demands of all parties involved.

This means listening to stakeholders and working with them to **make additions to projects that will benefit CVA, the local area, the people living there and maximise the Group's contribution to the decarbonisation of the national economy**.

Hône 2: working with citizens

The creation of a participatory process and dialogue with local communities was essential for the development of the Hône 2 hydroelectric plant renovation and upgrading initiative, located in Aosta Valley in the municipalities of Champorcher, Pontboset and Hône. It was crucial for the design team to collect and analyse the comments and suggestions of citizens and stakeholders, which allowed them to become more aware of specific issues and enabled the preparation of a better project proposal.

A series of formal meetings were organised with the administrations of the 3 municipalities concerned (Champorcher, Pontboset, Hône) and the citizens of the valley's municipalities. A meeting with the citizens of Champorcher was held in December 2021 and a similar public meeting with the population of the municipality of Hône in June 2022.
Thanks to the comments of the population, as well as the regional structures involved, CVA was able to examine and investigate **alternative design solutions** to those initially presented.

In fact, during the Environmental Impact Assessment (EIA) procedure, in the inspections carried out with the authorities and in the public debates during the presentation of the project, important feedback was received that allowed more sustainable environmental solutions to be identified. In particular, thanks to the contribution of the citizens of Champorcher, the **access road to the plant's main intake at Outre l'Ève in the municipality of Champorcher** was redesigned. The new solution involves abandoning the planned route, which interfered with the hamlet of Outre l'Ève and the historical route reaching the village from the bottom of the valley, and building the road on the opposite slope, thus avoiding any interference.

The project passed the EIA procedure in 2022, obtaining **a positive judgement on the environmental compatibility of the initiative**, demonstrating the quality of the **work of the Engineering Divisions and the Quality, Safety and Environment Function**.

The project will allow the modernisation of a historical plant that is now more than 100 years old, thus eliminating potential critical issues related to the age of the works, and at the same time, it will double the plant's energy production from renewable sources from 50 to 100 GWh, optimising the use of water resources based on its seasonal nature.


Muffè Lake | Aosta Valley

A RESPONSIBLE GOVERNANCE

All the administrative bodies of the CVA Group companies have approved their own "**Organisation, Management and Control Model**", in accordance with Legislative Decree No. 231/2001. The purpose of this Model is to establish a structured and organised system of procedures and of control activities, aimed at preventing the different types of crime envisaged in said Decree from being committed. Likewise, the same companies have appointed their own Supervisory **Board (SB**) with a three-year mandate.

The Supervisory Bodies, with autonomous powers of initiative and control, **monitor the operation of and compliance with the Model**, reporting on their activities in their periodical Reports, which are in turn brought to the attention of the Administrative Bodies. These also make it possible to highlight what emerges from the relevant information flows received from the various corporate structures concerned. Similarly, it is the task of the Supervisory Bodies to **monitor regulatory updates and structural changes** affecting the companies of the CVA Group, in order to constantly assess the adequacy and compliance of the corporate organisational models and, if necessary, to urge the Management Bodies to make the appropriate updates.

In addition to a monitoring function, the Supervisory Board is responsible for taking charge of the reports made by employees - via the "**Whistleblowing**" reporting platform on the company intranet - on 231 issues (breaches of the Code of Ethics and Code of Conduct, breaches of the OMC, breaches of company procedures, commission of a predicate offence pursuant to Legislative Decree 231/2001). Through this reporting channel, the Supervisory Board analyses the report, protecting whistleblowers from any form of retaliation and ensuring their confidentiality.
The appointment of the members of the Board of Directors of C.V.A. S.p.A. takes place pursuant to Article 2-bis of Regional Law No. 20/2016[10]. In particular, pursuant to this provision, at least sixty days prior to the expiry of the bodies, FINAOSTA S.p.A. publishes a notice listing all the requirements to participate in the notice.

By way of example, in addition to the causes of ineligibility, inconferability and incompatibility envisaged by current legislation, specific qualifications, experience in management or directorships in corporations, the absence of conflicts of interest and the absence of positions on administrative bodies in other companies in which the Autonomous Region of Aosta Valley has a stake may be required.

Board of Directors

CHAIRMAN
Marco Cantamessa

CHIEF EXECUTIVE OFFICER
Giuseppe Argirò

DIRECTORS
Valeria Casali
Marzia Gran Blanc
Fabio Marra

Board of Statutory Auditors

CHAIRMAN
Massimo Scarrone

STANDING AUDITORS
Marco Carmelo Termine
Federica Paesani

ALTERNATE AUDITOR
alternate auditor

Independent Auditors

EY S.p.A.

As a wholly publicly owned subsidiary, CVA, through the selection process activated by FINAOSTA S.p.A., is directly accountable to both institutional stakeholders and the citizens of Aosta Valley represented by the regional governing and supervisory bodies[11].
In December 2022, the Board of Directors resolved to approve an **organisational change for CVA S.p.A. and CVA Eos S.r.l.**, as a result of the transfer of a business unit from the parent company to its subsidiary. The revision of the organisational model, effective from January 2023, also affects - among other things - the following areas:

CONSOLIDATION OF THE STRATEGIES, INNOVATION AND SUSTAINABILITY AREA

- Inclusion within the Strategies, Innovation and Sustainability Area of a "cross-company commercial" role;
- Amalgamation of the "marketing, external relations" and "sustainability" structures into the new Office for Communication, Marketing, Sustainability and European Projects;
- Inclusion within the Energy Efficiency and Open Innovation Function of a figure to support the potential creation of an *Energy Saving Company* (Esco) with a national dimension;

IMPLEMENTATION OF OTHER RES AND M&A MANAGEMENT ACTIVITIES

- Coordination of the new Other RES and M&A Function;
- Creation of the M&A Office;
- Transfer of the Development part of CVA's Regulatory Affairs and Development Function within the Other RES Engineering Office, which will be named Other RES Development and Engineering Office. The Regulatory Affairs and Development Function will be renamed the Regulatory Affairs Office.

In 2022, as in previous years, there were no reports received through the ***whistleblowing channels activated*** by the Group.

The Board of Directors and top management approve the sustainability strategies and objectives, review and approve the Integrated Plan, which includes the Group's objectives for sustainable development, and participate in the construction and validation of the materiality analysis. The latter is updated annually and adjusted into line with both the judgments reached as part of stakeholder dialogue and the compliance with the evolution of the relevant legal and regulatory standards. The subject of governance action is also the assessment of the significance of positive and/or negative environmental, economic and social impacts generated by business activities and used in the selection of material topics.

The Group Code of Ethics and Conduct

The Group has a **Code of Ethics and Conduct, revised in its seventh edition in 2021**, which defines the ethical commitments and responsibilities the company assumes in the conduct of its business. The document was prepared by the parent company CVA and ratified by all the companies in the Group and lists the ethical principles and behavioural criteria to be followed by company personnel in order to avoid illegal or irresponsible behaviour by those acting on behalf of the companies.

The latest updates aim to stigmatise conflict of interest in all its forms, to provide behavioural guidelines for corporate *social media* activities, and to strengthen the commitment to anti-corruption, *privacy* and occupational health and safety compliance.

Respect, transparency and social responsibility

Every two years, the Italian Antitrust Authority (AGCM) assigns Italian companies with the **Legality Rating**, an award that assesses corporate compliance with the principles of legality, transparency and social responsibility.

For the 2021-2023 two-year period, CVA and CVA Energie received the **highest possible score**.

What are the opportunities for CVA under the Madia law?

The law on the reorganisation of public administrations (Law 124/2015), also known as the **Madia Law,** imposes certain constraints on the Italian Public Administration - i.e. on all national, regional and local public bodies and subsidiaries - in order to ensure transparency, efficiency and simplification in the delivery of public services.

As of July 2022, the companies of the CVA Group **are only subject to the TUSPP rules aimed at listed companies,** as provided for by the conversion law no. 91 of the "Aid" decree-law, which sanctions the inclusion in the TUSPP definition of "listed companies" of those companies in the energy sector that have issued financial instruments, other than shares, listed on regulated markets as of 31/12/21.

This allows for greater autonomy in developing strategic and economic choices that allow for an acceleration in business growth and diversification, a simplification in the acquisition of new renewable energy plants outside the region, and the development of new company assets. The new regulations will allow Compagnia Valdostana delle Acque to operate on the market as a listed company, while remaining a wholly-owned public company.

The new legal framework will also spare CVA a number of public sector obligations that have so far slowed down, and in some cases blocked, some significant growth opportunities.

Enterprise risk management

The CVA Group's system of internal risk control is structured into **several lines of management and** is a cross-Group process that brings together the contributions of multiple organisational roles and levels, each within the scope of their competencies.

- The **Governance Bodies (Board of Directors- BoD and Top Management)** are ultimately responsible for risk management in achieving corporate objectives. They perform a management and supervisory function, engage in dialogue with stakeholders, ensure that appropriate processes and structures are in place, and assess the adequacy of the enterprise internal risk control system.
- The **first line of management (Department Managers)** are called upon to manage the risks associated with the processes and operational activities for which they are responsible, defining and implementing the necessary controls, in compliance with internal procedures.
- The second line of management monitors specific areas (e.g. QSA, Compliance) or higher level areas (Risk Management) for which they propose the evaluation, measurement and control systems, in order to ensure effective monitoring, comprehensive and correct risk management and compliance with laws, regulations and internal procedures.
- The **Supervisory Board (SB)** operates on all levels of control for the prevention of possible instances of corruption.

As part of the internal risk management system, the **Risk Management Function** oversees the process of identifying, measuring and managing the risks and opportunities generated and incurred by the Group, including environmental, social and governance issues. The **ERM process make it possible to define the Group's** residual risk profile which, together with mitigation strategies, is brought to the attention of the Board of Directors of the Parent Company.

The risk assessment for 2022 started with the involvement of the heads of all company departments, developed through interviews aimed at identifying the events that may impact on business performance and goals. This analysis enabled the **Group's risk mapping to be updated by identifying new scenarios**, updating previously identified risks, and removing scenarios that were no longer current. The review included updating the context, assessing the effectiveness of existing safeguards, planning mitigation actions, and quantifying probabilities and impacts. From this first level of analysis, the Risk Management Department has applied a uniform measurement metric to enable consistent representation of risks to Top Management.

The drive for continuous improvement in risk management enriched the ERM analysis with the **development of a set of Key Risk Indicators (KRIs) and the identification of opportunity cards**. KRIs are tools for signalling changes in risk exposure and alerting the company in advance in order to prevent possible crises and mitigate issues over time.

In the 2022 assessment, most ERM risk scenarios are focused on a medium-low' ***severity***[12] **level**, although there is an increase in risks with high and medium-high severity. The most relevant risk scenarios include, for example, the expiry of hydroelectric concessions in 2029, the renewal of the concession for the distribution of electricity in 2030, the effects of changes in water availability on the operation of production plants, and the entry into force of regulations on water releases, the delay or partial achievement of the strategic objectives for the development of new plants or repowering and the objectives of the business plan, exceptional natural events capable of causing damage to works, plants, disruptions to the distribution network that could compromise service continuity and quality, and, finally, regulatory developments that could change business models. The issue of reliability of supply also emerges across the board.

The results of the assessment also show that **the relevant material topics are included in the enterprise risk management process**.

The sustainability risk assessment

Legislative Decree No. 254/2016 requires companies to report on **relevant risks associated with material topics**, i.e. those that have a significant impact on the company. These topics include the business model adopted by the company, the main management risks that the company faces or that could be caused by its activities, and the measures taken to manage these risks.

The new issues identified as material in 2022 were related to the risks identified in the ***Enterprise Risk Management (ERM***) model. The table below shows **how these priority themes are related to the identified risks**.

Topics of Legislative Decree 254/2016	Material topics for CVA	Risk Factors (generated/incurred)	Management methods (main)[14]
Environmental issues	Renewable energy production and mitigation of the impacts of the energy crisis	• Partial achievement of the targets set out in the Business Plan • Damage to production assets and networks as a result of extreme natural events (physical risk) • Long-term unfavourable changes in water availability (transition risks) • Greater competition for water resource use • Increased reputational value of CVA Group's green label • Favourable developments in the regulatory framework for energy efficiency and generation from RES	• Review and monitoring of Business Plan targets • Integration between strategic goals and sustainability • ERM (Enterprise Risk Management) process integrated with sustainability • Participation in round-table work and research groups to monitor the effects of climate change on a regional scale • Use of predictive hydro-geological, hydraulic and meteorological models
Aspects pertaining to personnel management	Well-being and skills development	• Difficulties in attracting and retaining specialised professionals • Deterioration of the level of satisfaction of human resources • Uncertainty of future working conditions • Lack of motivation (engagement) • Complexity of remote work management • The considerations and assessment of the business environment during the ERM process lead to the exclusion of residual risk and the need for a specific thematic risk assessment. • Environmental damage and pollution • Worsening relationships with company personnel • Negative media exposure as a result of serious events • Legal aspects and penalties for non-compliance with legislation in force	• Code of Ethics • Integrated Quality Safety Environment Policy • Corporate welfare programmes • HR policies and procedures (HR recruitment procedures; staff training programme and tools for self-training; coaching programme, etc.) • "Future Generation" internal project • Respect for the Universal Declaration of Human Rights, the CCNL (National Collective Labour Agreement) and the Code of Ethics • Integrated management system of ISO 9001 (quality), ISO 14001 (environment) and ISO 45001 (health and safety) certifications subject to management review and continuous improvement • Environmental significance assessment • Insurance cover
Social issues	Trust and reputation and territorial anchoring	• Decreased quality and continuity of electricity distribution service. • Negative impact in terms of employment and lost revenue at regional scale • Worsening relationships with local stakeholders • Negative media exposure as a result of non-compliance events • Reduction in the level of customer satisfaction • High level of local satisfaction with awareness and education activities in the area of environmental sustainability • Appreciating and maintaining good relations with local government bodies through active participation in the Aosta Valley Carbon-Free • by 2040 project • Deterioration of reputation with local stakeholders • Negative media exposure as a result of instances of corruption	• Review and monitoring of Business Plan targets regarding asset modernisation and maintenance • ERM (Enterprise Risk Management) process • Internal operating procedures and practices for process monitoring • Involvement and discussion with the community and local stakeholders based on a participatory approach • Procedures for managing relationships and sponsorships • Plant visits and PR and outreach programmes in the local area • Compliance with ARERA regulations and service quality levels • Possession of the ISO 27701 certification on privacy and ISO 27001 certification for information security • Code of Ethics • Business organisation and management model
Environmental issues	Reduction of CO_2 emissions (Scope 1 and 2)	• Partial achievement of the targets set out in the Business Plan • Increased reputational value of CVA Group's green label	• Review and monitoring of Business Plan targets • Integration between strategic goals and sustainability • ERM (Enterprise Risk Management) process integrated with sustainability • Integrated Quality Safety Environment Policy and certifications • Use of electricity produced from renewable sources (guarantees of origin)

Topics of Legislative Decree 254/2016	Material topics for CVA	Risk Factors (generated/incurred)	Management methods (main)[14]
Environmental issues	Asset integrity and adaptation to climate change	• Decreased quality and continuity of electricity distribution service • Damage to third parties (people and/or property) • Malfunctions or interruption in the operation of facilities, networks and services	• Review and monitoring of Business Plan targets • ERM (Enterprise Risk Management) process integrated with sustainability • Flood risk management procedures in coordination with local authorities and the civil defence authority • Extension of insurance coverage • Compliance with ARERA resolutions, particularly with reference to the levels of continuity and quality of the electricity distribution service
Environmental issues	Water resource management	• Accidental non-compliance with environmental regulations • Reduction of energy production from hydroelectric power plants • Partial achievement of the targets set in the Business Plan (hydropower upgrades)	• Review and monitoring of Business Plan targets • ERM (Enterprise Risk Management) process integrated with sustainability • Active participation in round-table working groups with the relevant authorities
Social issues	Technological and service innovation	• Decreased quality and continuity of electricity distribution service. • Malfunctions or interruption in the operation of facilities, networks and services • Partial achievement of targets in the Business Plan (open innovation, distribution network) • Synergy with the region for the realisation of innovative business models (e.g. trigeneration, battery storage on non-programmable renewable plants, energy communities)	• Planning and monitoring of Business Plan targets, with special reference to innovation • Organisational structures dedicated to Open Innovation • Identifying business opportunities related to innovative technologies • Continuous improvement of IT/OT systems
Social issues	Cybersecurity and data protection	• Decreased quality and continuity of electricity distribution service • Negative media exposure as a result of serious events • Partial effectiveness of customer data protection systems • Partial interruption of business operations	• ERM (Enterprise Risk Management) process • Possession of the ISO 27701 certification on privacy and ISO 27001 certification for information security • Strengthening physical security, access control and video surveillance systems
Environmental issues	Soil consumption, protection of biodiversity and landscape	• Landscape damage as a result of plant failures • Reduction of energy production from hydroelectric power plants • Accidental non-compliance with environmental regulations	• Planning and monitoring of Business Plan targets • ERM (Enterprise Risk Management) process integrated with sustainability • Studies for the mitigation of environmental impacts for site activities • Active participation in round-table working groups with competent relevant authorities regarding the water resource • Environmental significance assessment
Social issues	-	• The considerations and assessment of the business environment during the ERM process lead to the exclusion of residual risk and the need for a specific thematic risk assessment.	• Respect for the Universal Declaration of Human Rights, the CCNL (National Collective Labour Agreement) and the Code of Ethics

Managing risks and opportunities related to climate change

In December 2022, a multi-year project was launched for the analysis of climate-related risks and opportunities, in accordance with the guidelines of the *Task Force on Climate-Related Financial Disclosures (TCFD),* and the subsequent integration of the tools developed and know-how into ERM.

The project considers the main international climate scenarios developed by reference organisations to determine physical risks (i.e. risks arising from the physical effects of climate events, acute if related to episodic phenomena or chronic if related to long-term changes) and transitional risks (risks arising from the transition process towards a low-carbon economic system that may involve changes in the regulatory, legal, technological and regulatory domains).

From the scenarios developed by the *Intergovernmental Panel on Climate Change* - IPCC, for the identification of physical risks, CVA selected:

- ***Aggressive mitigation* - RCP 2.6**, based on a significant reduction in emissions (gradual reduction from 2020 and zero emissions by 2100);
- ***Strong mitigation* - RCP 4.5**, which considers the implementation of actions to effectively combat climate change and significantly reduce greenhouse gas emissions into the atmosphere;
- ***Business-as-usual* - RCP 8.5**, which envisages no emission reductions, commonly associated with the term "Business-as-usual", or "No mitigation" where emission growth continues at current rates.

The time horizons were defined on the years 2030, 2040 and 2050 taking into account the contents of the business plan, sustainability goals and the economic context. The risk assessment also considers other aspects such as CVA's business sectors, geographical location and technical characteristics of the *assets*.

Below is a summary of the relevant risks and opportunities related to climate change, identified in accordance with the recommendations of the TCFD. For each risk and opportunity, the potential impact on CVA Group's assets and the strategy for managing them are indicated.

The colours orange and blue refer, respectively, to negative and positive impacts on the *business* sector; grey refers to impacts that can be either positive or negative.

Negative impact

Positive impact

Impacts that can be both positive and negative

KEY OF BUSINESS SECTORS

Hydro · Wind · Photovoltaic · Corporate · Sale · Energy Efficiency · Deval Network

	Risk/opportunity area	Potential financial impacts	Impacted business sectors	Risk/opportunity management strategy
PHYSICAL acute	Intensification of extreme weather events (e.g. floods, landslides, cloudbursts, windstorms, heat waves, etc.)	• Increased operating costs • Revenue reduction • Increased insurance costs	Hydro, Wind, Photovoltaic, Corporate, Deval Network	• Maintenance strategy supported by continuous risk management activities • Technological and geographical diversification • Monitoring and updating insurance coverage • Contingency and management plans for extreme weather events (hydropower, distribution network) • Development and modernisation plans
PHYSICAL chronic	Variation in wind regime with potential increase or decrease in wind energy production	• Uncertainty on revenues due to changes in wind production volumes	Wind	• Using advanced forecasting systems • Technological and geographical diversification
PHYSICAL chronic	Variation in the average level of solar radiation, with potential increase or decrease in solar energy production	• Uncertainty on revenues due to changes in solar production volumes	Photovoltaic, Deval Network	• Using advanced forecasting systems • Technological and geographical diversification
PHYSICAL chronic	Variation in the average level of the rainfall and snowfall system with potential reduction in hydropower production	• Reduction in revenue due to changes in hydroelectric production volumes	Hydro	• Asset modernisation and upgrading plan • Plant scheduling and reservoir management based on increasingly advanced forecasting systems • Development of maintenance plans that take into account variations in the weather system • Studies for the construction of new reservoirs
PHYSICAL chronic	Increase in average temperature level	• Uncertainty of revenues due to changes in electricity demand • Increased operating costs • Reduced production due to lower plant efficiency	Hydro, Wind, Photovoltaic, Sale, Deval Network	• Technological and geographical diversification • Continuous development and modernisation plans
TRANSITION Market	Change in demand for electricity (e.g. due to increased energy efficiency and distributed generation, spread of electric cars, electrification of consumption, increased cooling, etc.)	• Reduction in revenue • Increased revenues	Energy Efficiency	• Business plan and strategic plan in line with changing demand
TRANSITION Regulatory and policy-related	Incentives for energy transition with more investment possibilities in renewables	• Increased revenues	Hydro, Energy Efficiency, Wind, Deval Network, Photovoltaic, Corporate	• Continuous monitoring of the national regulatory process • Collaborative dialogue with institutions and industry bodies • Industrial development plan updated and in line with the energy transition

	Risk/opportunity area	Potential financial impacts	Impacted business sectors	Risk/opportunity management strategy
TRANSITION Regulatory and policy-related	Risk of competition in the use of water resources and consequent increase in the share of water to be released by hydropower plants	• Reduction in revenue		• Technological diversification of hydroelectric plants • Maintaining relations with stakeholders • Adaptation of the Strategic Plan to increase water storage capacity
TRANSITION Technological	Increasing market demand for energy efficiency solutions	• Increased revenues		• Continuous monitoring of the regulatory process • Open Innovation Projects • Strategic plan including the development of energy efficiency activities
TRANSITION Regulatory and policy-related	Changes in raw material and energy prices, changes in the energy mix, changes in the competitive environment in accordance with environmental policies	• Reduction in revenue • Increased revenues		• Collaborative dialogue with institutions and industry bodies • Continuous monitoring of plant performance • Technological and geographical diversification
TRANSITION Market	Opportunities for the Group to support its strategy outlined in the Business and Sustainability Plan with sustainable finance instruments	• Economic concessions • Reputational advantages • Reducing the cost of capital		• Continuous monitoring of plant performance • Technological and geographical diversification
TRANSITION Reputational	Improvement of the Group's reputation resulting from the green investment strategy	• Reputational advantages • Reducing the cost of capital		• Strategic plan integrated with sustainability goals and in line with the European green deal

In conclusion, to cope with the risks and opportunities arising from climate change, the CVA Group operates in a way that contributes to the protection of the environment, pursuing a sustainable strategy that is reflected in

- Maintaining and further developing risk awareness and risk culture at all levels of the organisation, with a focus on climate change and energy transition;
- Recalibration of electricity production sources, aimed at geographical and technological diversification in order to minimise the negative impacts caused by climate change;
- Continuous monitoring of the efficiency of its hydropower plants in view of a possible change in the hydrological curve, in order to promptly implement efficiency measures and make the plants more resilient to climate change risks;
- Continuous monitoring of regulatory developments and dialogue with institutions and industry bodies;
- Implementation of communication and stakeholder engagement initiatives in order to understand their needs and develop a shared plan of action to meet their interests.

In addition, in order to manage risks related to climate change, the CVA Group, which mainly produces energy in the hydropower sector, intends to achieve an energy mix consisting of 50% hydroelectric power and the remainder divided between wind and photovoltaic power.

The awards

On the basis of the analysis of the data and information contained in the 2022 Consolidated financial statements and Sustainability Report, the CVA Group won two important awards. On 9 March 2023, at the "Utilities: Global Challenges, Local Responses" meeting, the CVA Group won the **"*Top Utility Operative Performances*"** award given out by Althesys, an independent professional company specialising in strategic consulting and knowledge development.

> **Marco Cantamessa, President of CVA commented:**
> **We enthusiastically welcome the recognition received from Atlhesys, which once again confirms the virtuous management of the Group and the far-sightedness of our strategic choices, which generate steadily growing economic results and positive spill-over effects in the area. The Top Utility award is testament to the key role we play in a highly strategic sector for recovery, overcoming the energy crisis and the transition to decarbonisation.**

CVA won the award due to "the results achieved, which are above industry standards in the ordinary management of operations and quality of services" during 2022.

Furthermore, on 17 April 2023, during the second edition of the **Sustainability Award** organised by **Corriere della Sera** in cooperation with Next Nuova Economia, CVA received a special mention for **"Best Relationship with the Community"**.

> **Enrico De Girolamo, General Manager of CVA commented:**
> **We are delighted to have received this award, which rewards our commitment and connection to the territory which the Group is rooted in. The synergy between the creation of economic value and the distribution of benefits to the community is a fundamental principle of our corporate sustainability. The value generated and shared translates not only into the provision of reliable and efficient services, but also into job creation, support for the supply chain through the use of local suppliers and sustainability education initiatives aimed at schools and the younger generation**

This further recognition, awarded by a commission of experts on the basis of the main international standards, attests to the high value the Group attaches to the territory in which it operates and to the relationships established with local community stakeholders.

The integrated management of sustainability

In February 2022, CVA approved the creation of the **Strategies, Innovation and Sustainability Area**, directly under the control of the General Management, with the aim of organising and structuring project management activities, in order to plan and monitor the **progress of the Integrated Plan**, to effectively communicate the company's objectives and the progress of the Plan defined to achieve them, both to its own employees and to external stakeholders.

At the same time, a Communication, Marketing, Sustainability and European Projects Office has been set up within the same area, within which a **specific area is dedicated to Sustainability and to the activities of reporting** and integrating the sustainability objectives set out in the Strategic Plan within the new Integrated Plan. In addition, this area Sustainability deals with the promotion and management of projects dedicated to the needs of the region, with particular reference to educational initiatives for schools and projects geared towards the creation of a Community Company for social inclusion.

The management of cybersecurity and personal data privacy

Following a project to adapt its systems to the **ISO/IEC 27001 and 27701** standards relating to information security and *privacy* management respectively, CVA obtained the aforementioned certifications in December 2022, issued by the world's leading certification body DNV.

These recognitions are the result of more than a year's work to **improve the quality and security of data and information management processes**, which required the development of specific procedures and processes, and the involvement of almost all corporate functions, either directly or indirectly, as required by ISO IEC 27001. Starting with an in-depth analysis of all pre-existing management flows, safer and more effective measures and procedures were implemented, aimed at reducing risks, training people, monitoring and continuously improving business processes and procedures as well as information security.

In addition, two new figures were formalised, one responsible for **the information security management system and the other for the privacy management** system, and three levels of training were defined on the basis of responsibility for the information security management system: basic level (for the entire company population), intermediate level for those working in the field (IT and TLC), and, finally, an *Internal Audit* course for those responsible for the management systems, so that they can internally verify compliance with the requirements imposed by the certifications.

The training courses were distributed to the entire company population in a hybrid mode (face-to-face and e-learning). Overall, **93%** of the corporate population took part in the training courses.

CYBERSECURITY AND INFORMATION MANAGEMENT TRAINING

	Registered	Participants	Participation (%)
CVA	426	395	93%
CVA Energie	63	61	97%
CVA Eos	7	7	100%
TOTAL	**496**	**463**	**93%**

"These certifications confirm that CVA's organisation meets inflexible international standards in ensuring confidentiality and integrity of information and privacy, creating added value for all stakeholders, in perfect harmony with the implementation of the Strategic Plan to 2027, of which operational excellence is a pillar." States Enrico De Girolamo, General Manager of CVA.

Improved IT and TLC services thanks to the Business Continuity project

At the beginning of 2022, the ***Business Continuity*** project was launched, aimed at improving the business continuity level of IT *(Information Technology)* and TLC (Telecommunications) services.

The activities carried out enabled the identification and consolidation of the scope of application, the assessment of the impacts on the company's business related to business interruption events *(Business Impact Analysis)*, and the realisation of a vertical risk analysis for various unavailability scenarios.

Activities to date are also aligned with the recent update of **ISO 27001:2022,** the standard that specifies **the requirements for establishing, implementing, maintaining and continuously improving an information security management system (ISMS)**, which fully incorporates ICT business continuity in the requirements that will come into force in the coming years.

Deval is the company that manages the regional distribution network and oversees the essential service of continuity of power supply, understood as a primary need of society. Increasing the protection of systems therefore means helping to **reduce any possibility of service interruption or malfunction**, or even worse, data theft.

For years, in line with the requirements of the National Cybersecurity and Data Protection Framework[14], Deval's Cybersecurity Team has been monitoring and working to improve the company's *Operational Technology* (OT) systems and to protect hardware and software systems, which are functional to the regional electricity grid, with a focus on remote control and telecommunications. In support of Deval, CVA's IT Services **Function** is responsible for the proper execution of the Group's IT services.

Hacker-proof cybersecurity

In the last months of 2022, CVA detected elements on its computer systems that could be traced back to **a malicious hacking attack from external sources, which was neutralised thanks to prompt countermeasures**. Thanks to the new processes and procedures recently certified in accordance with **ISO/IEC 27001**, the emergency situation could be resolved as quickly as possible, while maintaining constant vigilance.

CVA CEO, Giuseppe Argirò, said: "The digital age has revolutionised the way we live and see things. So many processes have been radically changed: however, this innovation brings with it risks, as CVA experienced first-hand with the hacker attack that recently hit our systems. The certifications obtained today are confirmation of our ability to handle critical issues and our commitment to high standards in information security".

Achievement of ISO 27001 and 27701 certification

THE CHALLENGES WE FACE

Grand-Combin | Aosta Valley

A YEAR OF ENERGY SHOCK

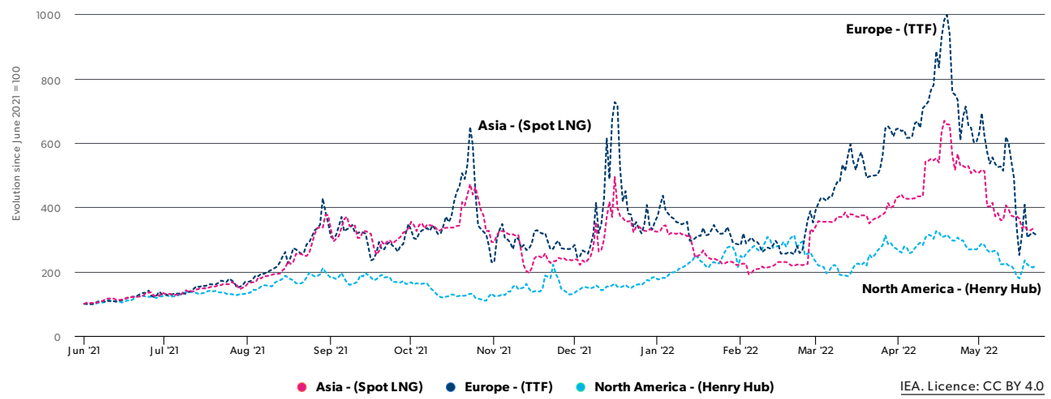
2022 marked a step backwards in the energy timetable

If 2021 ended up being a challenging year due to both the aftermath of the pandemic crisis and the price of gas and energy, 2022 turned into a real global energy crisis. Following the **Russian invasion of Ukraine in February 2022**, the price of natural gas reached record levels, and consequently, so did the price of electricity. Rising energy prices have contributed to triggering **high levels of inflation**, pushing households into poverty, forcing some industries to reduce their production levels or even shut down plants[15].

This domino effect has **slowed economic growth**, especially for Europe, which is extraordinarily vulnerable in terms of gas supplies due to its historical energy dependence on Russia. **In September 2022, the price of energy was 40.8% higher than only one year earlier**[16].

To cope with the crisis, and in the run-up to winter, EU **member states** have introduced gas storage obligations, and agreed voluntary targets to reduce their gas and electricity demand by 15%[17] through energy efficiency measures and increased use of renewable energy. Furthermore, in order to minimise the risks associated with a potential interruption of flows from Russia, countries such as Germany, Austria, the Netherlands, France and Italy have **restarted coal-fired power plants** to maximise energy production[18]. Coal production reached a new record in 2022 in Europe, but also in the rest of the world[19].

EVOLUTION OF MAIN REGIONAL NATURAL GAS PRICES, JUNE 2021-OCTOBER 2022

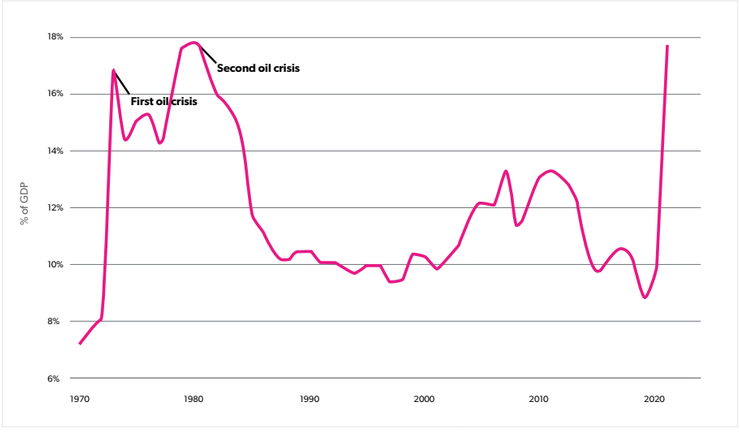


SOURCE: INTERNATIONAL ENERGY AGENCY (IEA), 2022 | CVA RE-PROCESSING

17.7%

of GDP spent on energy

ESTIMATED % OF GDP SPENT ON ENERGY END-USE



SOURCE: OECD ECONOMIC OUTLOOK (2022) | CVA RE-PROCESSING

An important fact about the current energy shock, sees the most advanced economies **spending** more than 17% of their GDP on energy expenditure in 2022: a share unseen in the last 40 years[20]. Such a percentage of financial resources spent on bills is bound to have significant implications on the economy and the investment plans of industries that are likely to shift towards **a renewable energy model** in the long term.

Just as the 1979 energy crisis had accelerated energy efficiency processes and the development of wind and solar technologies, the current energy shock could stimulate the use of renewable and low-emission energy sources. **The rising price of energy from fossil fuels has in fact made solar and wind energy more competitive**; the costs for coal- and natural gas-fired power plants are rising even faster with the global surge in energy prices. As a result, new onshore **wind and solar projects cost about 40% less than coal- or gas-fired plants built from scratch**[21]. Moreover, the impact of the Russian invasion of Ukraine on energy supply has made the disadvantages of dependence on a few large suppliers evident in terms of national energy security.

Relying on renewables would mean being able to differentiate one's sources of supply and would mean greater autonomy.

Despite emergency measures, Europe's trajectory towards renewables has been mapped out

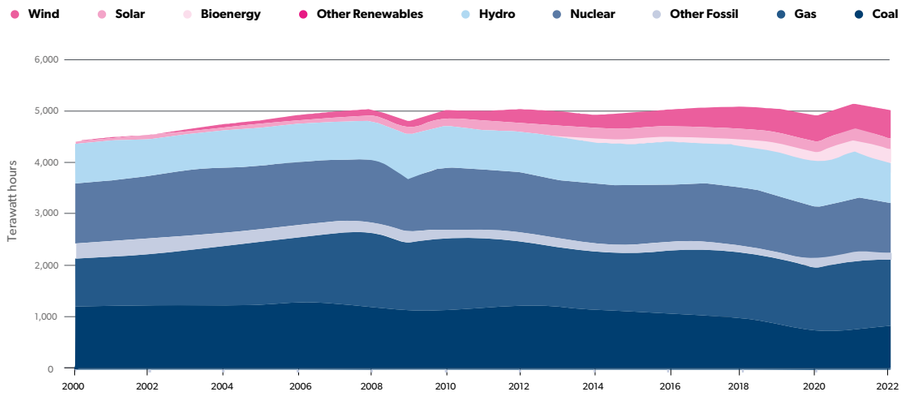
The invasion of Ukraine triggered a **process of re-examination of energy policies and priorities in Europe**, questioning the actual feasibility of decades of infrastructure and investment decisions and profoundly reorienting international energy trade. The crisis also underlined the importance of investing in solid gas and electricity network infrastructures to ensure better integration of regional markets.

To meet these challenges, in May 2022 the EU adopted **REPowerEU**, the European Commission's plan in response to the turmoil generated by the conflict between Russia and Ukraine. The urgency to transform Europe's energy system is motivated by the need to comply with the 2015 Paris Climate Agreement and to eliminate the EU's dependence on fossil fuel supplies such as gas and coal from Russia.

In the plan, several measures were included with the aim of accelerating the transition, among them, **the doubling of photovoltaic capacity by 2025**, **installing 600 GW by 2030**, and a target of 10 million tonnes of renewable hydrogen produced by 2030, aimed at replacing natural gas.

The Commission is also proposing to increase the EU's 2030 target for renewables from the current 40% to 45%, and this plan could increase the total renewable energy capacity to 1,236 GW by 2030, compared to 1,067 GW in the *Fit for 55*package[22]. Moreover, according to recent analyses, **global investments in the energy transition hit a new record of USD 1.1 trillion** in 2022 and the renewable energy sector reached USD 495 billion in new investments for the year (2022)[23].

ELECTRICITY GENERATION BY SOURCE IN EUROPE (TWH)



SOURCE: EMBER, 2023 | CVA RE-PROCESSING

-6 %

Average annual reduction required over the next 8 years to meet FitFor55 emission targets

Compared to the European acceleration, Italy slows down in 2022

In 2022, the demand for electricity in Italy was **290,601 GWh** (vs. 318,075 GWh in 2021), and 54.3% was met by production from non-renewable energy sources, 31.8% from renewable energy sources and the remainder from the foreign balance[24].

According to Enea's latest quarterly analysis of the Italian energy system, the increased use of fossil fuels (+8% oil and +47% coal) is **slowing down the green transition**. In the first nine months of the year, while energy consumption was essentially at a standstill, with a forecast of a 1.5% drop over the whole of 2022,CO_2 emissions rose by 6%, with an estimated increase of more than 2% by the end of 2022[25]. Against the increased use of fossil fuels, which are almost returning to pre-pandemic levels, and a 3% reduction in gas consumption, renewables recorded an 11% drop, due to a reduction in hydro (-25% to the lowest in 15 years) that the increase in solar and wind (altogether +9%) failed to offset[26].

This scenario contributed to a **significant deterioration of the Ispred transition index** calculated by ENEA: -60% in the third quarter[27]. The decline is linked in particular to the worsening of the decarbonisation component, which has fallen to its lowest value in the history series: in this scenario, the European target of a 55% reduction in emissions by 2030 can only be reached if an average annual reduction of around 6% is achieved over the next eight years[28]. The increase in emissions is almost entirely attributable to electricity and heat production, refineries and energy-intensive industries.

At the moment, the most up-to-date target for the development of renewables in our country is the one outlined in the proposed Plan for the Ecological Transition (PTE), which talks about covering 72% of electricity generation by 2030 with clean sources, which corresponds to 70-75GW of new renewable generation and is aligned with the *Fit for 55* package target (40% of total energy from renewable sources by 2030), presented by the EU last July. **But now the bar is raised again, to 45%[29].** Considering the pace at which gross installed capacity has been increasing in recent years (55.5 GW in 2019 and 58 GW in 2021)[30]the construction of 75 GW by 2030, in line with the Pte targets, would more than double the installed capacity of renewables between now and 2030, with an increase in installation of 8.3 GW per year, just to meet the *Fit for 55* targets. In order to accelerate the process of energy independence from Russia, the REPowerEu targets a 20% faster pace of renewable energy development than *Fit for 55*, increasing the installation target to at least 10 GW per year. At this rate, Italy would be able to replace 7.5 billion cubic metres of gas by 2025, i.e. about a quarter of Russian gas imports to Italy[31].

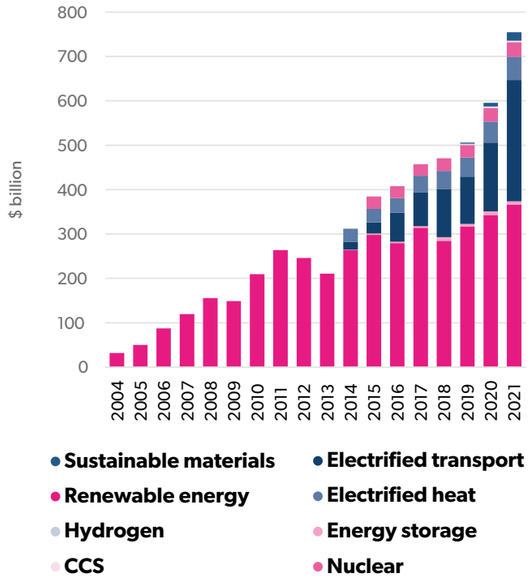
THE FIGHT AGAINST CLIMATE CHANGE

Current commitments to mitigate and adapt to the effects of climate change are insufficient

Climate change at a point of no return: **2022 was the hottest year ever**[32].

To address this crisis, one of the best-known and most relevant frameworks in terms of constraints was approved at the international level: at the **Conference of the Parties (COP21) held in Paris in 2015,** the Parties to the United Nations *Framework Convention on Climate Change* (UNFCCC) reached a historic agreement to **keep global temperatures well below 2°C compared to pre-industrial levels** and to continue efforts to further limit the temperature increase to 1.5°C. This commitment was then renewed during the **last COP27, held in Sharm-El-Sheik, Egypt**, in November 2022, as well as during the G20 in Bali, also in the same month, which also saw representatives recognise the need to **accelerate commitments to phase out the use of coal**. However, although as a result of these international agreements some 91% of the world's GDP is now covered by decarbonisation targets by 2050, these efforts risk being insufficient as temperatures are likely to reach 2.5°C by the end of the century[33] unless timely and radical action is taken.

GLOBAL INVESTMENTS IN ENERGY TRANSITION BY REGION



SOURCE: BLOOMBERGNEF, 2022 | CVA RE-PROCESSING

According to the "*Mitigation of Climate Change*" report of the *Intergovernmental Panel on Climate Change* (IPCC), published in spring 2022, humanity only has three years left to halt global warming. In its latest report published in December 2022, the International Energy Agency (IEA) estimates that required investments in the electricity sector from 2023 to 2052 will amount to approximately **USD 2.3 trillion per year** and that renewable energy capacity will grow by **2,400 GW between 2022 and 2027**, which currently corresponds to the entire installed capacity of China[34]. Based on the scenarios, more than **90%** of the increase in global electricity demand over the next five years will be due to **renewables**, which, overtaking coal, will become the **main source of electricity by early 2025**[35]. Already in 2022, wind and photovoltaics generated one fifth of the EU's electricity (22%), surpassing gas (20%) for the first time and remaining well above coal (16%)[36]. However, the drought in Europe and the energy crisis in 2022 created a large gap in European electricity production of 185 TWh, one sixth of which was covered by increased fossil production. Moreover, as coal is cheaper than natural gas, it accounted for most of the increase, **up 7% year-on-year**, causing the EU energy sector's emissions to rise by 3.9% by 2021.

Drought has caused a negative hydroelectric production record in Europe

- 66 TWh

the decrease in hydroelectric production compared to 2021 due to the lack of rainfall

In 2022 **Europe faced its worst rainfall shortage in 500 years**; the European Drought Observatory report states that 47% of the continent was in an alert condition, with a clear deficit of soil moisture. In this scenario, **hydropower production** in **2022**, at its lowest level since 2000, was **66 TWh lower than in 2021**, a drop of 19% year-on-year (from 349 TWh in 2021 to 283 TWh in 2022)[37]. The Alpine region was the hardest hit, with production 50 TWh below average levels between 2000-2021. Of these, 15 TWh went to Italian production, 13 TWh to French production and 11 TWh to Spanish production. In September 2022, hydropower production returned to 2021 levels, and 2023 began with hydropower stocks only slightly below historical averages.

Reduced hydroelectric generation, which in Italy in 2022 decreased by 37.7% compared to the previous year, contributed to the **6.1% increase in production from thermoelectric sources**[38]. Five-sixths of the gap with nuclear and hydropower was bridged **by the increase in wind and solar production** and the fall in electricity demand, while only one-sixth was offset by the increase in coal production. Production from gas remained almost unchanged (+0.8%)[39]. Despite the significant drop in hydroelectric production, the CVA Group saw a reduction of 28%, lower than the national average, thus partly containing the production impact of the water shortage.

In **Italy**too, the lack of rainfall (-46% compared to the last 30 years) and the **scarcity of winter snowfall,** reduced by almost **80%** in some Alpine locations, have led to a loss of natural and artificial water reserves that feed hydroelectric plants. The water crisis had a major impact on the energy storage of the Italian hydropower system: while at the beginning of 2022 the value of energy stored in Italian reservoirs was 22% lower than the average of the previous seven years, at the end of the year it was more than 40% lower.

The repercussions of a changing climate are more pronounced in mountainous areas

As a mountainous area, the Aosta Valley is particularly susceptible to the effects of climate change; a warming of about **1.7°C** occurred in the 1974-1995 period, greater than in other non-Alpine areas. [40] **Glaciers** in the area also respond directly and rapidly to the dynamics of climate change, changing their mass and morphological and dynamic characteristics. These changes are observed in the progressive retreat of glacier fronts, the increase in crevasse areas, the formation of depressions and lakes on the surface, and the increased instability of hanging seracs, blocks of ice of varying sizes that form at high altitudes due to the intermittent movement of glaciers[41]. In this context, the **Cabina di Regia dei Ghiacciai Valdostani** (CRGV - Aosta Valley Glaciers Steering Committee) has an important role in that it has been collecting local and timely data for decades, disseminating them in the region and then sharing them with the scientific community.

The Automonous Region of Aosta Valley's **Climate Change Adaptation Strategy** for the **2021-2023 period** aims to develop actions to promote land adaptation and mitigation to climate change. The main objectives are to **minimise the risks of climate change** and reduce the vulnerability of the territory; **protect the health and safety** of the population; conserve biodiversity and natural resources; increase the **adaptive capacity** of society, the economy and the environment; strengthen the territory's ability to seize **the** opportunities arising from climate change; and **define a long-term vision** of the regional territory resilient to climate change.
The alarm bells are also ringing due to the scarcity of snow, which has a negative impact on the significant reduction of potential energy reserve volumes. The level of snow water *equivalent*, i.e. water contained in the snowpack, is also lower than in 2021.

The causes of the change in global temperatures thus add up to the effects of the energy shock, creating a dual challenge.

The Autonomous Region of Aosta Valley responds to climate challenges with a decarbonisation strategy to 2040

Despite the short-term emergency measures put in place to meet contingent challenges, the EU and Italy continue on their path towards ecological transition, and so does the **Autonomous Region of Aosta Valley**.

The **Roadmap** for a *Carbon Free* and *Fossil Fuel Free* Aosta Valley in 2040, approved by **Resolution 151 of 22 February 2021**, is part of a process started in 2018 and sets out the guidelines for the identification of the Regional Strategy for Decarbonisation. In fact, the document was created with the aim of **defining the actions needed, the related costs, and the impacts on regional society to achieve the dual and ambitious goal by 2040**, thus ahead of the European target set for 2050.

The Guidelines, starting from European policies and goals, analyse the Civil sector, Transport, Industry, Agriculture, Livestock and Waste Management and propose possible actions for **efficiency improvement, energy conversion and electrification of consumption with electricity** from renewable sources.

A 2030 Agenda for the Aosta Valley

January 2023 saw the approval of the **Agenda 2030 regional sustainable development strategy integrated with the Strategic Framework,** which sets out on a local scale the guidelines identified at European and national level, identifying five thematic priority objectives: **a smarter, greener, more connected, more social Aosta Valley closer to citizens**.

It is a matter of bringing plans that aim to use regional and European resources on the same level within the framework defined by the Agenda 2030 goals. Among other objectives, the Plan also envisages the implementation of actions to safeguard and protect water in the region.

The goal is to achieve a low greenhouse gas-emitting Aosta Valley through "*policies to curb and reduce fossil fuel consumption, energy conservation and efficiency, promotion of technological innovation, reduction in consumption and waste in all sectors, and enhancement of energy production from renewable sources, consistent with the protection of health, the environment and the landscape*."[42] The Roadmap is therefore the cornerstone of the regional planning still in the making such as the **Regional Environmental Energy Plan** (PEAR) 2030, which is currently being prepared.

In this scenario, through the CVA 2022 project, the CVA Group actively collaborates with the Region to monitor cutting-edge technologies, in particular to study and support the electrification of carriers that today are still the prerogative of fossil fuels, such as heating systems and mobility, always with special attention to the environment.

CVA's contribution to the decarbonisation of the Aosta Valley thus spans different areas: from the development of production from RES, to the research of new renewable sources (such as green hydrogen), to the development of electric mobility and energy communities, to its position as general contractor for energy efficiency in buildings (Ecobonus).

Arpy Lake | Aosta Valley

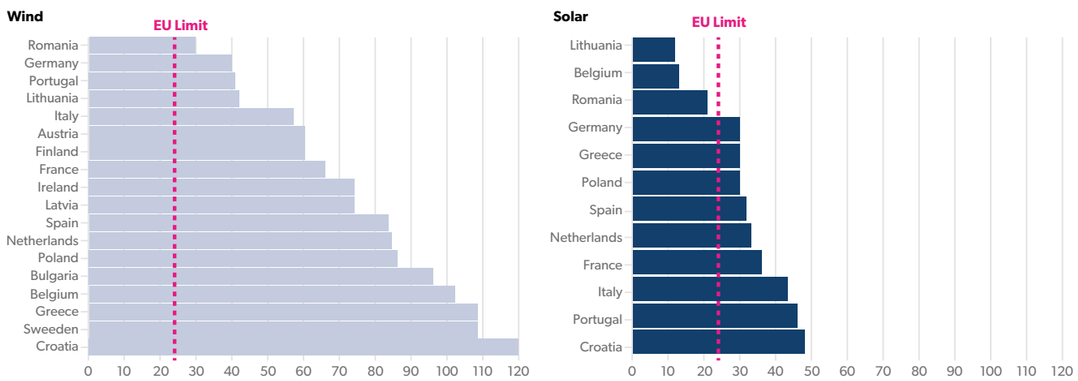
THE LONG WAITS FOR PERMITTING IN EUROPE

Europe implements extraordinary measures to unlock and accelerate the growth of renewables

At a time of a real energy crisis, with big question marks over the availability of energy for the coming months, **bureaucracy and slow authorisations** are a further point of inefficiency which have prompted the Commission to move quickly. The *permitting* limits in force in Europe are in fact systematically exceeded by almost every Member State. The President of the European Commission, in her speech to the **plenary of the European Parliament**, proposed a new emergency regulation under Article 122 TFEU (Treaty on the Functioning of the European Union) to **speed up permitting**.

The regulation provides for urgent and targeted measures for specific technologies and projects with high potential for rapid deployment and low environmental impact. Temporary regulations will set **maximum time limits** for issuing solar energy permits, updating the capacity of existing renewable energy plants, and introduce a presumption of overriding public interest for renewable energy projects. By doing so, it will be possible to unlock several renewable projects already in the next 12 months and replace 14 billion cubic metres of gas already next year.

WIND AND SOLAR AUTHORISATION TIMES QUICKLY EXCEED THE EU LIMIT



SOURCE: EUROPEAN COUNCIL, 2022 | CVA RE-PROCESSING

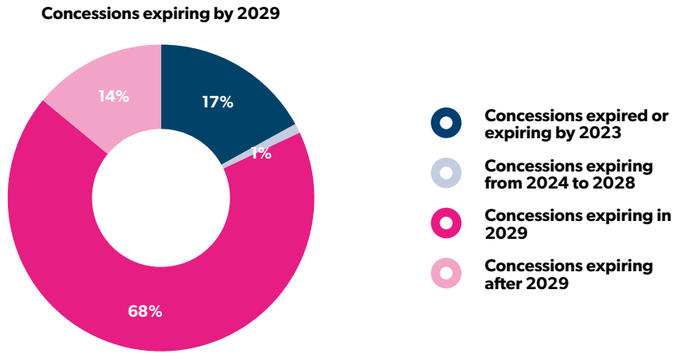
The obstacle race for the development of renewables in Italy

Italy is identified as the Member State in Europe with the most significant *permitting* process, related to renewables, in terms of duration, **averaging 7 years**.

In Italy, the Photovoltaic Alliance has stated that there are currently **40 GW of solar power plant projects awaiting authorisation**. These private investment projects, without state burdens, are worth Euro 35 billion and have already been submitted and ready to be implemented in just 18 months. Due to the lack of authorisations, however, they are all at a standstill. According to data reported by the MASE (Ministry of the Environment and Energy Security), about 380 plants for the production of energy from renewable sources have yet to be analysed. Of these, as of last September, only one wind farm had been approved. 52% of the 322 solar plants are still in the first phase of the bureaucratic process and only 42% have reached the green light for the second phase of approval[43].

In addition to the obstacles presented by *permitting*, another difficulty in Italy concerns the fact that more than 80% of hydroelectric plants are over 70 years old and **86% of concessions for large hydroelectric derivations have already expired or will expire by 2029**. It is therefore a priority to address the criticalities of the current Italian regulatory landscape and to unlock investment. An analysis of the picture of concessions for large hydroelectric derivations at regional level shows that Lombardy is the region with the largest number of concessions (71), followed by Piedmont (68) and Trentino-Alto Adige (47). These 3 regions account for **79% of the total number of concessions already expired or expiring by 2023**[44].

EXPIRY OF CONCESSIONS FOR LARGE HYDROELECTRIC DERIVATIONS (% VALUES), 2010-2047



SOURCE: THE EUROPEAN HOUSE - AMBROSETTI ON MBS CONSULTING DATA, 2022| CVA RE-PROCESSING

An uneven regulatory framework for hydroelectric concessions

The current regulatory framework for hydropower concessions is uneven. In Italy, the lack of specific regulations within the concessions regime is causing political debate on the regionalisation of concessions. Today, the **Competition Bill** envisages the introduction of tenders for hydroelectric concessions, allowing foreign operators to participate, and further distancing Italy from a perspective of homogeneous European regulation.

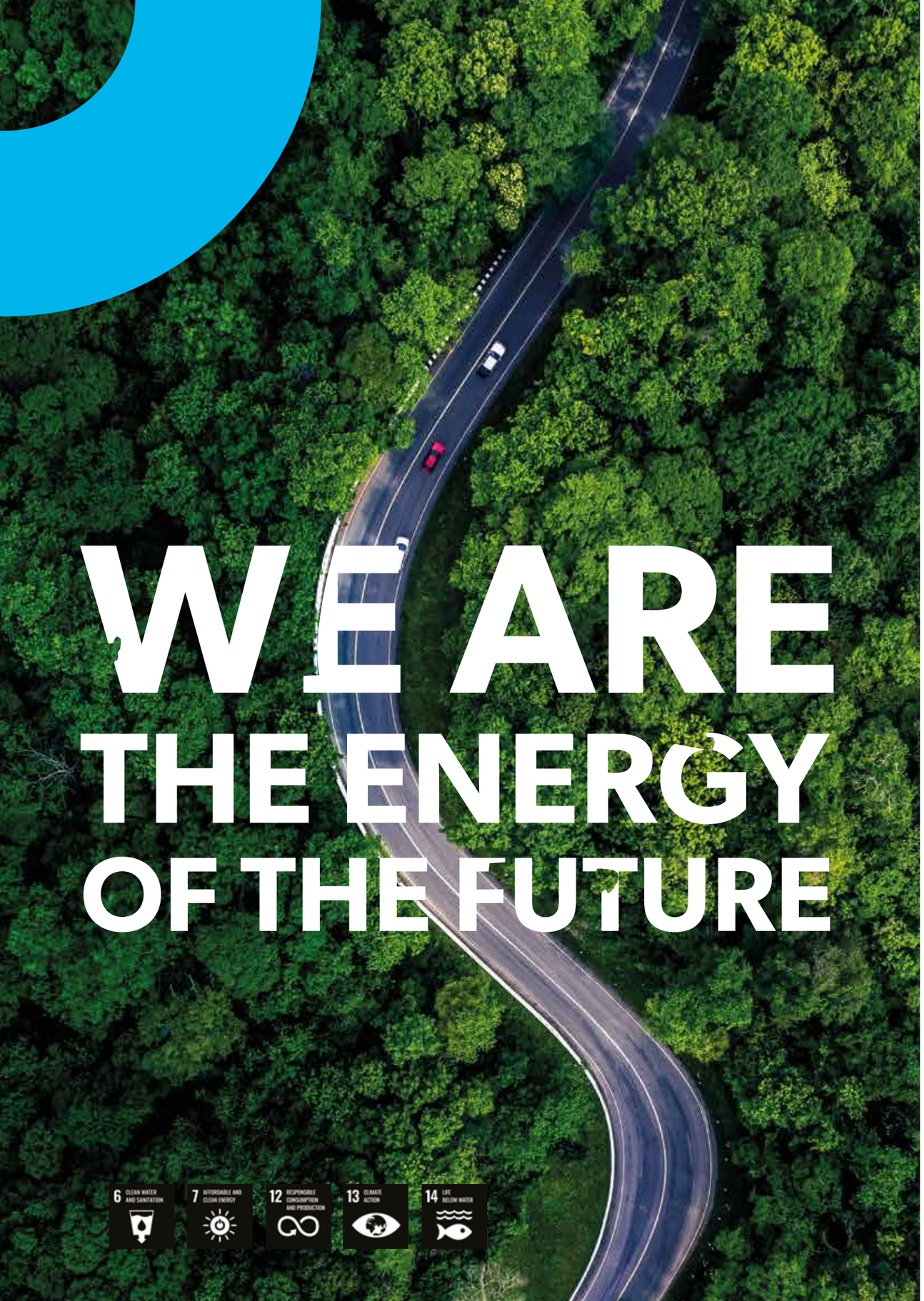
The DDL (legislative decree) stipulates that procedures for awarding concessions for large water derivations for producing hydropower should be conducted according to competitive, fair and transparent parameters.

In 2022, the Decree **shifted to the end of 2023 the deadline by which tenders must be called on expired concessions**, about 20% to date, creating a regulatory framework within which the Regions will be able to move with **relative autonomy** - and thus further inhomogeneity.
Although the regulation of tender auctions should be implemented 5 years before the expiration date of concessions (and thus expected for most cases in 2024), **to date no progress has been achieved on the issue.**
Hydro remains today, both worldwide and in Italy (with over 40%), the leading renewable source for electricity production, with the added advantage of being programmable. **Our country is the third in Europe for hydroelectric power**, but is in fact the only one to have decided - under the first Conte government - to make it contestable, providing for competitive procedures to re-allocate expiring concessions and unlock investments quantifiable at around Euro 9 billion. All this becomes relevant when considering the global geopolitical context, in which **Italy aims to free itself from Russian gas as soon as possible**[45].

Hydropower is the first renewable source for electricity production.

45 IlSole24Ore, Extra profits and concessions, hydro is under pressure (2023)

Valpelline power station | Aosta Valley

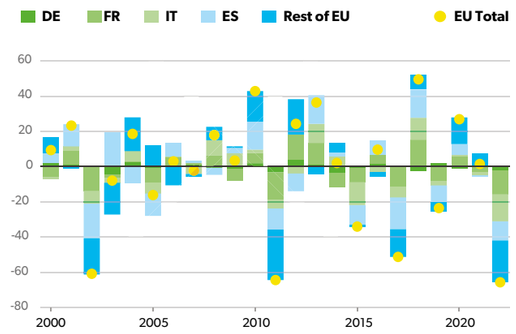


WATER

Energy from water ranks among the oldest sources of renewable energy: the world's first hydroelectric power plant was built in 1879 near Niagara Falls, and became fully operational in 1881. Since then, the spread of hydropower has helped meet the world's energy demand and has never stopped. Today, meeting about **15.21% of the** world's electricity needs[46], hydropower is a crucial player in the ecological transition and the largest source of clean energy. With an increase in installed capacity of 26 GW in 2022 (vs. 14 GW in 2021 and 17 GW in 2020), hydropower ranks sixth in world electricity production. According to recent estimates, the market will continue on an upward trajectory, surpassing 1,200 GW of installed capacity globally for the first time and catalysing over USD 36 billion of investment[47]. As far as Europe is concerned, 2022 was an *annus horribilis* for hydropower, which recorded the worst performance of the new millennium, providing **10% of electricity production**. The extraordinary lack of rainfall and high temperatures in Europe caused an overall reduction of 19% compared to 2021, resulting in a total decrease of 66 TWh[48] (from 349 TWh in 2021 to 283 TWh in 2022).

Among the most impacted countries is **Italy**, which has seen the worst drought in 70 years: consider that at the beginning of 2022, the value of energy stored in Italian reservoirs was 22% lower than the average of the previous seven years. By the end of the year, this figure reached -40%, causing hydropower generation to shrink by about 38.5% compared to 2021. Overall, from January to August, Italian hydroelectric plants produced 20,981 GWh of energy, compared to 34,105 GWh in the same period in 2021[49]. Compared to the national average, the CVA Group's hydroelectric production was more contained to the negative impact of the drought, with the annual drop in production at -28%. In 2022, hydropower installed capacity in the country covered **8.3% of the national electricity demand** (including pumping), compared to 13.4% in 2021[50].

ANNUAL CHANGE IN HYDROELECTRIC GENERATION IN EUROPE (TWH)



SOURCE: EMBER, 2023 | CVA RE-PROCESSING

51 Consistent with current methodological guidelines (GHG protocol), the calculation of avoided CO_2 was carried out with reference to the gross hydroelectric power production figure of 2,085 GWh.

Key facts and figures

934.5
MW
total installed power

2,063
GWh
Net production of hydropower in 2022

6
large CVA dams

32
CVA hydroelectric
plants

951,924
tonnes CO_2[51]
avoided thanks to the energy of water

+128
million m^3
the water storage capacity of large dams: half of the water consumed every day in Italy

The role of hydropower in the country's energy transition

Today, hydropower is the leading source of clean energy in Italy, producing **41% of Italy's total renewable energy**. This resource is the main driving force of the entire sector: in Italy there are about 4,300 plants producing a total of 46 TWh of energy per year, employing about 15,300 workers.

Due to their ability to rapidly increase and decrease electricity production, these plants provide flexibility and security to the power grid.

In fact, hydropower relies on the only renewable source, water, which can be easily stored, allowing supply and demand to be regulated to ensure the proper functioning of the electricity service. It is now known that hydropower plants act like a **green battery**, recharging when energy supply exceeds demand, and vice versa, discharging when demand increases.

For this reason, the presence of hydroelectric plants contributes to the **security of the electricity system** by regulating the voltage and quickly starting production without having to depend on an external power source, making them extremely flexible in the event of an emergency.
However, in order to exploit the full potential of hydropower, it is necessary to renovate ageing plants, some of which are more than 100 years old. Maintenance activities and plant part replacements contribute to keeping the Italian hydroelectric park efficient, bringing a gain of 5.8 GW of power and 4.4 TWh of energy per year, with emission savings of at least 2 million tonnes of CO_2 and the creation of 2,000 jobs[52].

Finally, hydroelectric plants, by storing excess water in the event of particularly heavy rainfall, contribute to **reducing hydrogeological risk and protecting the environment and surrounding communities**.

Investments for resilience and upgrading the hydroelectric park

CVA's contribution to Italian hydroelectric generation is realised through the direct management of **one of Italy's most important hydroelectric parks**: 6 large dams, 61 intakes (33 of which classified as regional dams), more than 210 km of channels, about 50 km of penstocks and **32 power plants with 74 hydroelectric units**.

The plant park, with a total capacity of 934.5 MW, produced **2,063 GWh net of clean energy in 2022**. Thanks to this, the **Aosta Valley is one of** Italy's biggest renewable energy producing regions.

One of the cornerstones of CVA's new 2022-2026 Integrated Plan is **the overall increase in renewable energy production: more than 400 MW of new installed capacity by 2025**. The optimisation of production capacity also concerns the hydroelectric plants; the Group has in fact set out to modernise a number of hydroelectric infrastructures.
The year 2021 saw the start of the projects involving the **revamping *of* the Hône 2 and Chavonne plants**, with the start of the Environmental Impact Assessment (EIA) procedure at the Autonomous Region of Aosta Valley for the former and the assignment of the design and Environmental Impact Study (EIS) for the latter, respectively. During 2022, the Environmental Impact Assessment (EIA) procedure was concluded with a conditional positive assessment for the rebuilding of the Hône 2 plant. At the same time, the consultation (*scoping*) phases with the Ministry of Ecological Transition (MASE) began for Chavonne in order to define the contents of the Environmental Impact Study to be presented in the national EIA process.

+400MW

of new installed capacity for clean energy production by 2025

Palasinaz Lakes | Aosta Valley

Regulatory constraints for plant construction and operation

Hydropower production is governed by a complex set of laws and regulations. In order to build and operate a hydroelectric plant, it is necessary to obtain **authorisations for environmental compatibility**, for the withdrawal of public surface water and for the operation of the plant. The project must pass an Environmental Impact Assessment (EIA) process to verify its effects on health, landscape, biodiversity and cultural heritage[53].

With the **recent Decreto Semplificazioni bis**, some changes were introduced to facilitate the decarbonisation goal of the PNIEC. Article 31-quarter, in fact, includes "hydroelectric storage plants through pure pumping" in the definition of "plants powered by programmable renewable sources" and an amendment to Article 12, paragraph 3, stipulates that the Single Authorisation must be issued by the Ministry of Ecological Transition upon completion of the procedure.

In addition to *revamping* projects, CVA has embarked on a journey to **assess the efficiency of plants** in the use of water resources, to identify interventions that can make them **more resilient** to changes in the hydrological cycle due to global warming. In the light of climate change and considering the unique environmental characteristics of the regional watercourses, the improvement of the systems is focusing on the possibility of increasing the maximum flow derived, to be withdrawn during periods of greater availability and to release greater quantities during periods of scarcity, in order to protect the environmental and landscape components with the aim of **optimising the use of water and the production of energy from renewable sources and at the same time protecting aquatic ecosystems**.

The refurbishment and renovation of Hône 2 and Chavonne

After a long process, confirming the complexity of the *permitting* system in the national context, the **Hône 2** plant rebuild and expansion project passed the Environmental Impact Assessment (EIA) procedure. The project was necessitated by the age of the plant, which was built in the years 1919-1924 to meet the industrial needs of the time. The age of the plants would lead to increasingly complex and costly maintenance work in the future, which, over time, could become unsustainable and lead to the plant being decommissioned.

The intervention will **double the annual production of renewable energy** (from 50 GWh to 100 GWh) thanks to an increase in the maximum flow rate. At the same time, in order to safeguard the environmental, faunal and landscape matrices of the territories and watercourses, there will be an increase in riverbed releases to guarantee the Ecological Flow[54] and a renunciation of withdrawals in some secondary watercourses, which are currently captured along the valley and will therefore be renaturalised.

This is a complex project that involves the complete reconstruction of all the plant works and, in particular, a 9 km tunnel between the municipalities of Champorcher and Hône, replacing the existing canal.

The intervention is a tangible example of how a more rational use of the water resource can make the *repowering* of a historical plant sustainable, guaranteeing greater energy production and, at the same time, the other requirements of water use.

Similarly, the Chavonne plant is **also to be refurbished and upgraded**. The initiative will allow the complete modernisation of the plant and will lead to an increase in the annual production of energy from renewable sources, providing a concrete opportunity to achieve the objectives set by the regional sustainable development strategic framework.

In **October 2022, the Preliminary Environmental Study** and the project for the renovation and upgrading of the Chavonne plant were submitted to the MASE for the voluntary preliminary consultation required by Art. 21 of Legislative Decree 152/06 with the aim of identifying the contents of the Environmental Impact Study and attached documents to be submitted in the National EIA process.

The purpose of the S.p.A. (Preliminary Environmental Study) is to define the scope of the information, the relative level of detail and the methodologies to be adopted for the preparation of the Environmental Impact Study (EIS), as well as to **provide the Competent Authority with an initial hypothesis of what is considered to be the elements most affected by the work and the potential impacts** to be investigated in the subsequent phases of the process.

Dams for water and land protection

Dams represent an artificial construction to dam a watercourse. They are used for various purposes, including regulating the flow of a natural watercourse or forming a reservoir for hydroelectric power plants. A dam is equipped with works that allow the management of reservoir and excess water (tunnels or diversion channels, spillways and outlet works). Its height can vary from a few tens to hundreds of metres: if it reaches 15 metres or the reservoir volume exceeds one million cubic metres, we are talking about **large dams**.

There are currently **more than 45,000 large dams in the world**, producing a total of about one fifth of the global electricity generated[55]. In Italy, there are about 530 large dams under state jurisdiction, 60% of which are intended for hydroelectric power production.

The CVA dams are important structures that conserve significant water resources and their maintenance is part of the **strategy of sustainable management of environmental resources**, established by Legislative Decree 152/2006, which repealed Legislative Decree 152/99 on the protection of water from pollution, for the transposition of Directive 91/271/EEC[56] and Directive 91/676/EEC[57]. Their storage capacity exceeds 128,600,000 m^3, the equivalent of half of the average daily water consumption of the entire Country.

155 metres

the height of the Place Moulin dam, CVA's most impressive dam

In a context in which the water resource is ever more at risk, these artificial reservoirs become genuine lungs of water, able to ensure the continuity of the resource.

In the areas concerned, they play a key role in reducing the impacts of floods, storing the volume of water produced by heavy rainfall to reduce the disruptive force of water and allow it to drain away gradually, as well as ensuring better distribution of energy throughout the territory.

CVA is a member of the **Italian National Committee for Large Dams ("ITCOLD")**, a cultural and scientific association set up to promote the study of dams, from their construction to their commissioning and any related problems. In 2022, ITCOLD and CVA collaborated, together with IREN, in the organisation of the eighth edition of the **Workshop "Dams and Territory - The Realities of the North-West"**, held on 11 and 12 October 2022 in Saint-Vincent, Aosta. The theme of the event was the evaluation of the benefits and problems associated with the presence of artificial reservoirs on the territory. It was therefore an opportunity to illustrate the actions carried out by concessionaires to foster a positive relationship between the plants and the territory, questioning the role of hydroelectric plants in the ecological and energy transition. The aim of these events is generally to promote awareness of the work of concessionaires in favour of the sustainable development of the areas where these infrastructures are located.

Place Moulin | Aosta Valley

Evolving water resource management to reconcile ecosystems and transition

This year's climatic events have made the key role played by hydropower players in the sustainable and efficient management of water resources even more evident, ensuring their availability even in times of drought.

For this reason, the CVA Group keeps track of the amount of water withdrawn annually, which is calculated by means of hydroelectric production meters installed at the power stations. The data collected is then converted into a water withdrawal value using **conversion coefficients**[58] specific to each plant, which take into account factors such as the height of the drop, the water flow (flow rate), the gravity coefficient and the efficiency of the installed turbines. In 2022, CVA withdrew a volume of **7.8 million m³** of water (compared to 9.3 million m³ in 2021) from surface water in its entirety. Since the water drawn, once turbined, is then **totally returned** to the watercourse, water consumption in energy production is zero.

In order to preserve the chemical and physical characteristics of water bodies[59] as well as the biocoenosis typical of natural conditions, hydroelectric derivations must guarantee the release into the underlying water body of a certain quantity of water defined as the **Minimum Vital Flow ("MVF")**. In 2022, CVA passed 100 % of the checks on the release of the correct amount of MVF.

The concept of MVF has evolved with the definition of Ecological **Flow (**EF), established by the European Ecological Flow Directive[60]. In addition to defining a new flow release parameter, geared towards the protection of ecosystems, this release must comply with three objectives: the achievement of healthy status of water bodies, the demands on water uses and the decrease in resource availability due to the effects of climate change[61].

In this evolving context, CVA started an experimental project in 2018 aimed at adapting the current Minimum Vital Flow (MVF) releases to the new concept of **Ecological Flow**. With this in mind, in 2022 and in the context of the activities carried out in collaboration with the CIMA Foundation, the CVA Group completed the application of the **Continuum hydrological model** in order to reconstruct the series of natural average daily flow rates, refined in particular on the lean regimes, which are of particular relevance for the protection of fish fauna. The experimentation involved 30 river sections corresponding to the same number of intakes, making it possible to reconstruct **the time series of natural discharge into the watercourses** over a 13-year time period (2008-2021) on the basis of meteorological observations from the regional network, such as rainfall, air temperature, relative air humidity, wind speed, snow cover height, and incident solar radiation.

Still on the subject of proper management of the resource, it is important to consider that the reduced water availability in watercourses during the summer months can create **sharing needs with other water users**, such as Land Improvement Consortia that use the resource for irrigation. In response to this problem, CVA has been working for years with other water operators to optimise the use of water resources and their equitable distribution. To this end, CVA participates in **two technical round-table working groups organised by the regional water authority**, concerning two of the river basins where water scarcity has already caused critical situations in recent years.

The Continuum Model

The Continuum hydrological model, developed by the CIMA Foundation in collaboration with the Regional Functional Centre (CFR) and already used for several years in Aosta Valley, was used to estimate the average daily natural flow rates. The model:

- describes the multiple physical processes that are part of the hydrological cycle and involved in the inflow-outflows transformation;
- is able to simulate the flow trend over time in a continuous manner throughout the year, being able to cope with both floods and low flows as well as intermediate regimes;
- describes the role of snow and ice, estimating the accumulation, quantity and time course of melt, and glacial evolution - these aspects are delegated to a specific mathematical model, S3M, also developed by CIMA and coupled with Continuum;
- is a distributed model that explicitly takes into account the spatial variability of the area under consideration (e.g. morphology, soil types) and the meteorological quantities involved in the calculations (precipitation, air temperature and humidity, wind speed, solar radiation);
- is able to consider the presence of hydraulic works such as dams and anthropogenic levies/releases
- will be able to simulate the effects on future daily flow rates under different rainfall and temperature scenarios resulting from expected climate change.

Extraordinary measures in response to an unprecedented water emergency

Faced with the water emergency in Italy in June 2022, the CVA Group took extraordinary measures, within the limits of its possibilities, **by releasing 75% of the water from its reservoirs**. This threshold is the maximum technically possible release to avoid damage to both the hydroelectric production system and the national transmission grid regulation system. The increase was **over 30%** compared to last year during the same period. In a year in which CVA's reservoirs saw reservoir levels 40% lower than in 2021, this company choice allowed more than 41 million m^3 of **water**, equivalent to about 16,500 Olympic-size pools, to flow **to Piedmont** in June alone, demonstrating the Group's willingness to combine environmental and industrial needs.

Inter-regional collaborations for the protection of water resources

The Alps provide 90% of the water supply of the lowlands in Europe, especially in certain seasons of the year. The mountain range therefore represents a valuable resource (Europe's *water tower*) for maintaining balanced living conditions for European citizens and socio-economic activities. Due to water deterioration, the water resource is increasingly at risk, suffering the consequences and impacts of climate change and anthropological activities.

To counter threats to the water resource, CVA continues to participate as an observer in the **RESERVAQUA** project, funded by the 2014-2020 INTERREG Italy-Switzerland cross-border cooperation programme. Beginning in 2019 and ending in December 2022, the project aims to **quantify the real availability of the water resource** and develop an integrated management strategy to ensure its **equitable use** by combining drinking, agricultural and industrial purposes. The objectives of the project include a better knowledge of the availability and actual use of the resource, the dissemination of a common water culture and the development of policy instruments for its management.

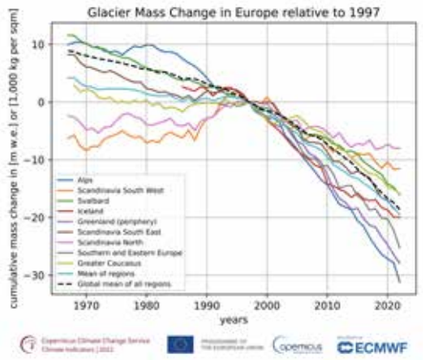
Joint Responses for the Study and Protection of Alpine Glaciers

From 1957 to 2021, the **total average change in the thickness of global glaciers was estimated to be about 32 metres**. After a limited ice loss between the 1970s and 1980s, this phenomenon has seen an acceleration since 1990[62].

As far as the Aosta Valley region is concerned, the figures are clear: 2022 was the worst year ever recorded for Aosta Valley glaciers[63].

In fact, together with the reduction of the glacial mass and the retreat of the fronts, the fragmentation of the apparatuses and the emergence of more or less large rocky islands continue, which will further accelerate the expected melting dynamics.

CHANGE IN GLACIER MASS IN EUROPE SINCE 1997



SOURCE: COPERNICUS, 2022

SottoZero 2022: the result of a multi-year collaboration

Compared to 1999, 32 glaciers have been lost in Aosta Valley to date, with a reduction in the total area of no less than 34 km^2, **equivalent to 22% of the regional glacial surface**. Glacier fronts retreated by an average of 13 metres and the loss of ice mass in 2020 was four times greater than the already negative average of the last twenty years[64].

These are the results of a study and monitoring of the **evolutionary framework of the cryosphere**[65]. For more than 15 years, CVA has been collaborating with the **Cabina di Regia dei Ghiacciai Valdostani**, *an* organisation set up in 2004 with the aim of coordinating all the actors dealing with the **cryosphere** in the Valdostan territory in research, territorial management, safeguarding and exploiting the resources linked to the **glacial heritage**.

The aim is to facilitate the exchange of knowledge, foster synergies in study activities and disseminate acquired scientific *know-how*.

One of the planned aspects of this collaboration is the publication of "**SottoZero 2022**", a continuously updated report comparing the data of the last hydrological year with long-term average values.

This research made it possible to identify **a set of indicators related to the consequences of climate change on glaciers**. For example, in 2022 the loss of mass (ice) was four times higher than the already negative average of 2001-2020. As far as precipitation is concerned, 550 million m^3 of snow water resources were recorded in 2022, 51% less than the average of the last 20 years.

Monitoring activities confirm a worrying direction for glaciers

Rising temperatures in winter and spring reduced the frequency of snowfall and consequently the duration of the snowpack. In fact, the exceptional weather and climate conditions of the year that has just ended, characterised by a particularly poor winter in terms of precipitation and an extremely prolonged period of ablation[66], had a major impact on the health of the glaciers, which arrived at the last quarter of the year in great distress. The glacier mass balance study activities[67] for 2022 confirm this direction.

On the **Timorion** glacier **in Valsavarenche**, most of the **annual mass balances are negative**, indicating that the glacier has been shrinking since 2003.

In fact, the average density is 347 kg/m^3, corresponding to an accumulation of just over 469 mm water equivalent. This value, among the lowest of the entire 22-year measurement series, follows only 2008, when snowfall accumulations corresponding to 389 mm of *water equivalent* were recorded. Last winter's accumulations amounted to 50% of the average of the last two decades.

Similarly, for the **Rutor Glacier**, 2022 ranks sixth in terms of mass scarcity over the past 18 years, with intermediate glacial melt measurements showing that by the end of July 2022 the ablation of the entire 2020-2021 season had already been reached.

A renewed alliance to monitor hydro-meteorological risk

Located along watercourses, CVA plants are exposed to the risks of hydro-geological instability and in particular flooding, a danger that affects plant operators and the populations living near them. It is therefore in the Group's interest to **monitor these risks** and find the links between rising temperatures and the availability of Alpine water basins. This can be achieved through the development and improvement of **tools and algorithms that allow for the refinement of modelling**.

With this in mind, in April 2022, CVA renewed the **Convention for Flood Forecasting, Water Resource Assessment and Analysis of the Impact of Climate Change on the Hydrological Cycle** for the fifth term. Signed together with the Autonomous Region of Aosta Valley, the Regional Agency for the Protection of the Environment of Aosta Valley, ARPA Aosta Valley, CIMA Foundation and Fondazione Montagna Sicura, the collaboration consists of the publication in 2026, of **study and observation reports** on the objectives set. The activities that directly involve CVA S.p.A. Include the evolutionary **maintenance and development of the modelling chain for** the ***Snow Water Equivalent (SWE)*** estimation on a regional basis, in order to manage the water resource and forecast floods, the evolutionary maintenance of the system for the probabilistic flood forecast and the evaluation of the water resource through the *FloodPROOFS* hydro-meteorological chain, already operational at CVA S.p.A.

66 Ablation is defined as the loss of ice through melting, evaporation, sublimation or detachment of masses

67 The difference between accumulation and ablation losses, expressed as volume water equivalent

Additional activities undertaken by the signatories include the provision and validation of high-resolution meteorological modelling, the **analysis of the impact of climate change** on the hydrological cycle and water resource availability, the **analysis of water resource availability** and **drought indices**, the verification of the improvement actions implemented by the Regional Functional Centre (RFC) and, finally, the provision of technical and scientific assistance.

Monitoring the layer on which the glaciers rest is essential. *Permafrost*, in fact, is the layer of permanently frozen ground, above which lies a surface that is sensitive to seasonal climatic changes, thawing partly during the summer and then rethawing again in the winter. The decisive aspect for *permafrost* resilience is the temperature of the ground surface, which is heavily influenced by solar radiation and the thickness and duration of the snow cover. The warming of *permafrost* results in the sliding of glaciers, increasing the likelihood of landslides and avalanches.
The warming of *permafrost-covered* soils is an important alarm bell for the climate of the region and the planet. Despite this, changes in the frozen ground layer are still not systematically analysed, and the scientific world does not have data and models that can provide reliable scenarios.

Protection of the environment and respect for biodiversity

CVA's hydroelectric works are located in a context characterised by a large presence of local flora and fauna, which are heavily dependent on river and lake ecosystems. In the operation of its plants, the Group acts in compliance with EU environmental legislation for the protection and restoration of European rivers and lakes. This also applies to sites located in protected areas, such as parks, Special Protection Areas (SPAs) and Sites of Community Importance (SCIs).

There are 12 CVA operational sites located within protected areas. At these sites, biodiversity is continuously considered and monitored in the day-to-day management of the facilities and in the definition of the Ecological Flow and beyond in the projects involving the construction of new facilities and modernisation of existing ones.

Sustainable hydropower: prospects for energy production and improving the quality of watercourses

In order to **make hydropower plants in the Alpine region resilient to climate change**, it is necessary, on the one hand, to maintain or increase the production of green energy by releasing more water when available (ordinary flood period) and, on the other hand, to maintain or improve the functioning of aquatic ecosystems by releasing more water in future periods of scarcity (low-flow period). This approach will bring benefits both locally and nationally, in line with Italian and European objectives of energy development and environmental protection.

Together with the Ecological Flows Directive, a Directive concerning the environmental risk assessment of water derivations ("*Diversion Directive*") was also adopted on 14 December 2017. The Directive provides a set of homogeneous guidelines that make it possible to **assess in advance the potential environmental impact of a diversion on the watercourse concerned**, in relation to the quality objectives set by the Management Plan at river basin district level and by the Water Protection Plans at regional level.

The assessment is carried out using the **Exclusion, Repulsion and Attraction (ERA) methodology**, which makes it possible to determine the extent to which the impacts resulting from water abstraction affect the qualitative status of the affected watercourse, allowing the suitability of a diversion from a classified watercourse to be established. In a nutshell, this methodology leads to the **definition of three different categories of environmental risk**, each of which is associated with a level of eligibility for intervention.

The compatibility of an instance is then assessed by determining its hazard by means of a hazard matrix to determine which of the three risk classes it falls into.

CRITERIA FOR ASSESSING THE COMPATIBILITY OF A DIVERSION

Environmental risk	ERA Criterion	Evaluation criteria for diversion compatibility with respect to the WFD/PdGPo
Low	Attraction	The initiative is feasible with the application of mitigation measures and in compliance with specific criteria, guidelines or prescriptions
Medium	Repulsion	The initiative is feasible with the application of special mitigation measures and in compliance with specific criteria, guidelines or prescriptions
High	Exclusion	The initiative is not feasible in the ordinary way. The initiative is feasible in cases in which the PdGPo has identified the requirements for the application of the derogation under paragraphs 5 and 7 of Art. 4 of the WFD.

However, these impact thresholds may represent a **limitation for the expansion of existing hydroelectric plants**, in particular with regard to the increase of the maximum derivable flow.

For watercourses with nivo-pluvial or nivo-glacial hydrological regimes, the withdrawal of an above-average flow value during the ordinary flood period, i.e. in the spring and summer seasons, could be tolerated as it does not necessarily lead to a decrease in habitat availability for aquatic species. On the contrary, it could be much more burdensome, from an environmental point of view, to overdraw during the lean period corresponding to the autumn and winter seasons, a period characterised by minimum flow values in the riverbed.

In partnership with the Politecnico di Torino (Polytechnic University of Turin) to study habitat resilience

CVA is carrying out a **joint study with the Polytechnic University of Turin** to **define the impact levels on the river habitat** according to the hydroelectric plant expansion options and the relative use of the water resource, preserving maximum derivable flow values both above and below the river's average.

In addition, **the minimum habitat thresholds that can be tolerated by fish fauna** will be assessed, considering all possible durations and frequencies. Moreover, a PhD co-funded under the National Recovery and Resilience Plan and the Convention between CVA and the Polytechnic University of Turin has been activated in 2022 to explore these aspects in depth.

The management and monitoring of waste materials

Effective waste management reduces the environmental impact of business activities while helping to protect natural resources. In 2022, the CVA Group produced a **total of 460.02 tonnes of waste**, 25% less than in 2021. Of this waste, 90% is non-hazardous (e.g. waste from intake scouring operations) and 10% hazardous (e.g. oils for hydraulic systems and maintenance).

CVA pays special attention to the management of its waste, carrying out continuous **monitoring activities** regarding the cleanliness of its ponds and waste materials. Actions taken to prevent the production of waste include the **management of waste materials**, derived from excavation operations, which are used, in a circular perspective, in the formation of road embankments and foundations, in the execution of embankments and dykes, and in the reprofiling of the morphometry of the affected riverbed area. In addition, some of the **oils used in maintenance** are returned to third parties to be regenerated and put back into the production cycle.

Finally, CVA is committed to collecting waste data from the different production sites through a centralised control made possible by the Atlantide programme, a management software program for controlling the environmental waste cycle.

Key facts and figures

12.5
MW
installed power

16
GWh
annual net production from photovoltaics

42
MW
the additional power of Sistema Rinnovabili operational from 2023

54,000
CVA photovoltaic
modules

7,641
tonnes of CO_2[73]
avoided thanks to the sun's energy

150
MW
additional power in the pipeline and planned for 2024, thanks to Bonifiche Ferraresi's shares

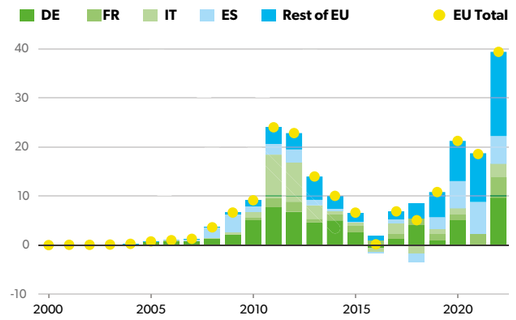
SUN

Photovoltaic energy has the ability to provide clean energy that can be distributed quickly and locally. Therefore, together with wind power, solar energy is expected to form the backbone of the future electricity system, **supplying nearly 70% of global electricity by 2050**. In this regard, according to the International Energy Agency (IEA), new technologies for solar power generation will enable an affordable energy supply, lowering the levelised cost of electricity[68].

In 2022, **268 GW of solar capacity** was installed and connected to the grid worldwide (compared to 167 GW in 2021) - thus surpassing the 1 TW threshold of global installed capacity, and planned installations for 2023 are in the range of 315 GW[69]. This is an incredible achievement when one considers that only 20 years ago, the cumulative grid-connected photovoltaic value was only 2 GW, and today it is 500 times as much. Commercial and residential solar installations account for 26% of the global renewable capacity expected over the next five years, and the prospects are for growth, considering high natural gas prices[70].

In just one year, EU countries installed a new photovoltaic capacity of 41.4 GW (+47% compared to 2021 and about 15% of the global total), **meeting the energy needs of about 12 million households** and replacing about 4.45 billion m^3 of gas[71]. In 2022, solar energy produced 7.3% (+1.6% compared to 2021, +3.8% compared to 2015) of the electricity mix, up 24% from 164 TWh in 2021 to 203 TWh in 2022[72].

ANNUAL CHANGE IN SOLAR GENERATION IN EUROPE (TWH)



SOURCE: EMBER, 2023 | CVA RE-PROCESSING

68 The Levelised Cost of Energy (LCOE) represents the average revenue per unit of electricity generated needed to recover the construction and operating costs of a generation plant over an assumed financial and operating life cycle

72 Ember, European Electricity Review 2023 (2023)
73 Consistent with current methodological guidelines (GHG protocol), the calculation of avoided CO2 was carried out with reference to the gross PV energy production figure of 17 GWh.

In **Italy**, photovoltaics returned to a level of annual growth not seen since 2013, reaching a total installed capacity of 25.5 GW, of which **2.6 GW will be installed in 2022:** this is the fastest growth at EU level. Part of this growth can be attributed to government incentives such as the 110% Superbonus and rising electricity prices that have made small-scale photovoltaic systems more attractive for self-consumption. Sixth in Europe for installed photovoltaic power[74], Italy will record an 11.8% increase in production in 2022 compared to the previous year[75].

Authorisation processes and identification of suitable land remain a key challenge for larger PV projects, but steps towards simplified procedures are already being taken. In this context, the installation of a minimum of 16.4 GW in the lowest scenario to a maximum of 34 GW in the most ambitious scenario of new solar power capacity, from 2023 to 2026, is envisaged[76].

CVA's photovoltaic plants

In fact, the Group has long been committed to strengthening its presence in the solar PV energy production sector, confirming its objective of investing 100% in *green energy*. Photovoltaics today remains one of the most attractive energy resources, offering wide scope for development while guaranteeing efficiency, sustainability and safety. Every year, the CVA Group produces solar energy through 4 **photovoltaic** plants, with 54,000 PV modules located in the regions of Aosta Valley and Piedmont.

The plants at Alessandria Sud, Valenza Fornace and La Tour are today capable of producing enough energy to meet the needs of more than 5,000 households, for a total annual production of 16,000 **MWh**[77] of photovoltaic energy. The fourth plant is located on the façade of CVA's headquarters and consists of 216 modules with a total installed capacity of 0.046 MW and an output of 14 MWh by 2022.

In December 2022, the CVA Group signed a preliminary contract for the 100% acquisition of **SR Investimenti Srl**, a company active in the photovoltaic sector, which will allow CVA to expand its installed photovoltaic capacity with an additional 42 MW of operating plants and 194 MW of authorised projects.

The generation source diversification objectives of the Integrated Plan will also be achieved through the launch of a *partnership* with the **BF Group**, Italy's largest agricultural producer and owner, which will allow the Group to expand its investment in solar energy with the new prospect of agri-voltaics through a virtuous collaboration that combines energy and agricultural expertise.

> **Through this partnership, CVA intends to develop an additional 150 MW of photovoltaic energy and consolidate the objectives of the group's strategic plan, with the aim of achieving a balanced mix of production exclusively from renewable sources and a redistribution of the risk profile. The deal is particularly important for us, because we see it as a pathfinder project in the development of the national agri-voltaic sector, which is crucial for the achievement of the EU targets on renewables, said Giuseppe Argirò, CEO of CVA.**

74 Solar Power Europe, European Market Outlook for Solar Power 2022-2026 (2022)
75 Terna, Italian electricity consumption in 2022 (2023)
77 The figure refers to net output.
76 Solar Power Europe, European Market Outlook for Solar Power 2022-2026 (2022)

Key facts and figures

157.5
MW
installed power

292
GWh
annual net production of wind energy

135,047
tonnes of CO_2[80]
avoided thanks to wind energy

8
CVA
wind farms

5
the regions
with CVA wind turbines

30
wind turbines
of CVAs in Apulia

WIND

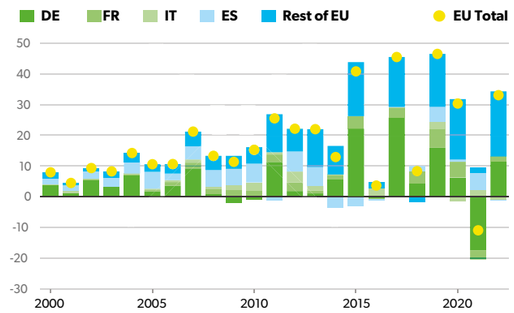
Wind energy could be the trump card for the energy transition, providing **almost 70% of global electricity by 2050** combined with photovoltaics. While 27.6 GW were added in the first half of 2021, 28.9 GW were installed globally in the same period in 2022 (+13%), reaching a global installed capacity of 874 GW in June 2022[78].

Wind power is currently the second largest source of clean electricity in the EU and is set to grow further.

Europe remains the global ***leader* in wind power,** with a total of Euro 41 billion invested in 2021 to finance the construction of 25 GW of new plants, an absolute annual record. However, the pace of installations remains far from that required by the EU's 2030 renewables targets: an average of 23-35 GW per year of new plants should be built between now and the end of the decade.
Wind energy produced in 2022 by the EU increased by 8.6% (+33 TWh). This contribution was enough to offset the 11 TWh drop in the previous year, but not to restore the rates of 2019, a record year for wind power (47 TWh of production)[79].

In 2022, wind power in Italy covered 6.4% of electricity demand (7.4% when considering domestic electricity production) and accounted for 20.7% of all renewable production. In 2022, wind power capacity in Italy will increase by 526 MW, distributed over approximately 208 new plants. The cumulative total of wind power in our country at the end of 2022 amounts, net of divestments, to 11.8 GW. New wind power capacity in 2022 is 30.2% higher than in 2021 (404 MW in 2021). More than 82% of this contribution came from plants with sizes above 10 MW. In terms of number of plants, however, the largest contribution was made by those between 200 kWh and 1 MW (89 plants in Italy). The *leadership of* wind energy regions remains constant, with Apulia leading with almost 3 GW (+238 MW over 2021), followed by Sicily with more than 2 GW (+113 MW over 2021)[81].

ANNUAL CHANGE IN WIND POWER GENERATION IN EUROPE (TWH)



SOURCE: EMBER, 2023 | CVA RE-PROCESSING

78 World Wind Energy Association, Half-year Report 2022: worldwide wind power boom continues in 2022 (2022)
79 Ember, European Electricity Review 2023 (2023)
80 *Consistent with current methodological guidelines (GHG protocol), the calculation of avoided CO2 was carried out with reference to the gross wind power production figure of 296 GWh.*
81 Terna, Unique Master Data Management of Installations and Production Units (Gaudi) (2023)

Despite the growth, the gap with the targets is clear. In fact, according to the PNIEC, around 19-20 GW of wind power should be operational by the end of the decade, with **an annual production of around 40 TWh.** The problem is the current authorisation process, which takes an average of five to six years to give the go-ahead for the construction of new plants, not to mention offshore wind farms, whose development is still at a virtual standstill.

CVA's wind farms

In 2022, CVA, through its subsidiaries, produced 292,000 MWh of electricity from wind [82]power, meeting the average energy needs of about 115,000 households. Wind power generation is developed through **8 farms** located in Aosta Valley (3 wind turbines), in Lazio (21 wind turbines), in Apulia (30 wind turbines), in Tuscany (4 wind turbines) and in Campania (11 wind turbines).

The size of each wind turbine in each of CVA's wind farms is commensurate with the potential of the area in which it is installed: from 52 metres for the diameter of the blades of the Saint-Denis plant in the Aosta Valley to 117 metres for the rotors of the Monteverde wind farm in the province of Avellino. The latter have a maximum capacity of 3.45 MW, a particularly high value for the average wind farm in our country.

82 The figure refers to net output.

The road to diversification

According to the rationalisation process undertaken by CVA, which sees the separation of the assets for the production of electricity from hydroelectric sources from those from solar and wind power; **in 2022, CVA S.p.A. transferred the business unit consisting of the photovoltaic and wind power assets to the subsidiary CVA Eos S.r.l.** The growth in solar and wind power generation responds to the *climate change* risk mitigation strategies pursued by the CVA Group, which includes greater technological diversification.

This **internalisation of asset management** involves the development of in-house expertise, which in turn will allow CVA operators to independently conduct quality inspections of wind and photovoltaic plants.

Power Purchase Agreement (PPA) for a green supply

The PPA is a **renewable electricity supply agreement**. This is a medium- and long-term energy purchase contract, which regulates the supply of energy between a producer who owns the plant and a purchasing party. It is an extremely useful mechanism for facilitating the energy transition: companies can reach their sustainability goals faster and save on electricity, avoiding price fluctuations, while plant builders, thanks to PPAs, will already know how long it will take to get a return on their investment and what their future revenues will be.

In addition to the **five-year PPA** signed with Cogne Acciai Speciali, in 2022 CVA Energie finalised a Euro 100 million financing deal with **UniCredit**, making it the first Italian financial institution engaged in a corporate PPA with a renewable energy producer.

These are **two credit lines of Euro 50 million each**: one long-term and another *revolving*, *sustainability-linked* credit facility, characterised by the company's sustainability performance requirements.

In this specific case, the operation envisages the achievement of specific objectives that will be realised through the increase of green energy generation capacity from wind and photovoltaic sources and the reduction of direct and indirect CO_2 emissions generated by the company.

3 new solar installations

In Piedmont, Lombardy and Sicily, operational from 2023

The collaboration will lead to the **construction of three new solar plants** in Piedmont, Lombardy and Sicily, operational from 2023 and with a total capacity of 25 MW. These will produce more than 35 GWh per year, meeting the energy needs of Unicredit's Data Processing Centres (DPCs) in Verona, covering around 20% of the bank's total electricity consumption in Italy and reducing its CO_2 emissions by more than 50%.

The agreement provides for the sale of energy at a defined price, optimising the risk profile of the investment in its assets.

Saint-Denis | Aosta Valley Wind Farm

Photovoltaic system of Alessandria Sud

INVESTMENTS FOR THE RESILIENCE OF THE GROUP'S INFRASTRUCTURE

In the light of the serious energy and climate crisis we are currently experiencing, efficient and well-maintained energy production plants are of even more strategic value. In 2022, the CVA Group invested Euro 36 million in the maintenance and renovation of its production and distribution facilities, demonstrating the importance of the safety and efficiency of its assets[83]. In fact, through regular checks and preventive maintenance, it is possible to identify any weak points in the systems in good time and keep safety and efficiency levels high along the Group's value chain.

INVESTMENTS IN MAINTENANCE AND RENOVATION OF PRODUCTION AND DISTRIBUTION PLANTS

Values in thousands of €	2022	2021	2020
CVA Group	36,483	32,628	29,472

ENERGY FROM WATER

The maintenance of hydroelectric power plants

Investing to ensure the maintenance and modernisation of its assets is a key priority for the Group in order to **ensure continuity of service and business**, as well as to prevent operating risks that can be financially costly for the company. With a view to reliability and innovation, CVA continued with maintenance operations on its plants in 2022 in order to make hydroelectric production more efficient. The main construction sites involved the power stations of Hône 1, Signayes, Aymavilles, Montjovet, Saint-Clair and Nus.

83 The value includes investments made in hydroelectric, wind and photovoltaic power plants (net of amounts allocated to the acquisition of new plants) and in distribution plants.

Key facts and figures

36.5
million €
the value of investments in the maintenance of CVA's facilities

6
detailed analyses
of cooling water in transformers

67
in-house software
installed for smarter and more resilient plants

100%
of inverters
replaced on their photovoltaic systems

second life batteries for storage

99
recharging columns
for electric vehicles on the territory of Aosta Valley

The maintenance activities, carried out by CVA's Electromechanical, Civil and Operations Divisions, make use of the significant skills and experience of its technical-operational personnel, who are able to intervene in a predictive as well as a timely manner.

The presence of these varied and widespread professionals in the company represents an important value for the Group's business, as well as an undoubted source of pride. In 2022, maintenance continued on the **Hône 1** hydropower plant, where a fault on the drive train of a Kaplan wheel blade was identified. In addition, faults had become apparent on the turbine shaft and polar cores during extraordinary maintenance work. This resulted in a postponement of the work schedule, which was scheduled to be completed in July 2021. Work was carried out on the complete replacement of the turbine shaft and generator shaft assembly and the rotor lantern, geometrically compliant with the existing one. This made it possible to improve the quality of the unit's shaft line, optimising the hydraulic and electrical behaviour of the system and consequently improving the efficiency with which water power is converted into electrical energy. This operation is part of the repowering philosophy of the Hône I hydroelectric plant.
Staff in the Operations Department took the opportunity, afforded by the works, to propose and implement a comprehensive monitoring system for the entire unit. This allows detection of all operating parameters and early warning of any drifts that may trigger predictive maintenance interventions. The spontaneous emergence of such an initiative on the part of the plant's management staff demonstrates the effectiveness of the widespread professionalisation actions put in place by the company. The production unit (both electric generator and hydraulic turbine) is now equipped with sensors conforming to Industry 4.0 standards. Even the power transformer is a little jewel tailor-made for the system according to customised specifications to ensure complete monitoring and easy maintenance over the years.

For several years now, CVA's Electromechanical Engineering Division (DIE) has been involved in the **renovation of the hydroelectric production machinery at the Signayes power station**. Specifically, these affected synchronous generators and all automation equipment, as well as machine rotary valves and unit injectors. In February 2022, the replacement of the Gr.1 turbine and rotor shaft was completed, which was carried out together with the installation of new impellers with a high-performance hydraulic profile. Following these operations, Gr.1 and Gr.2 of the Signayes power station can now be considered completely renovated. In the autumn of 2022, the Gr.3 generator was dismantled, allowing the replacement of components that were no longer suitable. In line with the pre-set objectives, work was also completed on modernising the power plant's electrical system, including light and motive power.

End of revamping works at Hône 1 power station

In **May 2022, the overhaul of the Aymavilles turbine-alternator was completed, with the complete *revamping of*** the **plant's two units** starting in 2020. On both units, this initiative restored the correct functionality of the system and its component parts. In addition, problems with the alignment, centering and run-out of the rotating parts in relation to the static components were found during the reviews of the generating sets. This findings required the complete realignment of the machines. As far as the generator is concerned, an extraordinary overhaul restored and increased the quality and reliability levels of the machine.

An overhaul of the Gr.1 turbine-alternator in Montjovet was completed in July 2022. In **particular, the complete disassembly of the generator was carried out** to allow the replacement of active parts on the stator and rotor. As for the turbine, on the other hand, a functional overhaul of all the mechanical slides of the distributor was performed, a replacement of the impeller, restoration of the hydraulic channels, and modification of the sealing system of the thrust pad balancing circuit by inserting a static seal between the pads and pistons.
A new impeller with innovative hydraulic profiles was installed on Gr.1: the impeller's palar channels were designed with a "0-100" design[84]. The aim of this installation is to minimise critical behaviour at low loads without penalising hydraulic performance at high loads. This is an innovative design, whose results will be carefully monitored over time in order to validate the technical choice or not.

0-100

the new type of design used for the palar channels of the impeller

An overhaul of the Gr.1 turbine at Saint-Clair began in November 2022 and will continue until April 2023. The work will provide a regenerated Francis impeller installed on the unit, as well as hydraulic channels protected with stainless steel liners, replacing the current liners. In addition, the machine shaft on the turbine will be prudently replaced with a newly supplied component, as a preventive measure, considering that the lower part of the shaft is in contact with water, and therefore subject to corrosion, throughout its life. Finally, the lower turbine cover will be replaced at the overhaul with a newly supplied component with modified geometry. The new cover will allow easier disassembly of some of the lower supports, gaining efficiency in terms of time and manpower.

In 2023, the plan to **replace the impellers of CVA's hydropower fleet** is scheduled to be substantially completed, for which 21 newly supplied Pelton and Francis wheels have been installed on our plants since 2020, with a significant reduction in the average age of the impeller fleet. There are also significant advantages in terms of turbine efficiency and, consequently, expected output.

The conservative restoration of a section of the Nus plant's tunnel diversion channel became necessary due to the damage and deformations caused by the landslide phenomenon. In addition to the work necessary for the restoration of the tunnel section, the expansion joint on the bridge-tube was restored, as slope movements from the year of construction to the present day have caused its closure. At the same time as the work, the La Tour reservoir was also being excavated.

84 That is, such as to allow fluid-dynamic and rotodynamic behaviour, optimised over the entire flow range of the turbine, i.e. from zero flow (condition "0") to nominal flow (condition "100")

Technologies 4.0 for Covalou 1: predictive maintenance pilot project

The project conducted on unit 1 of the Covalou plant has led to the commissioning, during 2022, of a plant supervisor that, thanks to the magnitudes measured in real time by **motion, temperature, pressure, flow and level sensors** installed on the different parts of the unit, allows advanced monitoring of the machine's operation. This amount of data is constantly analysed by the software and, in the event of anomalous values, a warning can be generated in order to trigger the necessary corrective actions by the operating personnel as soon as possible.

This type of approach can be expected to lead to a significant reduction in failures as they can be prevented in many cases well in advance. These aspects are, all the more important on older systems and therefore subject to potential and more frequent malfunctions. It is planned to apply the same system in the coming years to other hydroelectric groups.

Asset control and preventive diagnostics

During 2022, as every year, the Electromechanical Engineering Division carried out periodic checks on the functionality of the electrical protection mechanisms of the generators, operations that are indispensable for the safe operation of the machinery.

During the year, more than **90 checks** were performed on group protection mechanisms, line devices transformers, **and Breaker Failure** devices.

In addition to this, more **than 40 thermographic analyses were carried out on the main electrical components of hydroelectric plants and more than 43 inspections of high voltage capacitive voltage reducers were carried out**.
Also in 2022, the **preventive diagnostics campaign on electrical machines** and synchronous generators continued.

A total of 10 specialised internal machine inspections were performed, 14 electrical diagnostic measurements, 1 off-line partial discharge survey and 3 measurements were performed on-line. In addition, the campaign to equip machines with on-line instrumentation continued: 2 generators have been equipped with fixed sensors aimed at measuring and controlling the magnetic flux and 1 generator with specific instrumentation to detect partial discharges.

+90 checks

on group and line protection, transformers and MAIG equipment

CVA universal spare transformers

For some years now, CVA has equipped part of its hydroelectric plants with universal resin spare transformers (TEUS), replacing the excitation transformers (TE) and auxiliary services transformers (TSA). The benefits of this technology include the reduction of plant downtime in the event of transformer failure, and delays in the supply of excitation systems, as well as **providing *black start capability***[85].

A specialised measurement campaign was also carried out to survey the flow rate of the heat exchangers of water-cooled transformers (Oil forced - Water forced, OFWF). Ten transformers were involved, with a total of 20 exchangers. The water flow rate, in fact, is a particularly important process parameter for the long-term integrity of these devices.
In addition, 6 triads of MV over-voltage surge arresters were installed, 4 of which were used to protect as many electrical production machines and equipped with discharge counters to monitor the phenomenon.
The survey of the condition and reliability of the oil production transformers is, first and foremost, ensured by the multi-year plan of periodic analysis of the insulating oil: 45 laboratory analyses were carried out in 2022 and the results were stable compared to the previous year. In addition to helping to prevent breakdowns and strategically orientate maintenance activities, the data collected is fed into a forecasting model developed in-house.

For the first time, **six detailed cooling water analyses** were carried out on water-cooled transformers, which are characterised by greater criticality regardless of the degradation status deducible from the oil analysis.

Achievements in safeguarding power transformers with insulating oil

During 2022, the new ATMoS Basic Control 1 Mobile instrument was installed on the MT TR1 transformer in Verres, which also had a significant moisture content, an unfavourable element for its reliability and durability. ATMoS is not, however, the only smart device at the service of the CVA Group's oil transformers: thanks to the combination with Dissolved Gas Analysis (DGA) analysers, which can also be remotely controlled and operate 24 hours a day, it is possible to intercept many types of transformer failures and extend their useful life thanks to the **optimisation of operating conditions.**

This approach is made possible through centralised analysis, operated by Electromechanical Engineering, of big data from the instruments.
To this end, also in 2022, the campaign to install Hydrocal-type analysers on the Covalou, Maën and Aymavilles production transformers continued in 2022, as set out in the 2019-2023 four-year plan.

85 Black start is the ability to restore the supply of electricity after a total interruption of the power distribution system, without the aid of other external power sources

The automation of intake works

As part of the modernisation of the facilities, the **use of advanced sensors and automation systems** contributes to the prevention of damage, ensuring the safety of the facilities and neighbouring communities, as well as the protection of the surrounding environment. In addition, timely and accurate data collection enables informed decisions on the maintenance and management of dams, improving their efficiency in water resource management and clean energy production.

The **renovation of the automatic systems of the main intake works** is proceeding at a fast pace and according to the established schedule. The final commissioning of the **La Salle** intake at the Champagne plant was completed in 2022. As has already been successfully achieved on the other works at Pont-Saint-Martin - Quincinetto 2 plant, Sarre - Quart plant, Saint-Clair - Montjovet plant and Nus - Saint-Clair plant, during the renovation works **the continuous control of the release of the Minimum Vital Flow** was automated, guaranteeing maximum attention to the environment and regional prescriptions.

During 2022, the Guillemore intake and related releases, which are part of the Pont-Saint-Martin facility, were also automated when the sluice **gates, bridges and operating parts of the weir were renewed**.

Quincinetto 2: automation in response to the consequences of climate change

The increasing scarcity of water in water bodies, a consequence of climate change, is increasingly problematic for the winter operation of run-of-river hydroelectric power plants along the Dora Baltea. For technical reasons, these units cannot operate with excessively low flow rates (typically less than 30% of the nominal flow rate) and must therefore be stopped frequently in winter, when these conditions occur the most. On the Quincinetto plant, a **solution is being perfected that would bring an important benefit both in terms of safeguarding the machinery and recovering clean energy production**, thanks to the exploitation of the reservoir capacity of the artificial dam on the Dora Baltea.

The project involves the **installation of a hardware and software system** to automate the movement of the canal inlet gates, so that they can be automatically closed if there is not enough water to keep the system generating. The water is stored in the reservoir of the dam, instead of being allowed to flow downstream of the dam. Once the reservoir is filled, the automatism calls the unit back into generation at a power higher than the technical minimum. This solution makes it possible to recover production and, at the same time, significantly reduce the frequency of shut-downs and subsequent restarts.

Place Moulin Dam | Aosta Valley

The safety of water storage and transport infrastructure

Since all the dams owned by CVA were built between 1920 and 1960, maintenance and investments are necessary to modernise, safeguard and innovate the facilities. The reliability and resilience of the plants allow productivity benefits to be achieved while reducing their environmental impact through more efficient production using less water.

Since 2016, CVA has been engaged in a technical reconnaissance of its suite of pipelines, carrying out **ultrasonic thickness checks** on metal pipes and nailed joints along with visual inspections on their state of preservation. During the course of 2022, the first repeat inspections were carried out according to the state of preservation of individual components. At the same time, work was carried out to determine, partly through external assignments and partly by using CVA's internal staff, the minimum thicknesses of piping calculations. The information obtained will allow an **overall assessment** of the state of the works.

In addition, a **new field inspection methodology using *phased array*** ultrasound was implemented on the Champagne I pipelines. This methodology allows the internal state of the material to be analysed by **observing a "section" of the thickness of the pipe under investigation**. Once fully operational, it will provide a wealth of pipeline information that will enable the inspection and maintenance plan to be increasingly predictive.

Phased array

the new methodology of ultrasonic inspection

Rockfall barriers in the Cignana dam

In 2022, **work on the installation of rockfall protection works on the left bank of the Cignana dam** in the municipality of Valtournenche was completed. The protection work involved the installation of protection systems consisting of high energy-absorbing rockfall barriers, capable of **intercepting and blocking the fall of rocks from the rock face**. Two rows of rockfall barriers were installed 10m apart, with a useful height of 7m and a linear development of 40m each. This is a particularly important protection system for which the highest-strength barriers on the market today were used.

Refurbishment of the Gabiet bottom outlet

In 2022, a major work was done on the bottom outlet of the Gabiet Lake dam. The bottom outlet is a key element in the safe operation of a large dam. In order to **restore the full efficiency of the work**, the servicing included the replacement of a section of the deteriorated metal piping located between the two valves in the underground chamber. In addition, a pipe guard was installed to protect it from possible detachment from the rock tunnel. At the same time, the functionality of the water drainage system was restored.

Earthquake-proof guardhouses

In continuity with previous Orders, Legislative Decree 79/2004 imposed an obligation to carry out **seismic verification of all large dams**. Repeated extensions, however, have postponed the deadline for carrying out the checks. After an initial request for seismic inspections of all dams, the requirement was suspended in 2015 and then reduced to a list of priority cases. For dams not included in the list, the requirement to check ancillary works (guardhouse, discharge units, sluice gates, etc.) remained active.

Following the launch in 2017 of seismic vulnerability verification activities for the guardhouses serving some of the Group's dams, in 2021 the design and authorisation process for the adaptation works for the Cignana guardhouse was concluded, and in 2022 the first part of the works was completed. These will be completed in 2023 and adaptation work will also be carried out on the remaining guardhouses in the coming years.

Remote Control never sleeps

The CVA Group has an operations room dedicated to the remote control of hydroelectric, wind and photovoltaic assets, coordinated by the Operations Division and known as the **Aosta Remote Control Station**. Real-time supervision is thus made possible, facilitating timely intervention if required.

The service is active 365 days a year, 7 days a week, 24 hours a day, and is also a very important point of contact for both public safety and heritage protection agencies (police, fire brigade, forestry corps) and private citizens, for any reports of anomalies on our hydroelectric assets.

In-house software for more smart and resilient plants

Also in 2022, the process started in 2010 for the creation of a unified process of management of electromechanical plants continued. This process led to the installation of new automated systems designed in-house. The following table summarises the systems installed to date.

Automatic systems	What function they have	Where they are installed
RDF12©	• It regulates the speed of the plant in terms of turbine speed, synchronising the power requirement from the electrical network and the power generated • It avoids blackouts on the power lines that supply the tourist town of Gressoney in the Aosta Valley, where there are many ski lifts, at peak times	Out of CVA's 24 hydroelectric groups, covering more than 65% of the entire installed capacity
RDT14©	• It adjusts the system voltage • It synchronises the voltage produced by the generator according to the overall voltage of the network	Out of CVA's 18 hydroelectric groups covering more than 56% of the entire installed capacity
AUT16©	• Together with the two previous systems, it allows the management of the entire generation unit in an automated way • It reduces disruptions through an intuitive user interface for auditing and monitoring production groups	On 9 plants
AUTOP	• It manages the river weirs by adjusting the maximum level of the reservoir and it generates the opening and closing commands of the individual gates • It continuously monitors the Minimum Vital Flow and allows for real-time adjustment	On 6 plants
AUTDS	• A more compact version of the AUTOP particularly suitable for small intakes (of size or with few gates to be controlled) or in applications on releases for third parties	On 5 plants
RDL18	• It regulates the water level of the system's loading tank, determining the hydraulic head available and maximising efficiency • It continuously monitors the redundant acquisition of the tank level and generates anomaly alerts for this purpose • It enables integration within RDF12© • It allows the totally autonomous operation of the system depending on the water available	On 2 hydropower units
AUTCI	• It manages common plant services such as power sources, auxiliary services • It integrates inside automatic tank level adjustment	On 1 hydroelectric plant
AUTLN	• It manages the controls and signals of the Electric Station attached to the hydroelectric plant	On 1 hydroelectric plant
AUTSI	• It implements the local supervisor of the hydropower plant. Through the same it is possible to give commands to the system and keep it accurately monitored	On 1 hydroelectric plant

Civil Protection plans for the safety of downstream areas

The presence of a dam in the area involves managing a potential risk from flooding that could occur in the areas downstream of the dam. The management of these risks is addressed in the **Civil Protection Documents** that are prepared for each dam[86] and which establish the conditions for the activation of communications and procedures to be implemented in the various phases of the alert.

The recent update of the Civil Protection Documents of large and small dams has made it possible for CVA, the Regional Functional Centre and the Hydraulic Authority to **exchange data and information**, **which will allow a more realistic mapping of the risk, but above all a rapid activation of alerts**. CVA provides the flow rates and levels of its systems to the Functional Centre and receives information on weather and hydrogeological conditions from the latter on a daily basis. Data are shared through a common platform.

The updating phase of the Beauregard Civil Protection Document was accompanied **by the drafting of a rolling plan to mitigate the effects of flooding events in Valgrisenche**. The technical round-table group formed by the Regional Civil Protection, the Regional Dams Office, the Regional Functional Centre and CVA drew up a "dynamic" rolling plan with a procedure involving a preventive lowering of the reservoir level in order to increase, as far as possible, the available volumes and reduce the effects downstream of the dam. The plan is applied thanks to the information shared by CVA and the Functional Centre, which, on the basis of a specially designed forecasting model, makes it possible to hypothesise the weather conditions, the flow rates into the reservoir and the consequent development of the reservoir.

60%
the share of failures attributable to inverter malfunctions

Satellite monitoring of CVA works

Satellite monitoring has also been used for some years in the control of works and it has reached an extremely high level of accuracy and reliability, making it a tool of particular interest for the analysis of geological and structural aspects.

CVA has undertaken a project aimed at applying satellite techniques on some plants to use and test the most advanced technologies for geological and structural monitoring.

86 The Civil Protection Documents are prepared by the General Directorate for Dams and Water and Electric Infrastructures of the Ministry of Infrastructure and Transport together with the Concessionaire, the Civil Protection of the regions concerned (through the Functional Centres) and the competent Hydraulic Authority of the Region

The satellite interferometric analysis is conducted by NHAZCA S.r.l., a spin-off company of Sapienza University of Rome. In order to increase the control of sites where hydroelectric plants are located, the Aosta Valley Autonomous Region approved an **agreement with CVA for the exchange of spatial data** and the sharing of best practices in the field of slope stability[87]. CVA receives a satellite monitoring bulletin from the Region, related to any deformation anomalies of the ground, potential precursors of landslide, processed by the Geological Activities structure of the Region.

The technique used, known by the term **SAR interferometry**, makes it possible to monitor the movement of the earth's surface and controls the behaviour of unstable slopes, on which the installations of the Group's plants are built, and the movements that affect the structures themselves. The possibility of obtaining images and data that satellites have detected throughout their life is also extremely useful, therefore with the ability, at any time, to obtain a historical evaluation. However, the technology is affected by the morphology of the terrain: it is therefore necessary to evaluate the applicability and effectiveness of the method in the mountainous area where the CVA plants are located.

As part of the agreement with the Region, areal-time **reporting *system of the* location and magnitude of seismic events in the territory** has been implemented for the possible activation of civil protection procedures.

ENERGY FROM THE SUN

Revamping inverters for a longer life of photovoltaic panels

A link between the power generation phase and its feeding into the grid for transmission and consumption by end users, **the inverter plays a central role in the operation of photovoltaic systems**. This electronic device is in fact capable of converting direct current, produced by converting solar energy into electricity, into alternating current, suitable for distribution networks. It has also been shown that inverter malfunctions are responsible for around 60 % of photovoltaic system failures and the resulting loss of energy production. It is therefore strategically important to ensure that the inverters installed have and maintain an adequate yield with respect to technical and economic expectations.


Mont Blanc | Aosta Valley

87 The agreement was approved by Resolution No. 672 of 13 June 2022

With this in mind, in 2022 CVA **completely overhauled 100% of the inverters on its photovoltaic plants (21 in Alessandria and 10 in Valenza)**, thus restoring their useful life, which was nearing its end. The operation was carried out thanks to the support of a company specialising in Operations and Maintenance (O&M), which managed to carry out the overhaul without ever having to stop production, working in the dawn or evening hours when the plants were not in operation and temporarily installing CVA's spare components.

Furthermore, the operation produced no waste as the electronic boards were repaired and stored as back-ups, available when needed. In addition to the significant increase in service life by an additional 10 years, this activity has resulted in an increase in performance and a significant reduction in false alarms related to the operation of the inverters themselves.

ENERGY FROM WIND

Reblading: initiatives to improve performance and extend service life

For more than a year, the CVA Group has been actively working on a maintenance plan to **replace the blades of eight of the 21 wind turbines in Piansano**, the Group's largest wind farm in terms of total installed capacity and number of wind turbines. Technically, the reblading project consists of replacing the rotor of the wind turbines whose current diameter is 90m with a new rotor with a larger diameter of 100m. The work will allow, on the one hand, an increase of their useful life, which will be certified up to 30 years, and, on the other hand, make it possible to achieve better performance that will lead to a higher production of between 16% and 20% per year for each wind turbine, having more aerodynamically performing blades. The reblading, which will start in 2023, will involve the machines for which the benefit of intervention is greatest, considering their exposure to wind and logistics.

The Piansano plant has also been among the most affected by lightning strikes in recent years. For this reason, also **in 2023, CVA will continue** to install "copper ***cap*****",** a special protection system for generators that consists of a copper coating placed on the tip of the wind turbine blades to ensure greater protection against lightning. The new wind turbines in Piansano, which are being rebladed, will all be equipped with this technology.

Safe high altitude inspections: the contribution of drones

In order to enable the efficient operation of all wind turbines, all of the Group's wind turbines, electromechanical components, their access routes - such as stairs and lifts, and surrounding civil works (roads) - are subject to continuous maintenance. In continuity with previous years, **ordinary and extraordinary works and preventive activities continued in 2022**, partly carried out by an Operation & Maintenance partner, partly monitored by Group technicians.

The technological potential of drones makes them particularly attractive for carrying out inspections in hard-to-reach areas, such as wind turbines, for two main reasons: the ability to operate safely from the ground and the high quality of the images they are able to provide with their surveys. Once object of analysis has been reached, the drone takes high-resolution images and examines the data of each blade, transferring them in real time to the technician operating the device from the ground. By means of photogrammetry, the metric data of the object are then extrapolated, allowing 3D and georeferenced models to be reconstructed.

For the first time, in 2022**,** drone plant ***screening*** **took place on 100% of CVA's wind farms**. Based on the analysis of the images detected it was possible to identify, with a view to predictive maintenance, the risk situations that could have led to a failure, and therefore to a loss of production, and to define a consequent repair campaign. In addition, predictive maintenance activities were carried out on the main components, namely, 40 borescopes on the gearboxes, 39 electrical measurements on the generators and 32 quality inspections on the WTGs and the Group's nacelles.

Pilot project for the use of drones in LPS assessment

The use of drones is also being trialled in the monitoring of the integrity status of the Lighting Protection System (LPS), i.e. the wax event protection system. Wind turbines are often located in isolated agricultural areas exposed to harsh weather conditions and are the main 'targets' of lightning strikes. LPS and "copper caps" provide defence **against peak currents and lightning damage**. The LPS consists of all the receptors (copper caps included) placed on the blades and the copper conductors connected to them up to the base of the tower, thus acting as a true lightning rod.

For this reason, it is essential to monitor the continuity of the connection in order to avoid direct discharges on the system that could render it inoperative. In 2022, CVA signed a **partnership with a start-up company in Zurich with the aim of building a system to measure the continuity of the LPS system from the tips of the blades to the ground**, which is traditionally carried out using an aerial platform and is very costly. The project, which is still in the pilot phase, involves the use of a high-altitude drone, which injects current into the blade tips and verifies the integrity of the system.

SERVICE CONTINUITY

Water, sun and wind contribute to continuity of supply

In 2020, Terna drew up a **Plan for the Re-powering and Re-ignition of the National Electricity System**, which, among the captive operators, also includes the Group's power plants in Valpelline, Avise, Perrères, Maën, Covalou, Pont-Saint-Martin, Gressoney, Sendren and Zuino. This implies that, in the event of a national grid blackout, these power plants must support the restoration of the electricity system. In view of the ability of the **Perrères and Gressoney** power stations to feed isolated portions of the grid, they are also classified as **essential facilities for the security of the national system**.

Indicator	2022	2021	2020
Total net production of hydroelectric plants (GWh)	2,063	2,490	3,045
Producibility = Net annual production / historical producibility [%]	68.41%	82.6%	102.0%
Load factor = Net annual production / (total hours per year * installed capacity) [%]	25.22%	30.4%	37.2%
Availability index [%]	90.92%	91.96%	92.27%
Unavailability index - unscheduled [%]	6.43%	4.66%	4.32%
Unavailability index - scheduled [%]	2.65%	3.38%	3.41%

The table shows the availability values recorded on CVA Group's wind and photovoltaic plants over the past year.

	Contractual availability		
Plant	2022	2021	2020
Monteverde (AV, wind power)	99.10%	99.08%	99.16%
Tarifa (LE, wind power)	98.10%	98.10%	98.16%
Piansano (VT, wind power)	99.20%	99.40%	99.47%
Lamacarvotta (TA, wind power)	98.70%	98.75%	98.60%
Lamia di Clemente (TA, wind power)	98.80%	99.52%	98.34%
Ponte Albanito (FG, wind power)	95.96%	97.60%	96.40%
Pontedera (PI, wind power)	98.30%	98.61%	98.28%
Saint-Denis (AO, wind power)	99.15%	99.78%	99.63%
Alessandria (AL, photovoltaic)	78.83%	99.70%	99.80%
Valenza Fornace (AL, photovoltaic)	83.91%	99.85%	100%

The quality of the electrical distribution service

The Regulatory Authority for Energy, Networks and the Environment (ARERA) defines the rules for service continuity, voltage quality and commercial quality through a resolution that constitutes the integrated reference text.

This document (TIQE, Testo integrato della regolazione output-based dei servizi di distribuzione e misura dell'energia elettrica - Integrated text of the output-based regulation of electricity distribution and metering services) stipulates that distribution companies must guarantee the continuity of the electricity distribution service, minimising interruptions and restoring the service as quickly as possible in the event of unforeseen interruptions.

In particular, distribution companies must comply with certain **quality of service** levels, defined through parameters such as the **duration and number of interruptions for low-voltage customers, calculated as annual averages**.

There are also constraints and compensation concerning the **maximum time for restoring service following a disconnection**. The measure also includes an obligation for companies to inform consumers in good time in the event of planned interruptions. The current version of the document refers to the 2016-2023 regulatory period.

The figures for this indicator, highlighted in the table below, show an improvement in service continuity in 2022.

Service continuity	2022	2021	2020
Average minutes lost per LV user	17.87	21.39	20.03
Average number of interruptions per LV user	1.25	1.30	1.04

Resilience plan for an energy transition-proof distribution network

The electricity distribution infrastructure is a decisive factor in the energy transition because it must be able to govern a radically different generation system from the past and distributed energy flows from a multiplicity of plants. **A more resilient, flexible and digital electricity distribution network will be required**, ensuring both optimised management of the increasingly distributed production of renewable energy and enabling the transition of energy consumption to the electric carrier.

For this reason, the CVA Group, through its subsidiary Deval, the electricity distributor in Aosta Valley, has planned a **multi-year business plan, aimed at increasing electricity transport capacity** and meeting growing energy demand/production. The Deval Resilience Plan is based on action lines coordinated with European, national and regional plans, defining a roadmap for energy transition with the following aims:

- increasing the electricity transport capacity to cope with the growing demand/production of electricity driven by electric mobility, riser refurbishment, distributed generation;
- automation and digitisation of the grid (smart grids);
- improving the resilience of networks;
- reduction of environmental impacts through line burial and energy efficiency measures;
- plant overhaul;
- reducing operating costs:
- continuation with the plan to install Petersen coils in primary cabins.

Capacity market in support of decarbonisation

The *Capacity Market (CM)* is a regulatory mechanism that aims to support the energy transition by promoting the replacement of coal-fired generation capacity with renewables by 2025. Approved in 2019 by the European Commission, the CM aims to make the energy market more efficient, ensuring the security of the system in case of peak demand, so as to avoid blackouts.

The mechanism provides for remuneration by Terna - the national electricity grid operator - for plants that undertake to ensure availability for energy production.

In 2022, CVA Energie was awarded 313 MW of Existing Capacity and 150 MW of Foreign Capacity for the **2024** delivery year, reaching a total of 463 MW of Available Capacity in Probability ("CDP"). **In particular, CVA Energie has been allocated 111 MW of Existing Flexible Capacity,**, 202 MW of Existing Capacity from Non-Programmable Renewable Sources and 150 MW of Foreign Capacity, with a total Available Capacity in Probability of 463 MW.

CVA's contribution to balancing the European grid

CVA operates 4 hydropower plants qualified to provide dispatching services. With the Valpelline, Gressoney, Perrères and Maën-Cignana power plants, it participates in the national dispatching market, contributing to the balancing of the Italian and European grids by participating, among other things, in the European balancing platform for the exchange of energy between European Transmission System Operators (TSOs) on the Market Replacement Reserve (MRR) market.

The resilience of the electrical distribution network

In the field of energy distribution, the **resilience of the system is represented by its ability to respond positively to climatic or non-climatic events** that disrupt the normal functioning of supplies.

It is the responsibility of Distributors, in order to maintain a high level of service, to identify the risks to which their distribution lines are exposed, to measure the relative exposure profile of their infrastructure and to define an ad hoc mitigation plan. The **distribution network in Aosta Valley, due to the morphology and altitude of the territories in which it is structured, is subject to risks such as falling trees or the formation of ice sleeves** in the winter season, which can cause the conductor to "tear off" and fall to the ground. Another recurring problem is that of **accessibility to sites in the event of the need to restore the distribution network**, which often requires the dispatch of specialised technicians, materials and means of transport to places normally precluded due to their high level of danger.

In compliance with ARERA's requirements regarding falling trees and sleeve formation, in **2022 CVA's distribution company, Deval, updated its Resilience Plan[88] and recalculated the risk indices in cooperation with the Politecnico di Milano (Milan Polytechnic University)**.

The project allows for a complete mapping of the risks to which the electricity grid is exposed, enabling each cabin to be assigned a specific risk index.

88 For more information see: https://www.devalspa.it/piano-di-sviluppo-della-rete-e-resilienza/2022-piano-resilienza-deval-sintesi.pdf

Protect lines during snowfall

Especially in mountain regions, heavy snowfall and extreme weather conditions can cause damage to power lines. In fact, the **weight of the snow and the potential fall of trees** can subject the lines to severe stress, even to the point of causing local blackouts.

In the light of this risk, Deval and the Group's Open Innovation are collaborating on projects to install certain **anchoring devices** that allow the length of the span, i.e. the distance between the supports of the electric cables, to be **adjusted**. Altogether, the twenty or so devices installed between the municipalities of Champorcher and La Thuile will allow the ability to absorb the accumulated voltage in a controlled manner to be tested in order to validate and subsequently extend the solution.

Petersen Coils

Petersen coils are an electrical component that can mitigate unwanted earth currents, protecting people and equipment from electrical discharges. In particular, when an earth fault occurs on a power line, leakage currents can arise, which can cause hazards to people and animals. These devices compensate the earth current by reducing its value and consequently the risks mentioned, facilitating the spontaneous extinguishing of the cause of the fault. Should the current to earth persist, the protection system intervenes by disconnecting the line.

In 2022, Deval continued with its plan to install Petersen coils on its plants, which includes placing 26 coils spread over 12 plants between 2020 and 2023, in order to increase the resilience of the network and reduce stresses on its plants.

The burying of area distribution lines

Compared to overhead distribution lines, underground cables have the benefit of not being exposed to natural phenomena, rarely suffering interruptions and breakdowns. This allows for greater continuity of service even in extreme weather and climate conditions. The burying of power lines also reduces the visual impact on the landscape, which would otherwise be negatively impacted by the physical presence of overhead lines.

The reinforcement of the power line to Valsavarenche was completed in 2022. The project involves burying the networks in the area, which is particularly prone to avalanches that have caused communities to be isolated for days in recent years. The reinforcement of the line consisted of the construction of a secondary route through which electricity could be supplied to users in the event of a fault on the main line.

The plan for the transition to smart meters for more conscious energy consumption

Starting in 2022, ARERA has ordered that first-generation meters be gradually replaced by Distributors **with the new** 2G***smart meters***. The need is to replace at least 90% of the total number of meters now installed by 2025, and 95% in 2026, benefiting about 37 million users throughout Italy.
The modernisation of low-voltage electricity meters is an essential initiative to meet the needs of an ever-changing energy sector.
The replacement plan will, in fact, make customers more proactive and aware of their consumption, thanks to the new features and benefits offered, both for end customers and energy suppliers. The new meters will allow electricity withdrawals to be monitored on a quarter-hourly basis, data to be sent to external devices via a dedicated communication channel, and power consumption to be displayed in real time.

In this context, Deval prepared its own **Replacement Plan**, which started in the last quarter of 2022 in accordance with the functional specifications defined by ARERA. The replacement of meters in the municipality of Saint-Oyen was initiated and completed in 2022. In the first half of 2023, the plan is also to cover the municipalities of Emarese and Saint-Rhémy-en-Bosses, while in the second half, the plan will continue with the municipalities of Aosta and Courmayeur. The Plan has been devised by Deval in minute detail to ensure user support at all times and will be developed over **15 years,** with a large-scale phase between 2022 and 2026. The investment of **Euro 17.6 million** includes the replacement of **more than 130,000 meters**.

The transition to the new generation of meters was planned by the authority to also take into account the principles of **the circular economy**: the newly installed smart meters are made of totally recycled material, recovered from the disposal of the first generation meters.

In order to handle the large amount of data generated by the use of the new second-generation meters, Deval started a **process of renewing the** company's information systems; the measurement will be acquired with quarter-hourly detail on a daily basis and made available within 24/48 hours. Processes such as billing, labour and personnel management, technical and commercial quality, are therefore undergoing a **thorough restructuring**; in addition, the **remote management** system has also been completely overhauled, in order to enable the management of 2G meters.

Joint emergency management

In order to ensure the supply of electricity even in the event of emergencies or critical situations that may threaten the continuity of the service, the CVA Group has forged close collaborative ties with civil authorities in the area in order to be able to promptly take joint actions should the need arise. In particular, taking into account the mountainous and often difficult-to-access environment in which most of the Group's assets are located, the **Regional Civil Protection is the main go-to point for emergency management with which Deval has signed a Memorandum of Understanding**.

This includes both emergency cooperation procedures and the development of joint training and exercises. Sharing resources, skills and means makes it possible to reduce the risks to which the population and the technicians carrying out the works are exposed, to reduce restoration times and, consequently, the inconvenience caused by service interruptions.

Deval, in line with ARERA's obligations, has also adopted an Electricity Grid Emergency Plan that defines the procedures and actions to be taken to minimise the effects of interruptions or problems with the supply of electricity to the population, industry and businesses in the area.

The Plan is structured around four levels of severity: alert, alarm, emergency and crisis, based on which there are different actions and guidelines on the operations to be carried out. Needs dictate the operational methods of intervention, defining the need for the appointment of an Emergency Management Officer and the activation of a dedicated and specifically tasked emergency manager.

The revamping of the ***remote control system was also completed in 2022***, which involved the modernisation of the platform with a more up-to-date version and the purchase of new technological equipment that will be able to facilitate the work of the operators, such as the installation of the new 2G meters planned to start in 2022. The new system will undergo final operational tests before being put into service in 2023.

GROUP CARBON FOOTPRINT

The Group's focus on and commitment to environmental sustainability begins with the management of its activities. **CVA monitors its consumption and seeks to make it more efficient, with the aim of reducing climate-changing emissions and overall environmental impacts** directly under its control. Energy consumption is measured and analysed annually, including:

- the electricity used in the Group's offices
- the electrical energy required for the operation of auxiliary services[89] to the operation of plants
- the contribution of energy used for district heating of some offices in Aosta
- fuel consumption for heating offices and industrial buildings, for generator sets and for the company fleet.

88% of the Group's energy consumption in 2022 will come from renewable sources.

Total energy consumption	2022		2021	
Unit of measurement	**MWh**	**GJ**	**MWh**	**GJ**
From non-renewable source[42]	4,803	17,294	4,857	17,484
From renewable sources	36,968	133,086	41,316	148,739
Total consumption	41,772	150,379	46,173	166,223

In 2022, considering Scope 1 and 2[91] emissions, **the Group emitted 1,387 tonnes of CO_2 equivalent** according to the Market-Based method[92], a figure that rises to 4,619 tonnes using the Location-Based method[93]. **Through the production of energy from renewable sources, it was able to avoid the emission of 1,094,612 thousand tons of CO_2 using the Market-Based method (a figure that drops to 775,203 thousand tonnes using the Location-Based method).**

Unit of measurement: tonnes CO_2eq	2022		2021	
Unit of measurement	**Scope 1 + Scope 2 (Market Based)**	**Scope 1 + Scope 2 (Location Based)**	**Scope 1 + Scope 2 (Market Based)**	**Scope 1 + Scope 2 (Location Based)**
CO_2 avoided	1,094,612	755,203	1,306,169	897,231
CO_2 generated	1,387	4,619	1,594	4,506

The Group considers it essential to **maintain the quality of its processes, environmental protection, worker health and safety** and effective management of its assets, particularly its hydroelectric power plants, wind and photovoltaic fields. In this regard, since 2006 CVA has initiated the certification processes of its management systems according to the ISO 9001, ISO 14001 and ISO 45001 (formerly BS OHSAS 18001) standards, which since 2013 have been harmonised within two Integrated Management Systems (IMS). The former was developed by CVA and also applied by Valdigne and CVA Energie, while the latter applies to the organisational scope of Deval. In this context, the Integrated Policy document defines the direction given by top management to the implementation of technological practices that also take into account the cycle of products and services offered, improving corporate sustainability.

89 Energy for ancillary services includes both the portion withdrawn from the grid (fully certified from renewable sources) and the portion resulting from the difference between gross energy produced by generating units and energy fed into the grid.

90 Energy withdrawn by Deval from the national grid and district heating were included in the calculation of energy from non-renewable sources.

91 The CO_2 emissions (direct and indirect) associated with CVA's consumption can be divided into two categories: direct emissions (Scope 1), due to direct fuel consumption by the company (heating fuels, automotive fuels) and any refrigerant gas leakage; indirect emissions (Scope 2), arising from the consumption of electricity purchased by the company (electricity and, to a lesser extent, district heating) net of the part produced from renewable energy sources

92 The market-based method is based on the CO_2 emissions emitted by the energy suppliers from whom the organisation buys - by contract - electricity, or on market-related factors

93 The location-based method is based on average emission factors for regional, sub-national or national power generation

ELECTRIC MOBILITY

Although the first six months of 2022 marked a setback for electric mobility (-17% BEVs[94] and -2% PHEV[95]), the sector's growth forecasts are positive, also supported by the European regulatory framework that will influence the scale of its success.

The expectation is that there will be a **change of pace in the registration of electric vehicles by as early as** 2025, to be followed by sustained growth between 2025 and 2030, accompanied by a gradual decrease in the surrounding car fleet (-9% by the end of the decade compared to current values)[96], due to the retirement of vehicles powered by internal combustion engines, as foreseen by recent approvals by the European Parliament. **The EU has finally approved a measure aimed at zero emissions from cars**, banning the sale of cars with combustion engines from 2035[97].

This will contribute to the increase in the number of electric vehicles on Italian roads, which could range from 3.9 to 8.2 million (almost 23% of the total), depending on which initiatives are introduced[98].

The cooperation with Be Charge for electric mobility continued in 2022.

In fact, the re-branding of the installed EVCs, 99 to date throughout the region, was completed, placing the CVA Energie logo alongside that of Be Charge and Plenitude. In 2023, the project will continue to cover the remaining 19 municipalities. Parallel to the completion of the project, a major new investment by Be Charge is in progress at a number of large covered car parks.

In the municipality of La Magdeleine, 44 wallboxes have been installed in the Brengon car park serving as many parking spaces for the non-exclusive use of electric cars. The idea is to allow as many users as possible the opportunity to recharge their vehicle, accepting that this will be slow where parking is available, and therefore without having to reserve parking spaces exclusively for electric cars, betting on the transition to hybrid or electric cars.

23%

expected share of 100% electric cars out of the total number of cars sold in Italy in 2030 compared to 2025

Electric cars to support the electricity grid

Electric cars have the potential to become an important resource, especially once decarbonisation targets are met. **The PNIEC has set a target of 4 million electric cars in circulation by 2030**.

Considering the average battery capacity of electric cars of around 50 kWh, cumulatively this would mean a total capacity of 500GWh. During the periods when cars are parked and recharged, they could contribute to meeting part of the electricity demand.

94 *Battery Electric Vehicle*
95 Plug-in Hybrid Electric Vehicle
96 Energy & Strategy of the School of Management of the Politecnico di Milano, Smart Mobility Report (2022)
97 European Parliament, The sales ban for new petrol and diesel cars in the EU from 2035 (2023)
98 Energy & Strategy of the School of Management of the Politecnico di Milano, Smart Mobility Report (2022)

A second life for batteries: the BESS-2L project

Also **in 2022, the project "*Application of second life batteries for energy storage of renewable energy plants - BESS-2L*"** continued, funded under the 2014/20 Investment for Growth and Jobs Programme of the European Regional Development Fund (ERDF).

CVA has completed the design through a test phase, and expects to launch the subsequent installation by Loccioni in 2023, of the containers that will house the new batteries, the *second life batteries*, inverters, BMS and EMS control systems, coolers, the fire protection system and any other elements needed for the system to function properly.

The project aims to **test the possibility of reusing *second life batteries* for energy storage** in the stationary environment. Indeed, in order to foster the penetration of Non-Programmable Renewable Sources (NREs), it is necessary to combine these production plants with storage systems that guarantee the stability of the distribution network and allow energy production and demand to be aligned. As part of the project, **plans are in place to connect a 1 MWh electrochemical storage system to a flowing hydroelectric power plant in CVA** which can simulate the behaviour of other FNRP plants, on which it would be more complex to implement a small-scale pilot. The system will consist of 500 kWh of new batteries and 500 kWh of *second life* car batteries with a reduced residual capacity of 20%.

The installation phase at the Champdepraz power plant is scheduled to be completed by September 2023, with commissioning scheduled for October 2023. The end of the project, with tests to be carried out in an operational environment, is planned for March 2024.

ENERGY COMMUNITIES

Today, it is unthinkable to separate the ecological transition from the energy transition, especially considering how the vast majority of energy production derives from non-renewable energy sources. In this **scenario**, the ***prosumer* is one of the emerging figures in the new energy transition scenario**. The term is a cross between the two words of English origin "consumer" and "producer", and indicates a type of user who also participates in electricity production, producing and consuming at the same time. These new forms of widespread self-consumption can have economic, environmental and social benefits, putting citizens at the centre of the energy transition.

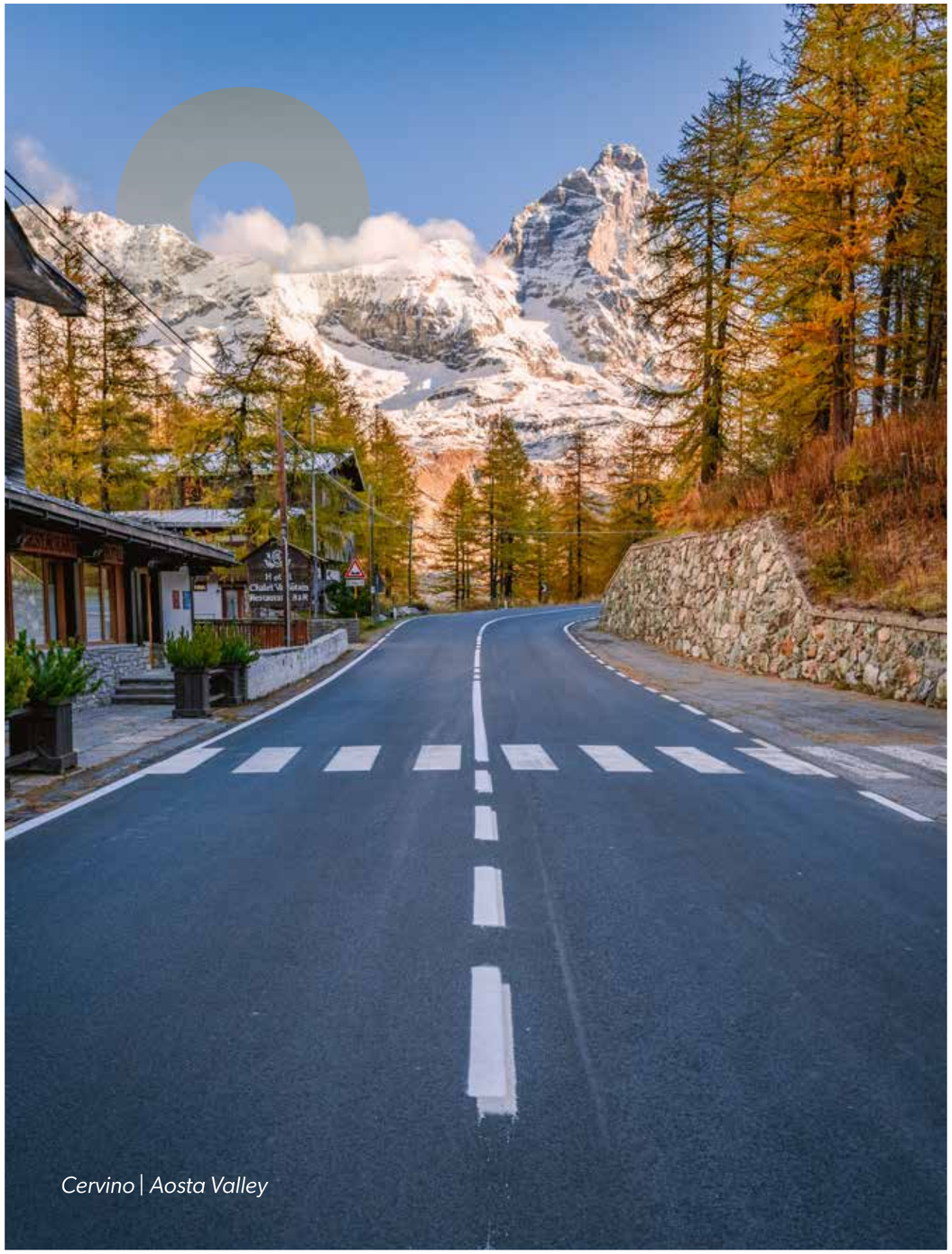
At European level, in 2016, the Commission enshrined the right of all citizens to self-generate, store and self-consume energy from renewable sources, actively participating in the energy market[99]. With the RED II Directive[100], the EU has put this right down in black and white: Articles 21 and 22 not only formally recognise the existence of forms of energy sharing on the ground based on collaboration between prosumers and consumers, but also explicitly ask member states to adopt measures to promote and incentivise them.

Even before the EU Directive was transposed, **Italy made provision for renewable energy community (REC) and collective self-consumption (AUC) projects in the Decreto Milleproroghe 2020**[101]. This decree inaugurated an experimental phase, granting for the first time to Italian consumers the possibility of joining the new widespread self-consumption configurations and providing for the development of shared energy. Subsequently, the legislation evolved with the actual transposition of RED II. Through Legislative Decree No. 199 of 8 November 2021 and subsequent measures in 2022, the Italian government and ARERA have made the regulation on self-consumption more organic, removing some technical barriers included in the experimental phase, such as the low power limit for installed systems (going from 200 kW to 1 MW) or the restricted scope of aggregation.

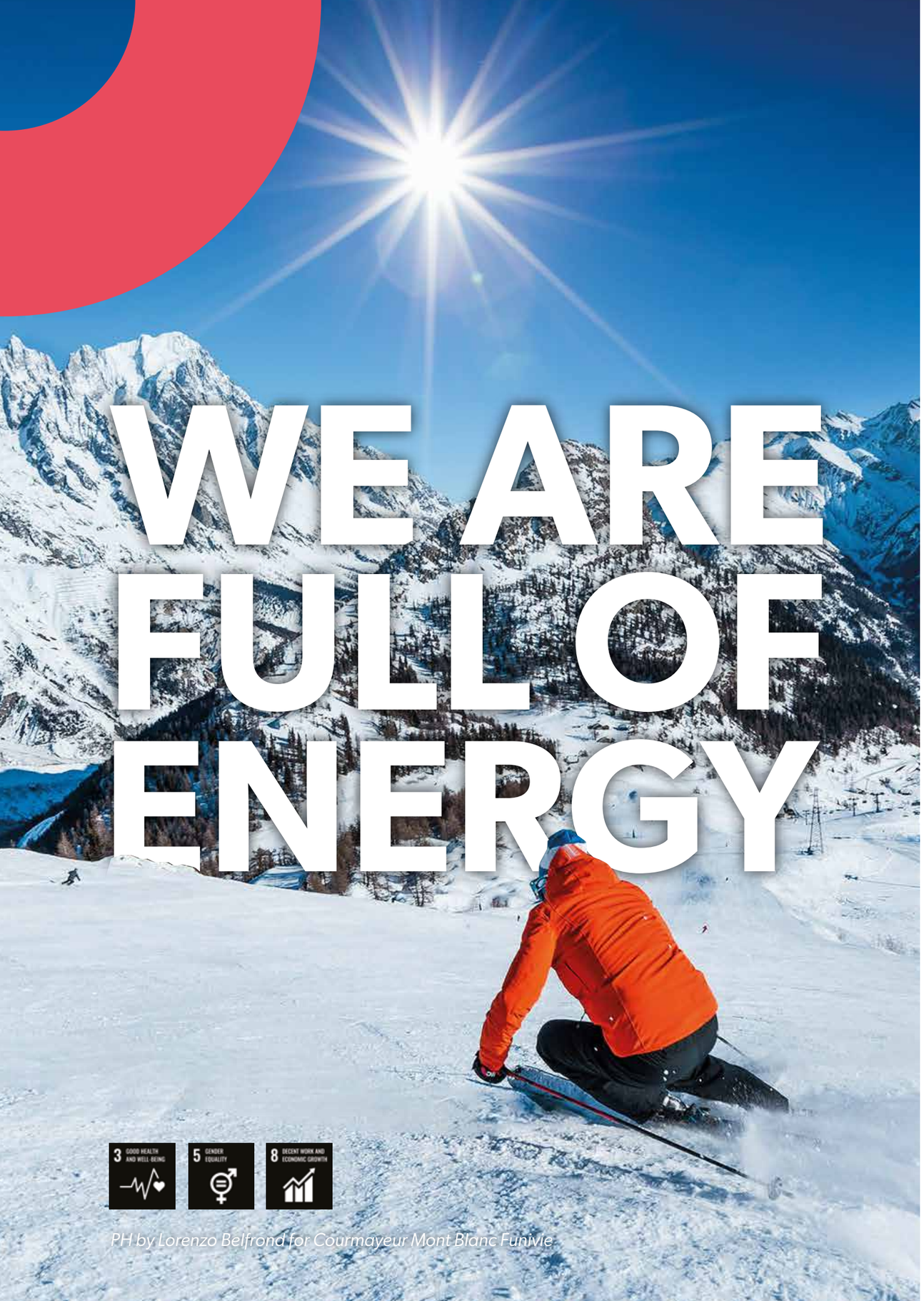
Collective self-consumption and energy communities are also a key element in achieving the goals contained in the National Integrated Energy and Climate Plan. **In fact, energy communities could contribute about 30% of the PNIEC's 2030**, with 17 GW of new power from renewables[102].

This project is perfectly in line with the objectives identified **in the *Carbon Free*** by 2040 plan approved by the Aosta Valley Region, for the achievement of which the CVA Group wants to contribute all its experience and expertise.

99 Proposal for a Directive of the European Parliament 2016/0382 (COD)
100 EU Directive 2018/2001.
101 Decree-Law 162/19, converted into Law No. 8 of 28 February 2020
102 Elemens: The contribution of Energy Communities to decarbonisation (2020).



Cervino | Aosta Valley



PH by Lorenzo Belfrond for Courmayeur Mont Blanc Funivie

OUR PEOPLE

The composition of the CVA Group

In 2022, the CVA Group's workforce increased from 600 to **647 employees** (+7.83% compared to 2021, with a turnover of 10 employees). Most people are employed full-time (vs. 1.85% part-time) with an open-ended contract (98.15%) as opposed to those on a fixed-term contract (1.85%), which in line with Legislative Decree 81/2015, mainly refer to "temporary and objective needs, unrelated to ordinary business" and/or "acausal". In the latter case, the use of fixed-term contracts is prior to a subsequent offer of an open-ended contract. The number of employees on temporary contracts in 2022 is 13, all of whom are full-time employees with fixed-term contracts, while there are 3 associates.

In terms of gender, 74% of the corporate employee population is composed of men and 26% women. Most employees are between **30 and 50 years old (68%)**. Employees under 30 and over 50 make up 6% and 26% respectively[102].

Specifically, **57 new hires** were recorded, including 27 women and 30 men, with a **hiring rate of 8.8%**[103] (an increase of 3 percentage points compared to the previous year). During the year, the Group's workforce grew significantly in order to achieve the objectives of the Business Plan, and the recent **exit from the scope of application of the Madia Law** provided new opportunities for growth and development. In terms of **terminations**, 2022 recorded **10 exits**, 4 fewer than in 2021, seeing the turnover rate decrease to 1.55%.

Staff recruitment for the Group is currently regulated by Regional Law 20/2016 as amended. .

103 The values reported by gender and age reflect the breakdown of employees falling into the following categories: managers, middle managers, white-collar and blue-collar workers.

104 All recruitments and terminations took place in the geographical area Aosta Valley Region.

Key facts and figures

647
total Group
employees

98.15%
employees with an open-ended contract

0
occupational illnesses
recorded in the last year

57
new hires
in 2022

+8.8%
staff growth

5
accidents
out of 1,013,083 hours worked

Working safely

The Quality, Safety and Environment (QSA) function is responsible for the **Integrated Management System (IMS**), which was created with the aim of defining a coherent and integrated management of the three areas in question. This policy has been certified in accordance with the **ISO 45001** standard on occupational health and safety management systems, which applies to all Group companies. In fact, as of 2022, CVA Eos was also included in the certification scope.

In addition, for all Group companies, in accordance with the Consolidated Safety at Work Act (Legislative Decree 81/2008), the **Risk Assessment Document (DVR),** in which both the hazards arising from the tasks performed and the risk mitigation measures implemented by Group companies are analysed. In addition, the detection, analysis and management of new health and safety risks is also carried out through audits and inspections performed by the **Prevention and Protection Service Manager** (RSPP), the **Prevention and Protection Service Supervisor** (ASPP) and the **Competent Doctor** within the framework of the Integrated Management System, as well as by reports from workers. These come via special "**reporting forms**" provided by the SGI, which can also be provided anonymously. In the event of work situations that may lead to injury or occupational illness, workers follow the instructions in the Risk Assessment Document and, if there is a serious and immediate danger, the supervisor immediately suspends the activity, reporting the problem to his/her superior. In addition, a **Bilateral Training, Health and Safety Commission** composed of both company (including company RSPPs) and trade union representatives was established for the CVA Group companies.

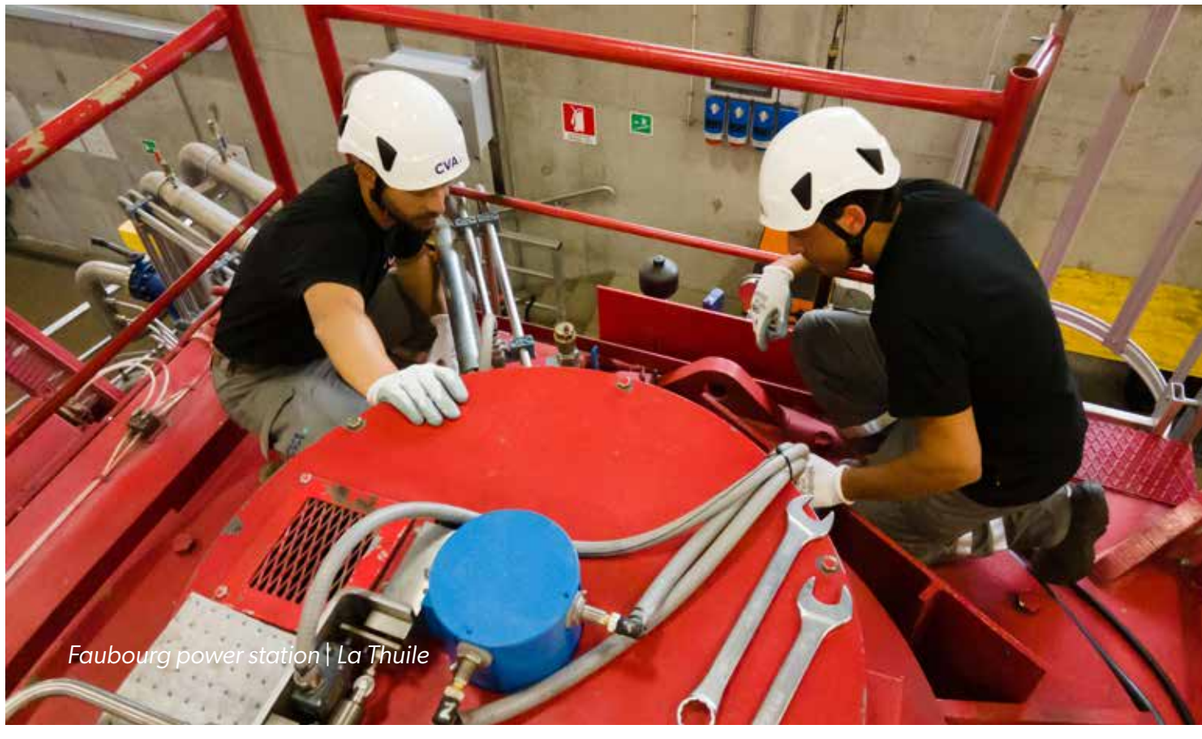
Consistent with previous years, Group companies pursued the **periodic safety management activities** such as organising training, inspections, audits, coordination meetings, drafting the Single Document for the Evaluation of Interference Risks (DUVRI), inspections as required by law, reporting equipment to the National Institute for Insurance against Accidents at Work (INAIL) and maintaining fire prevention certificates.

All Group companies have also appointed a **Competent Doctor** in possession of the requirements provided for by Legislative Decree 81/2008. The appointed professional has prepared a **health protocol** for the different company tasks, containing the types of health examinations and tests required to formulate the judgement of suitability of workers for a given task.

After conducting an experimental phase, Deval introduced a new corporate dress code and responded to staff requests. The experimental phase involved around 40 electricians and operating technicians, who from 1 September 2022, will wear the **new company uniform**; in fact, a special procedure defining the new work outfit has been drawn up and has helped to refresh the company's image that staff display in the area.

In 2022, taking into account employees, including contract workers, there were **5 accidents**[104] out of **1,013,083 hours worked**[105], of which none were considered serious[106], while no reports of occupational illnesses were received. The severity index recorded in 2022 is 0.07 compared to 0.16 in 2021. The frequency rate, on the other hand, is 5.06[107]. The Severity Index expresses the seriousness of accidents at work in conventional lost days per thousand hours worked, while the Frequency Index measures the incidence of accidents at work per million hours worked occurring in a given period.

Health and safety training is provided when workers join the company and is then differentiated according to the company job held over time, in line with regulatory requirements. In addition, relevant information is conveyed to workers through e-mails, personnel releases, documents available on the company intranet or specific training meetings. Courses are delivered both face-to-face and remotely and include a test to determine learning. Training is organised directly by the company's Prevention and Protection Service (SPP). Any additional training is initiated by the company structures at the request of the heads of functions and offices.



Faubourg power station | La Thuile

105 Injuries are recorded where they result in the loss of more than 1 working day. There were no injuries related to workers on staff lease contracts.

106 In 2022, 988,080 hours were worked by Group employees and 25,003 hours worked by contract workers.

107 Injuries with serious consequences include injuries from which the worker cannot recover, does not recover, or cannot realistically be expected to recover fully by returning to the pre-accident state of health within six months.

108 The figure reported refers to employees. In the case of contracted workers, both indexes are zero.

The well-being of our people

The corporate welfare system

The Corporate *welfare* is not only an opportunity for growth and motivation for people, but also a **strategic lever** for the sustainable development of companies. In this context, CVA is committed to offering a range of **benefits,** from support for family income, study, parenting, disability and invalidity insurance coverage, to recreational associations and commercial benefits. One example is the agreement with **Arca**, thanks to which Group employees can obtain subsidised loans for personal needs, such as the purchase and renovation of their first home, or for serious family needs due to special conditions.

Society and the labour market have undergone significant changes in recent years, partly due to the recent pandemic context and digitisation. These transformations have had a profound effect on the professional fabric, attaching increasing importance to the **of work-life balance**. The CVA Group is aware of the fact that a careful work-life balance stimulates productivity and a results-oriented approach; therefore, in continuity with the previous year and in response to this need, the Group continued working **in agile mode at "full speed"**. This method was the focus of a specific **verbal agreement**, signed with the Secretariats of the Aosta Valley Trade Union Organisations, together with which the requirements and the activation process were regulated, in line with the regulations in force (Legislative Decree No. **81/2017**). This request allows **up to two days of smart working per week** for remote workers (i.e. excluding new recruits during the probationary period, blue-collar workers, shift workers and semi-shift workers) and can be activated on a voluntary basis by the worker and is subject to subsequent authorisations to determine its compatibility with work.

As of 9 December 2022, **357 employees and 6 temporary workers** had signed the agreement. In contrast, **63** workers have not yet applied and **16** have applied but have not yet completed the process. The security incident with the computer systems, which occurred in November 2022, led to the temporary suspension of agile working for **about 9 days**, only to be reinstated after the necessary measures were taken.

On the subject of *welfare*, additional measures are in place to regulate *smart* working for certain categories of workers, including **pregnant women** who are entitled to 4 weeks of agile work before the mandatory leave period and **fathers and mothers** who can take advantage of 4 weeks of *smart working* before the child turns one. Finally, for **workers undergoing life-saving therapies**, remote work days are provided following chemo-, immuno- and radiotherapy treatments. The Company is also responsible for accommodating any requests for longer temporary and continuous periods, by employees suffering severe hardship.
In terms of other benefits provided for employees in all the CVA Group's operational sites, these include **supplementary pension schemes (FOPEN, FONDEMAIN)**, to which the CVA Group contributes an additional share in addition to what is contractually provided for, and supplementary health care.

For personnel governed by the sector's CCNL, the CVA Group implements company programmes to protect the health of workers through the Supplementary Employee Health Fund (FISDE) in which all permanent employees are enrolled, with the company paying a share. The Fund entitles **employees and their dependants to health reimbursements**.

Following the agreement signed between the Fonti Istitutive (acts signed to establish the pension fund) of FISDE and ARCA, new coverage against the risk of non-self-sufficiency *(Long-term Care*) was set up to extend the assistance already provided through the benefits that FISDE provides under the "Regulations for Persons with Disabilities". In April 2022, the CVA Group Companies signed an Addendum to the existing Agreement with FISDE, whereby they joined the separate management scheme "**FISDE for non-self-sufficiency**", in order to guarantee coverage against the risk of non-self-sufficiency for their employees in service as of 15 July 2021 and former employees of the CVA Group Companies, who left service as of 15 July 2021, provided that certain conditions are met. The new cover provides income support through the payment of an annual annuity and supports the person until the non-self-sufficiency condition persists (INPS support allowance).
At the same time, for managerial staff, the **company's health and safety programmes** are implemented through the Supplementary Health Care Fund (FASI), whose purpose is to provide managers who are voluntarily enrolled, whether in service or retired, and their families, with supplementary benefits in addition to the assistance provided by the National Health Service within a system of mutuality and intergenerational solidarity.
In addition, managerial staff are insured with ASSIDAI (a non-profit supplementary health insurance fund).

Alongside these tools and contractually stipulated insurance coverage (including coverage from non-occupational accidents), the Group has taken out an additional insurance policy to protect all employees concerning **death risk coverage and coverage in case of permanent total disability and invalidity**.

Remuneration and incentives for CVA people

There are several reward and professional development systems derived from national bargaining and company initiatives applied by the CVA Group. The main ones concern the **variable and incentive remuneration system**, linked to the general performance of the company and the achievement of objectives inherent to the Functions' work activities; the wedding allowance for employees who get married and a seniority bonus paid to people who have been with the company for 25, 35 and 40 years respectively.

In this context, in 2022, the CVA Group Report "**Framework Agreement - Performance Bonus years 2022-2024, cash 2023-2025**" was signed, in accordance with the provisions of Article 44 of the CCNL "Performance Bonus", managed with three-year agreements. The report sets out the criteria for determining the performance bonus, as well as corporate *welfare* measures, and refers to the definition of incentive targets based on productivity, quality, efficiency and innovation. The performance bonus is divided into: company profitability - defined at Group level, and incentives for productivity, quality, efficiency and innovation - defined at individual company level.
Since 2016, the CVA Group has signed an agreement with the trade unions that introduced the possibility on a voluntary basis, within the limits provided for by current regulations, to convert the Performance Bonus into **welfare** services and benefits. The CVA Group incentivises the conversion of the Performance Bonus by increasing the converted portion by an additional percentage, increased from 15% to 20% from 2022. Furthermore, if the pre-established target relating to the Profitability of the Performance Bonus is reached, the CVA Group disburses an additional fixed amount in the form of corporate welfare, to be allocated to supplementary pension funds. Starting with the 2021 disbursement, an allowance of 15 working days was introduced for calculating the premium reduction coefficient, and disbursement was also provided to employees whose employment was terminated due to retirement or death.

Finally, in 2022 €1,000 was paid to each employee as an additional one-off bonus, to reward the shared contribution to the excellent results achieved during 2021.

Training and skills development

Insieme 2022 (Together 2022)

The CVA Group hosts an end-of-year company *convention* every year, an **activity involving all company employees** and whose purpose is to highlight achievements **and future goals**.

In 2022, the focus of the annual summary meeting was *Tante Storie e un solo racconto (Many Stories and One Tale)*. The analyses and strategic reflections proposed by the Board were mainly focused on the unique and unprecedented scenario of 2022.

Straddling the end of the pandemic emergency, the advent of the energy storm associated with the Russian-Ukrainian conflict and the occurrence of the driest year in 70 years, in 2022, the CVA Group effectively navigated a particularly turbulent and unpredictable environment.

Despite these external factors of significant magnitude, CVA managed to turn challenges into opportunities, making the necessary timely decisions, and having the indirect opportunity to test the capacity and competence of the entire Group team.

Among the landmarks on the company's horizon are new and particularly significant developments in solar and wind energy and in agri-voltaics, an expansion plan that envisages the growth of a mature company that is a key player in today's environmental and energy challenges.

Inieme 2022

Training as a strategic lever

Health and safety at work together with upskilling, reskilling for skills development

The focus on motivation and the professional growth of the CVA Group's people sees training as a fundamental development lever, even more so in the face of the Group's strategic plan, for the deployment of which incremental personnel growth is necessary. In 2022, a total of **17,730 hours of training** were provided for employees of CVA Group companies, including environmental and occupational health and safety training, courses for the development of professional potential and skills upgrading.

Generating *upskilling*, incentivising the renewal of skills (linguistic, IT, soft skills) and *reskilling*, retraining skills and aiming precisely at the "jobs of the future" that can ensure good opportunities for personal and professional growth, is one of the objectives of the Group's Integrated Plan, to ensure the growth of the entire company.

With a view to promoting this kind of activity and encouraging employees' self-training, the Group has contracted, for the three-year period 2022-2024, the **Udemy Business** training platform, which offers unlimited access to more than 6,000 high-level courses, usable in different languages and with the possibility of being completed at any time and from any device.

Since the contractualisation of the platform to date, **182 users** out of a total of 400 have been allocated and 5 are outstanding invitations; of the 182 activated users, 157 (86%) are enrolled in at least one course, and of these, 80% have attended at least one lesson. In total, there are 644 hours of self-training delivered through the Udemy platform in 2022.

For the type of training involving ***upskilling* and *reskilling*** topics, courses on Microsoft Excel, specific application programmes for learning English, improving communication, conflict resolution and *leadership* had the highest number of enrolments in the first period. The activation procedure of Udemy Business for the time being concerned the companies CVA, CVA Energie and CVA Eos and involved about 35% of the respective company population.

With a view to the gradual extension of the use of the platform to the entire corporate population of the Group, a presentation meeting of the platform was also held with one of the Functional Managers of Deval, at the end of which the users were also issued to the other Functional Managers, in order to also involve Deval in the activation.

In 2022, the decision was taken to maintain the activation of the **two language platforms Babbel and Wall Street English** (WSE), which are specifically

6,000 high-level courses

available through the Udemy Business platform

designed for English language improvement. In detail, the "Babbel" school provides a teaching formula consisting of both individual interviews with a teacher and on-line lessons, while the "*Wall Street English*" school offers a teaching formula consisting of on-line lessons and virtual classroom learning with a teacher and other students of the same level.

With regard to Babbel, 37 user accounts were activated and the average per-capita use was about 6 hours in total in the first eleven months of the year, with 60 hours of use by the most active user, and with regard to *Wall Street English*, 12 user accounts were activated and the average per-capita use was about 11 hours; about half of the total 135 hours of use were by the most active user.

360 hours

training courses delivered via language platforms

A central element of the CVA Group's people training is the focus on **health, safety** at work and the **environment**. A total of more than 12,000 training **hours** were provided in all Group companies on these topics in 2022. Staff training on **ESG issues** is strategically important, to enable everyone to acquired knowledge on the subject and be aligned with the Group's sustainability goals.
In 2022, a course was held on ESG - Rating, Assessment and New Reporting Trends, with a total of 16 hours delivered, and courses on sustainability and the European Taxonomy, with a total of 64 hours.

In addition to these types of training, the possibility of having their employees participate in two types of courses within the framework of **Fondimpresa** 's "**Generazione Competente**" training plan was brought to the attention of department heads.

The selected courses were "*Leadership* and Team Leadership" and "Conflict Resolution" and were attended by **29** CVA employees from the Operations Division with involvement of the Operations Departments, the Purchasing and Procurement Function and the Property and Services Function, and 2 employees of CVA Eos (a total of 8 managers, 19 clerks, 4 workers).

In the context of specific training by Function and Field of Activity, of particular relevance also in terms of the resumption of in-person courses, which had suffered a setback due to the pandemic, is the **technical-specialist training** course that took place in July and involved 10 mechanical workers from the three Operations Departments.

+12,000 hours

on health, safety and environment training in 2022

The cooperation with e-distribuzione's training centre in **Sestriere**, which allows the involvement of the operational body in the training activities of CVA's Deval personnel, will continue in 2022. In particular, courses were provided on safe driving on snow, ice and off-road, in planned maintenance or breakdown situations. *Task Force Training* and risk assessment courses for extreme weather events are also planned for both operational and clerical staff.

An initial analysis of corporate climate

In February 2022, also in view of the possible impact caused by the pandemic period, a corporate climate assessment project was launched to gather all the points of view and needs of personnel, involving Top Management, Area/Division and Group Function Managers and different types of population (middle managers, blue collar, white collar, technical, commercial, administrative and temporary workers) through interviews and *focus groups*. A **Work Climate Analysis** questionnaire was then launched for the entire company population in order to survey employees' needs and evaluations at work. Out of a total group population of 635 potential participants in June 2022, there were **425**participants, 67% of the total. Specifically, based on the reflections and outputs gathered during the qualitative field interview phase, **four main areas of investigation** were identified: *team spirit*, governance, communication and reward/career.

As a result of these findings, areas for improvement have already been identified and are now being evaluated to meet the needs of the corporate population. This initiative is incorporated in the **Generazione Futuro**, an activity that was set up to complete the CVA Group's reorganisation path started in 2018, aimed at transforming the structure into a progressively leaner organisation, creating widespread leadership in order to make decision-making processes faster and more shared.

CVA TLC technician

Key facts and figures

1.5
billion €
distributed economic value

76
million €
value of supplies

84,126
customers
served in the free market and in the greater protection regime

122
million €
payments to the public administration

37
million €
value of purchases commissioned from local suppliers in 2022

201
local suppliers activated in 2022

THE PEOPLE OF THE TERRITORY

The economic value generated and distributed

In 2022, the value generated by the Group amounted to approximately Euro 1.7 billion. Of this value, more than Euro 1.5 billion was distributed, accounting for almost 90% of the total. The distribution of the generated economic value table makes it possible to analyse the distribution of the value in the form of costs, highlighting the flow of resources addressed to the stakeholders that have contributed, in various ways, to its production.

Euro thousands	2022	2021	2020
Economic value generated	**1,734,401**	**715,898**	**540,819**
Value of production	1,734,100	715,578	540,736
Income from equity investments	301,301	320	83
Extraordinary income	-	-	-
Distributed economic value	**1,567,012**	**601,401**	**469,321**
Operating costs	1,353,003	440,698	321,768
Value distributed to employees	42,246	39,521	38,469
Value distributed to capital providers	(11,322)	8,751	5,824
Value distributed to the Public Administration	122,363	75,159	54,567
Value distributed to shareholders[108]	60,001	36,577	47,795
Value distributed to the community*	722	696	899
Economic value retained	**167,390**	**114,497**	**71,497**

Compared to the year 2021, the change in distributed economic value went from Euro 638,839 million to Euro 601,401 million, a change of 6%; compared to the year 2020, the change in distributed economic value went from Euro 506,869 million to Euro 469,321 million, marking a change of 7%

*donations, sponsorships, events, membership fees

Distribution of the economic value generated	2022
Suppliers	77,8%
Employees	2.4%
Capital providers	-0.7%
Public Administration	7.1%
Community	3.5%

109 Finaosta S.p.A. is the Group's sole shareholder.

Close to our suppliers

Maintaining a **long-lasting and transparent** relationship with suppliers and working towards constant improvement in terms of collaboration form the basis for effective business management, especially with regard to productivity and business competitiveness.

For CVA, having an effective supply chain means **buying from local suppliers**, recognising the value of the region more by supporting and fostering its economic growth and business ecosystem.

In this respect, looking ahead to 2022, CVA has commissioned purchases of more than **Euro 37 million** from 201 companies in Aosta Valley.

Values in thousands of €

CVA GROUP	AOSTA VALLEY		NON-REGIONAL		TOTAL	
FY	Suppliers	Amount	Suppliers	Amount	Suppliers	Amount
2022	201	37,014	267	39,198	468	76,212
2021	231	54,402	337	65,958	568	120,261
2020	211	16,250	331	52,929	542	69,179

Close to our customers

CVA Energie pays great attention to its customers, striving to create customised offers and solutions to meet the needs of domestic customers, small professionals, condominium customers and large business customers.

In 2022, more than **84,000**customers were served, and almost all supply points are in the Aosta Valley (97%). In 2022, the main share of energy was sold to the retail market. Energy sold to business customers amounted to 1,399 GWh.

TYPE OF END CUSTOMERS	2022		2021		2020	
	Energy sold (GWh)	Customers	Energy sold (GWh)	Customers	Energy sold (GWh)	Customers
Business[109]	1,399	1,002	1,524	722	2,083	799
Retail	173.09	49,561	160.54	45,659	155	44,686
Greater Protection	37.16	33,563	52	38,184	62	41,096
Total	1,609	84,126	1,576	84,565	2,300	86,581

1,399 GWh
energy sold to Business customers

97%
supply points Aosta Valley inhabitants out of the total

110 Including the PPA of CAS

Towards the end of the protected market

While the service of greater protection offers tariffs linked to market trends and subject to quarterly review regulated by the **Regulatory Authority for Energy, Networks and Environment (ARERA),** the free market allows commercial company operators to set their own prices and tariffs, which are then determined on the basis of the offers proposed by competing **electricity companies**. Under this regime, the Regulatory Authority for Energy, Networks and Environment (ARERA), determines energy costs only for matters concerning transport, distribution and system charges**.**

For several years now, the **compulsory switch** to the free market has been in place, which will put an end to the majority protection market; however, its end date is still uncertain, as it continues to be extended. The compulsory switch to the free market in 2021 concerned Small and Medium-sized Enterprises (SMEs), while on 1 April 2023 it will concern micro-enterprises with power above 15 kW. According to the provisions of the **Aiuti Quater Decree**, for both electricity and gas households, price protection is to be overcome by 10 January 2024, the date by which the Gradual Protection Service will be assigned to household customers who had not yet chosen a free market supplier at that time, guaranteeing continuity of electricity supply.

At present, according to the latest data provided by ARERA, there are about 7.3 million domestic customers still under protective conditions in the gas sector, out of a total of 20.4 million, about 35.6%. It is up to the Authority, which has already started the process, to define the various steps for the definitive opening of the gas market[110]. The transition to the free market will be important not only to **increase the competitiveness of operators and enable informed customer choice, but also to facilitate the transition to renewable energy**.

For those who have not yet joined the free energy market, CVA Energie operates a greater protection service through the Enerbaltea brand. This service has been in operation since 2016 and supplies electricity to more than 37,000 customers each year.

Joining forces for the benefit of customers

In a challenging year like 2022, the Group is committed to providing extraordinary measures, not only from an energy perspective, but also from a social one.

With this in mind, and considering the difficulties that households may face in paying their electricity bills, a meeting was held in May 2022, sponsored **by the Economic Development, Training and Labour Department**, with the President and CEO of **CVA Energie** and representatives of **Consumer Associations** in attendance. The ultimate aim of the meeting was to reach an agreement to identify concrete solutions that would mitigate the impacts of high energy prices and enable customers to pay their bills. Following the meeting, CVA Energie signed the **Consumers' Agreement** in support of families, to offer customers the possibility of activating an instalment plan of up to 12 months for the payment of their electricity bills, with instalments of a constant amount of more than €20, with no down payment and no interest on arrears.

111 The update of protection conditions in the third quarter of 2022 in detail, ARERA (2022)

CVA Energie's customers on the free market were able to adhere to these conditions until 30 September 2022, either by filling out a special form or by making a call. CVA Energie and the Consumers' Associations also undertook to set up a round-table group to **discuss issues related to the "energy bill"**.
In addition to this, **CVA Energie** and **Confindustria Aosta Valley** have joined forces to help Aosta Valley companies combat rising energy costs; in this regard, a three-point plan was agreed with CVA. Firstly, the signing of the agreement took place: a new memorandum of understanding that gave Confindustria Aosta Valley members the opportunity to purchase energy at cost price, without surcharges. With this initiative, CVA confirms its focus on and promotion of energy efficiency and the use of renewable energy in the area in which it operates, with the aim of getting ever closer to the social and productive fabric of Aosta Valley.

Following the signing of the agreement, the **Consorzio Energetico Valdostano** was set up under the aegis of **Confindustria Aosta Valley**, which allows all members to purchase the necessary energy (electrical and non-electrical) at a subsidised price. Last but not least, CVA was involved in a round **table discussion** to create the conditions for the development of **Local Energy Communities**, in line with regulatory developments in the sector, in order to share the energy produced to reduce the demand for it from the national grid. For the first quarter of 2022, Italian households and businesses were faced with rising energy and gas prices, which resulted in bill increases of up to 55% and 42% respectively.

In terms of final effects, for the **electricity** bill **the expenditure for the typical household in 2022** (1 January 2022 - 31 December 2022) was **about €1,322 at national level** , compared to about €632 in 2021 (the equivalent 12 months of the previous year)[111], a circumstance that increased the risk of **energy poverty**. As early as October 2021, CVA Energie, in order to cope with the sharp rises in energy prices, had published the CVA SCONTO40 offer (40% discount on the energy component) for users located in Aosta Valley, initially intended only for customers coming from the Greater Protection Service and then extended to customers coming from the free market.
In addition, customers already being supplied by CVA Energie, as of 1 February 2022, automatically benefited from an increase in the discount from 25% to 40% for domestic use and from 6% to 10% for all other uses.

The application of these rebates in the bill provided concrete help to families and businesses in Aosta Valley in a year that saw the price of energy reach new all-time highs. As part of its focus on its customers, CVA Energie has **extended the offer on the energy component for the whole year 2023**.

Sconto 40

the offer designed for Aosta Valley customers to counteract rising energy prices

112 Energy: ARERA's extraordinary intervention prevents price doubling, electricity increase limited to +59%. Gas price will be updated at the end of each month. Report to Government and Parliament on end-of-protection, ARERA (2022)

Energy poverty

According to the International Energy Agency, energy poverty in **developing countries** affects around **1 billion people** who do not have physical access to the electricity grid. At the same time, in **countries with advanced economies**, the problem is one of **convenience**, with a significant number of households that despite having electricity and modern cooking systems **cannot afford to consume as much energy as they would like**; in 2022, **9 million** Italians will be at risk of energy poverty due to high utility bills and the current crisis in the sector[112]. In this scenario, the target set in the PNIEC is to **reduce energy poverty by 2030 in a range between 7 and 8 % of all households**.

Already in 2021, the Group joined the **Manifesto on Energy Poverty**, whose aim is to support families in a situation of economic and social vulnerability through targeted projects. The programmatic points of the Manifesto include: activation of monitoring related to energy poverty at national level, education on energy saving, building special-purpose alliances between public, private and third sector organisations, and raising public and *policy maker*. awareness.

Community engagement

CVA supports the social development of the Aosta Valley region through community investments, shows, events in the region, and opportunities for musical, artistic and cultural knowledge. In fact, the Group has organised a series of **dates** for the summer of 2022 in collaboration with municipal administrations to testify to the presence of clean energy in the Aosta Valley.

The value donated in 2022

Through donations and sponsorships, the CVA Group has supported various initiatives and sectors, such as health, culture, sports, the school system and the environment. In 2022, the value of the Group's contribution to the region was **€ 834,102** including donations and sponsorships.

The territorial events of 2022

CVA ensured that all events organised during the summer of 2022 were Carbon ***Neutral***: for each event, CO_2 emissions were calculated and subsequently neutralised with internationally certified environmental protection projects. This means that for every kilogram of CO_2 produced by the event, as much CO_2 was abated by supporting certified environmental protection projects.

The **CVA Show Cooking 2022** event took place in **five stages** in Aosta, La Thuile, Saint-Vincent, Courmayeur and Etroubles, dedicated to the discovery of local food and wine products and recipes created by professionals from the Aosta Valley Chefs and Sommeillers Association.

113 International Energy Agency (IEA), Energy Efficiency (2022)

The event, which was attended by **293** participants, is characterised as an opportunity for the coming together of **knowledge and flavours** with a focus on the environmental aspects of production and conscious consumption.
Rock climbing is one of the sports closest to the Aosta Valley and its territory. For this reason, CVA has organised "**Bouldering Kids 2022**", an event aimed at children aged 6 to 16, which allows them to try out an experience that is new to many, through an unusual and itinerant formula, developed under the watchful eyes of a Valdostan Alpine Guide. *Bouldering* is in fact a special type of climbing that consists of climbing boulders up to 7-8 metres high with varying degrees of difficulty. The event was held in **four stages**, Pré-Saint-Didier, Cogne, Breuil-Cervinia and Brusson, and was attended by **266 young people**.

In 2022, CVA also organised the first edition of the "**Drop by Drop"** exhibition, a planetary journey from the majestic grandeur of the glaciers to the remote depths of the seas, which can be visited at the CVA headquarters in Maën, Valtournenche. The exhibition dealt with the importance of every drop of water, between scarcity and accessibility, and included a double bass and saxophone concert at the opening. The main theme of the musical duet was **energy**, the "electric current" flowing in the encounter between two people and the two artists, Marchesano and Pramotton. Enrico Ascoli's sound installation, on the other hand, led into the world of experience and emotions with a large-scale "*site-specific*" work to be listened to and experienced first-hand.

Among other initiatives worthy of note, the collaboration with the **Courmayeur Mont Blanc Foundation** continued in 2022 to support its scientific activities, carried out through studies and research involving national and international entities and individuals.
Similarly, the sponsorship of the **Gran Paradiso Film Festival** continues, aiming to raise awareness and reasoning on environmental issues, as well as the collaboration with Aosta **Classica**, which in 2022 reached its 27th edition, "Aosta Classica al Forte di Bard", under the banner of high-profile musical and cultural events to create tourism induced in the area.

Together for the environment

Also in 2022, the Group continued its collaboration with the project ***Save the Glacier***: photographic and scientific research", carried out in partnership with Skyway Monte Bianco and Grivel, two important Aosta Valley businesses, with which practical actions were taken to protect the glaciers of Mont Blanc and the environment in general. The first leg of this tour, in 2020, was the Monte Rosa massif; in 2021, it was the turn of Cervino, while in 2022, centre stage was taken by **Gran Paradiso**. The exhibition was set up in the rooms of the Fortress of Bard's wine cellars, which promotes initiatives to raise awareness of environmental protection and disclosure activities related to climate change.

In 2022, the **CVA Group participated in the 10th CSR and social innovation Fair**, entitled *Connessioni Sostenibili* (Sustainable connections).

It is a cultural event, a *networking* opportunity, and a customary rendezvous for organisations, governments and territories to share ideas and projects that foster a sustainable transition.

CVA participated in the *workshop* entitled "**Sustainable energy, when the source is Renewable**", on the electrification of consumption, decarbonisation, and technological innovation; topics that are increasingly at the centre of Italian businesses today.

In October 2022, CVA organised, in cooperation with the Department of Education, Universities, Youth Policy, European Affairs and Participations and the Superintendency of Education, the event "**Crescere Rinnovabili - progetti per la scuola" (Growing Renewable - school projects**), aimed at school heads, teachers and students of primary and secondary schools. The event, which was also part of the **Festival of Sustainable Development 2022** - ***A new generation of ideas makes room***[113], was designed as an opportunity to meet and discuss sustainability issues with educational institutions, as well as to thank all those, teachers and students, who actively collaborated in the realisation of some of CVA's Crescere Rinnovabili projects. The event was attended by **22 teachers** and **132 students** from Aosta Valley secondary schools, as well as **13** secondary schools in the Aosta Valley.

CVA Crescere Rinnovabili Workshop

Learning by doing thanks to the LabEnergie project

The LabEnergie project, this year in its third edition, is part of the "Crescere rinnovabili - Progetti per la scuola" (Growing renewable - Projects for schools) initiative and offers middle school students in the Aosta Valley the chance to **learn how energy is produced from renewable sources** such as water, wind and sun.

The project proposes **workshop kits** and **educational videos** that allow children to find out about the functioning of hydroelectric, wind and photovoltaic power plants through **experiments**, enabling them to better understand and memorise the theoretical information learned by putting it into practice immediately.

More than **500 LabEnergie kits** were requested by teachers during the 2022 school year for pupils in the third year of secondary schools; the kits were produced in collaboration with the EnerTech school cooperative of the 3rd year class of electronics and electrical engineering of the Isiltp institute of Verrès and with the coordinating teachers of the Network Agreement for the support and development of STEM subjects "*Project Energie*". In 2022, the project involved **249 pupils, 9 classes, 9 teachers and 7 schools**, while 20 pupils from 2 secondary schools and 4 teachers were involved in the production of the instructional videos and video tutorials.

The project focused, in an experimental phase, on the creation of **electrical circuits powered by solar energy via the photovoltaic panel**. In fact, a kit containing 1 inductor (coil of copper wire) with LEDs already connected, 2 small photovoltaic panels, 1 DC motor, 1 blue 4-blade fan, 10 coloured LEDs and other gadgets was made and distributed.

The "***learning by doing***" teaching method, i.e. applying what has been learnt at the theoretical level in the field, not only stimulates creativity, but also promotes inclusion and equity between students with different abilities, as it makes learning content more accessible to students with difficulties. The goal of this and upcoming initiatives with schools is to spread knowledge about clean energy, environmental protection and sustainability in broader terms.

Environmental awareness projects for teachers and pupils

"Climate Action" is aimed at teachers and secondary school students in order to increase their sensitivity and **awareness** of environmental, economic and social sustainability issues by offering engaging and stimulating learning tools for students. "**Together Towards 2030**" is an educational project for secondary schools and aims to promote the dissemination and knowledge of the 17 Sustainable Development Goals defined by the UN Agenda 2030.

Participation in both projects entitles participants to training credits recognised by the **MIUR (Ministry of Education and Merit)**, valid for the purposes of compulsory teacher training. The projects are present on the S.o.f.i.a. platform of the Ministry of Education, University and Research and are recognised by the MIUR.

For these projects, CVA has produced two guides for secondary school teachers, which can be downloaded on-line from the relevant section of the website or are available in hard copy on request.

Both guides consist of a educational section on the key themes identified, flanked by proposals for different activities that teachers can carry out in the classroom with their pupils.

Two webinars were made available to teachers, one on the topic of climate change and its main effects on rising temperatures, the water cycle, sea levels and extreme weather phenomena, and the other on the **17 Sustainable Development Goals**, signed in 2015 by 193 UN countries.

The recording of the webinars is available on the site together with the **9 podcasts** made for students on these topics. A total of **539 students** were reached.

539 students

reached by the project "Growing Renewable"

In 2022, CVA promoted the **"Artistic Representation of the Sustainable Development Goals of the 2030 Agenda"** project at the Liceo Artistico di Aosta, in which **33 pupils** of the **2** fourth year classes participated, producing illustrations on 12 of the 17 Sustainable Development Goals of the UN Agenda 2030. The most representative of those presented were included in an Agenda 2030 Handbook, produced by CVA, and distributed during the event to schools and all students participating in CVA's Crescere Rinnovabili projects.

114 The Festival of Sustainable Development, promoted by the Italian Alliance for Sustainable Development (ASVIS), is the largest Italian initiative to raise awareness and mobilise citizens, young generations, businesses, associations and institutions on the issues of economic, social and environmental sustainability.

The energy of sport and attention to diversity

Sport, by encouraging interaction with others, can become a successful tool not only in tackling discrimination, but also to **enhancing differences**, transforming them into important resources for society. This is why CVA invests in inclusion through the support of important events, such as "**Giri di energia - itinerari inclusivi" (Energy tours - inclusive itineraries), held in October 2022** at Valgrisenche.

The "Giri di Energia" routes, that lead to the CVA Group's production facilities, have been enriched in 2022 with information that allows, for each of them, a **self-assessment of the walkability of the path**, even for those with special needs such as the use of a wheelchair, a walking support, or prams for small children.

With a view to **inclusivity**, an attempt was made to provide information, as complete as possible, for every need: an **audio guide** was created for each trail, especially useful for the visually impaired, and a **video guide** in **sign language (Video LIS)** suitable for the hearing impaired. In September 2022, the project was presented to the regional associations working in the field of different abilities, with whom the Beauregard Energy Tour was travelled in an atmosphere of sharing and conviviality.

Towards sustainable mobility

Also in 2022, CVA decided to promote the third edition of the eBiketour Evolution, an event created in 2019 with the aim of promoting sustainable modes of transport.

The event, held in August, is organised in collaboration with the interested Municipal Administrations, and allows participants to explore some of the most beautiful corners of the Aosta Valley in a fun and sustainable way. The 2022 edition was attended by 163 participants and focused on a **four-stage cycle-tour route with pedal-assisted bicycles**: Antey-Saint-André, Champorcher, Fénis, La Magdeleine, respectively on 9-10-11-12 August.

In September 2022, CVA also participated in the "**Diverse Bikes"** event, held in Gressan, with **29 registered participants**.

An inclusive day, full of opportunities for contact and knowledge with the world of disabilities and with the assistance and advice of the MTB instructors of the Aosta Valley. The day is also meant to be an opportunity for inclusion and sharing experiences for all people, whether they have disabilities or not, united by the same desire to participate in the social life of the community.

163 participants

registered for the eBiketour Evolution III

CVA eBiketour Evolution 2022 | Champorcher

Methodological note

With this document, the CVA Group intends to comply with the provisions of **Legislative Decree 254/2016** on the disclosure of non-financial information to the extent necessary to ensure an understanding of the company's business, its performance, results and related environmental, economic and social impacts. CVA's fifth Sustainability Report, which for the second edition takes the form of a **consolidated non-financial statement**, aims to provide the Group's *stakeholders* with an accurate, comprehensive and transparent account of its achievements and performance.
The information within the document refers to the last fiscal year - **from 1 January to 31 December 2022** - and the topics covered are presented ensuring, where possible, a comparison with the previous two years (2021 and 2020) in order to return a comparison of the Group's performance over time. The reporting boundary, consistent with the requirements of Article 2, paragraph 2 of the Decree, coincides with that of the Group's 2022 Consolidated Financial Statements. The reporting frequency is annual.

The document was prepared in accordance with the guidance provided by the new edition of the Global Reporting Initiative's **GRI Standards 2021** - now considered the most authoritative and widely used national and international non-financial reporting standard. In addition, the document contains disclosures related to the new business analysis requirements arising from the **European Taxonomy** on Sustainable Finance (EU Regulation 2020/852), in the scope of which the CVA Group falls. As required by the Reporting Standard, within this document is the "GRI Content Index," containing details of the indicators reported.

The document was built around **9 material sustainability topics** identified and updated by CVA. These same topics were identified for the first time in 2018 through **materiality analysis**, the tool that allows organisations to identify the environmental, economic and social issues deemed most important to the company and its stakeholders. Starting from an analysis of CVA's sustainability context and value chain, a list of actual and potential positive and negative impacts generated by CVA's activities on the external context were **identified**. In line with the standards, the analysis was carried out by activating a **listening** process of 18 external stakeholders.
The Sustainability Report/NFS 2022 was approved by the Board of Directors, together with the draft Consolidated Financial Statements, on 3 May 2023, evaluating the completeness and consistency with the recorded topics of the materiality matrix.
The collection of information and related data reported in the Sustainability Report took place in collaboration with all the people of the company, each for the activities within their competence, constituting a timely and comprehensive information flow that has ensured the soundness of the reporting model. The process of collecting qualitative and quantitative information and processing and managing data flows involved the direct involvement of Functional Managers and their operational teams, who shared and adopted the GRI standards in the 2021 edition in order to prepare the required and reported information. For further details on the contents of this document, please refer to the Index of GRI Reported Indicators.
The Statement is also the subject of a limited review ("limited assurance engagement", according to the criteria outlined in ISAE 3000 Revised) by EY S.p.A., which, at the end of its work, issued a report on the conformity of the information provided with respect to the Decree and the GRI Standards[115].
For any further information, please contact us at: sostenibilita@cvaspa.it

115 Quantitative indicators that do not relate to any general or topic-specific disclosures of the GRI Standards, which are reported on the pages indicated in the Content Index, are not subject to limited review by EY S.p.A.

Notes to the data and information

Workforce Data

The headcount figures for 2022, in continuity with previous years, include the total figures for the Group and its subsidiaries as of 31 December 2022. Punctual comments have been inserted where necessary for the reading of the data in correspondence with each indicator.

Health and Safety Data

With reference to accidents, accident data for 2022, 2021 and 2020 are shown for both employees and non-employees (contract workers), although no accidents were recorded for contract workers. The injury severity index is calculated as (number of days lost due to injury/hours worked) x 1,000. The recordable work injury rate is calculated as (number of injuries/hours worked) x 1,000,000. The rate of occupational accidents with serious consequences is calculated as the number of occupational accidents with serious consequences (excluding deaths) / hours worked x 1,000,000.

Environmental Data

The calculation boundary for energy consumption, energy intensity and emissions data for 2022, in continuity with previous years, includes the total data of the Group and its subsidiaries as of 31 December 2022. Punctual comments have been inserted where necessary for the reading of the data in correspondence with each indicator.

2022

- Scope 1 fuels (gasoline, diesel, LPG, automotive hybrid): Ministry of the Environment and Protection of Land and Sea ("MATTM"), Table of national standard parameters, 2020, 2021, 2022
- Scope 1 fuels (natural gas and diesel for stationary combustion): UK Department of Environment, Food & Rural Affairs (DEFRA), Conversion factors - Full set, 2020, 2021, 2022
- Scope 2 Location-based: Terna, International Comparisons 2019
- Scope 2 Market-based: AIB - European Residual Mixes, 2020 and 2021

2021

- Scope 1 fuels (gasoline, diesel, LPG, automotive hybrid): Defra 2021
- Scope 1 fuels (natural gas and diesel fuel for stationary combustion): national standard parameter table published by the Italian Ministry of Environment for 2021
- Scope 2 Location-based: Terna 2019
- Scope 2 Market-based: AIB 2020

2020

- Scope 1 fuels (gasoline, diesel, LPG, automotive hybrid): Defra 2020
- Scope 1 fuels (natural gas and diesel fuel for stationary combustion): national standard parameter table published by the Italian Ministry of Environment for 2020
- Scope 2 Location-based: Terna 2018
- Scope 2 Market-based: AIB 2019

Data on water withdrawals (and resulting water discharges) refer only to water withdrawals for the operation of hydroelectric power plants and are calculated as detailed within the NFS text.

TABLE LINKING MATERIAL TOPICS, GRI TOPICS, AND LEGISLATIVE DECREE 254/2016 TOPICS[116]

Topics of the decree	Material topics 2022	GRI indicators
Aspects pertaining to personnel management	Well-being and skills development	General Disclosures: GRI 2-7 (Employees); GRI 2-8 (Non-employees); Topic Specific Disclosures: GRI 202-2 (Proportion of senior managers hired from the local community); GRI 401-1 (New employee hires and employee turnover); GRI 401-2 (Benefits provided to full-time employees that are not provided to temporary or part-time employees); GRI 401-3 (Parental leave); GRI 402-1 (Minimum notice periods regarding operational changes) GRI 403-1 (Occupational health and safety management system); GRI 403-2 (Hazard identification, risk assessment, and incident investigation); GRI 403-3 (Occupational health services); GRI 403-4 (Worker participation, consultation and communication on occupational health and safety); GRI 403-5 (Worker training on occupational health and safety); GRI 403-8 (Workers covered by an occupational health and safety management system); GRI 403-9 (Work-related injuries); GRI 403-10 (Work-related ill health); GRI 404-1 (Average hours of training per year per employee); GRI 404-2 (Programs for upgrading employee skills and transition assistance); GRI 405-1 (Diversity of governance bodies and employees); GRI 405-2 (Ratio of basic salary and remuneration of women to men); GRI 406-1 (Incidents of discrimination and corrective actions taken)
Environmental issues	Reduction of CO_2 emissions (Scope 1 and 2)	Topic Specific Disclosures: GRI 302-1 (Energy consumption within the organisation); GRI 302-3 (Energy intensity); GRI 305-1 (Direct (Scope 1) GHG emissions); GRI 305-2 Energy indirect (Scope 2) GHG emissions; GRI 305-4 (GHG emissions intensity)
Environmental issues	Water resource management	Topic Specific Disclosures: 303-1 (Interaction with water as a shared resource); 303-2 (Management of water discharge-related impacts); 303-3 (Water withdrawal); 303-4 (Water discharge)
Environmental issues	Renewable energy production and mitigation of the impacts of the energy crisis	There are no Topic Specific GRIs related to this material topic
Social issues	Cybersecurity and data protection	Topic Specific Disclosures: 418-1 (Substantiated complaints concerning breaches of customer privacy and losses of customer data)
Environmental issues	Asset integrity and adaptation to climate change	There are no Topic Specific GRIs related to this material topic
Social issues	Trust, reputation and territorial anchoring	Topic Specific Disclosures: GRI 201-1 (Direct economic value generated and distributed); 204-1 (Proportion of spending on local suppliers); GRI 417-2 (Incidents of non-compliance concerning product and service information and labelling); GRI 417-3 (Incidents of non-compliance concerning marketing communications)
Social issues	Technological and service innovation	There are no Topic Specific GRIs related to this material topic
Environmental issues	Soil consumption, protection of biodiversity and landscape	Topic Specific Disclosures: GRI 304-1 (Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas); GRI 304-2 (Significant impacts of activities, products and services on biodiversity); GRI 304-4 (IUCN Red List species and national conservation list species with habitats in areas affected by operations).
Environmental issues	-	Topic Specific Disclosures: GRI 306-1 (Waste generation and significant waste-related impacts); GRI 306-2 (Management of significant waste-related impacts); GRI 306-3 (Waste generated); GRI 306-4 (Waste diverted from disposal); GRI 306-5 (Waste directed to disposal)
Fighting corruption	Trust, reputation and territorial anchoring	Topic Specific Disclosures: GRI 205-2 (Communication and training about anti-corruption policies and procedures); GRI 205-3 (Confirmed incidents of corruption and actions taken)

116 It should be noted that the issue related to respect for human rights, although provided for in Legislative Decree 254/2016, was not included among the material topics, considering the territorial, regulatory and business environment in which the Group operates. However, this issue is dealt with within the NFS because, as highlighted in the Code of Ethics and Conduct, the Group protects the respect, dignity and integrity of people, ensuring equal opportunities without any discrimination or prevarication.

Appendix

Workforce Data

GRI 2-7: EMPLOYEES

a. Employees by gender and region	2022					2021					2020				
	Women	Men	Other*	n.a.	Total	Women	Men	Other*	n.a.	Total	Women	Men	Other*	n.a.	Total
Total Italy*	167.68	476.6	-	-	**644.28**	142.71	454.4	-	-	**597.11**	139.84	440.4	-	-	**580.24**

*As a relevant region CVA identified Italy.

b. Employees by gender and region	2022					2021					2020				
	Women	Men	Other*	n.a.	Total	Women	Men	Other*	n.a.	Total	Women	Men	Other*	n.a.	Total
Number of permanent employees	163.68	468.6	-	-	**632.28**	135	450	-	-	**585**	133	439	-	-	**572**
Of which, full-time	155	468	-	-	623,	127.29	448.6	-	-	575.89	126.16	437.6	-	-	563.76
Of which, part-time	8.68	0.6	-	-	9.28	7.71	1.4	-	-	9.11	6.84	1.4	-	-	8.24
Number of fixed-term employees	4	8	-	-	12	0	3	-	-	3	0	0	-	-	0
Of which, full-time	4	8	-	-	12	0	3	-	-	3	0	0	-	-	0
Of which, part-time	0	0	-	-	0	0	0	-	-	0	0	0	-	-	0
Number of employees with non-guaranteed hours	0	0	-	-	0	0	0	-	-	0	0	0	-	-	0
Regional total	**167.68**	**476.6**	**0**	**0**	**644.28**	**135**	**453**	**0**	**0**	**588**	**133**	**439**	**0**	**0**	**572**

c. Methodologies and assumptions used to compile the data

The data reported in indicators 2.7 take a snapshot of the situation as at 31/12 each year.
Table 2-7a provides a snapshot of the numbers at 31/12 with reproportioning for full-time equivalence. For numerical analysis, the numbers of part-time workers without reproportioning for full-time equivalence are given below:
- **Year2022** Women: 11 - Men: 1
- **2021** Women: 10 - Men: 2
- **2020** Women: 9 - Men: 2

Table 2-7b gives a snapshot of the stock at 31/12 with reproportioning for full-time equivalence. See above for numerical analysis (without FTE). Full-time employees have not been included in the table because they are already included in the "open-ended" and "fixed-term" relationship types. Part-time employees all refer to "permanent" relationships and are shown with the reproportioning for full-time equivalence.

d. Contextual information needed to understand the data in 2-7-a and 2-7-b

The fixed-term relationships were entered into in accordance with national legislative provisions (Legislative Decree 81/2015). These mainly refer to "temporary and objective needs, unrelated to ordinary business" and/or "causal". In the latter case, the use of fixed-term contracts is prior to a subsequent offer of an open-ended contract.
Full-time employment is determined on the basis of the hours fixed by the CCNL applicable to employees. For the majority of staff it is 38 hours per week (CCNL electricity) while for management staff it is 40 hours per week. Managerial staff at 31/12 for the three years under analysis amounted to:
2022: 3
2021: 3
2020: 2
All part-time employees are governed by the CCNL for electrical workers (full-time 38 hours per week) and the reduced hours are the result of a specific employee request (for health and/or childcare)

e. Describe significant changes in the number of employees during and between reporting periods

In the years 2022 and 2021, the workforce of the Group's companies grew significantly as a result of the large recruitment budget approved to implement the CVA Group's Integrated Plan

GRI 2-8: NON-EMPLOYEES

a. Non-employees

Data as at 31/12 of each year - only data on staff with employment contracts and with coordinated and continuous collaboration contracts provided. In the calculation, the categories of "interns" and collaborators in "work experience" are excluded.
With regard to collaboration contracts, it is specified that collaborators work autonomously, without time constraints or subordination, except for the necessary functional coordination in the performance of activities.
Detail of administered staff/collaborators as at 31/12:

2022
Total non-employee workers: 16, of which
• Supplied: 13
• Employees: 3

2021
Total non-employee workers: 23, of which
• Supplied: 19
• Employees: 4

2020
Total non-employee workers: 24, of which
• Supplied: 21
• Employees: 3

b. Methodologies and assumptions used to compile the data

The figures shown in indicator 2-8th are head count and not FTE because for coordinated and continuous collaborators, the only persons who can be considered part-time, it is not possible to provide a % of part-time, collaborators perform services on project objectives and are not paid according to the hours worked. The contracted workers are all full-time, so there is no difference between head count and FTE.

c. Describe significant changes in the number of non-employee workers during and between reporting periods

From 2020 to 2022, there was a decrease in the use of temporary workers as a part of the positions occupied by temporary workers have been stabilised (hired against the Board of Directors' approval of the recruitment budget).

GRI 2-9: GOVERNANCE STRUCTURE AND COMPOSITION

a. Description of the governance structure, including committees of the highest governing body

Parent Company Board of Directors (elected in January 2022)
• Marco Cantamessa - Chairman of the Board of Directors
• Giuseppe Argirò - Managing Director
• Valeria Casali - Director
• Marzia Grand Blanc – Director
• Fabio Marra - Director

Board of Statutory Auditors
• Massimo Scarrone - Chairman of the Board of Statutory Auditors
• Federica Paesani - Standing Auditor
• Carmelo Marco Termine - Standing Auditor
• Cristina Betta - Alternate Auditor

Supervisory Body Legislative Decree 231/2001
• Vincenzo Scipioni - Chairperson of the Supervisory Board
• Nicola Distasi - Member of the Supervisory Body
• Federico Massa - Member of the Supervisory Body

Independent Auditors
• EY S.p.A.

b. List of committees of the highest governing body entrusted with the decision-making and oversight of the management of the organisation's impacts on the economy, environment and people

The tasks of the Board of Directors include the approval of the Non-Financial Statement and the Integrated Plan.

c. Composition of the highest governing body* 2022

• **Marco Cantamessa**: non-executive member, independent (2022-2024 term of office), male. In addition to his role in CVA, he holds 3 other positions.
• **Giuseppe Argirò**: executive member, employee (2022-2024 term of office), male.
• **Valeria Casali**: non-executive member, independent (2022-2024 term of office), female.
• **Marzia Grand Blanc:** non-executive member, independent (2022-2024 term of office), female.
• **Fabio Marra**: non-executive member, independent (2022-2024 term of office), male. In addition to his role in CVA, he holds another position.

*All board members have many years of experience in the renewables sector. They regularly participate in congresses, events and conferences related to sustainable development and write articles and studies on the subject. In addition, their activities include stakeholder engagement and the strategic integration of sustainability into the Integrated Business Plan.

c. Composition of the highest governing body* 2021

• **Marco Cantamessa**: non-executive member, independent (2019-2022 term of office), male. In addition to his role in CVA, he holds 3 other positions.
• **Giuseppe Argirò**: executive member, employee (2019-2020 term of office), male.
• **Monique Personnettaz**: non-executive member, independent (2019-2022 term of office), female. In addition to his role in CVA he holds another position
• **Marzia Grand Blanc:** non-executive member, independent (2019-2022 term of office), female.
• **Fabio Marra**: non-executive member, independent (2019-2022 term of office), male. In addition to his role in CVA, he holds another position.

*All board members have many years of experience in the renewables sector. They regularly participate in congresses, events and conferences related to sustainable development and write articles and studies on the subject. In addition, their activities include stakeholder engagement and the strategic integration of sustainability into the Integrated Business Plan.

c. Composition of the highest governing body* 2020

• **Marco Cantamessa**: non-executive member, independent (2017-2019 term of office), male. In addition to his role in CVA, he holds 3 other positions.
• **Enrico De Girolamo**: executive member, employee (2017-2019 term of office), male. In addition to his role in CVA, he holds 3 other positions.
• **Monique Personnettaz**: non-executive member, independent (2017-2019 term of office), female. In addition to his role in CVA he holds another position
• **Marzia Grand Blanc:** non-executive member, independent (2017-2019 term of office), female.
• **Fabio Marra**: non-executive member, independent (2017-2019 term of office), male. In addition to his role in CVA, he holds another position.

*All board members have many years of experience in the renewables sector. They regularly participate in congresses, events and conferences related to sustainable development and write articles and studies on the subject. In addition, their activities include stakeholder engagement and the strategic integration of sustainability into the Integrated Business Plan.

GRI 2-21: ANNUAL TOTAL COMPENSATION RATIO

a. Employees by gender and region	2022			2021		
	Highest pay	Median*	Report	Highest pay	Median*	Report
a. Annual total compensation ratio	€ 195,012.80	€ 39,199.61	**4.97**	€ 189,891.28	€ 38,322.19	**4.96**
b. Percentage increase in annual total compensation	2.70	2.29	**1.18**	6.61	2.83	**2.33**

*For all employees of the organisation except the highest paid individual.

c. Contextual information necessary to understand the data and how they were compiled
All employees (managers, middle managers, white-collar and blue-collar workers) in force at 31/12 of the years 2022, 2021, 2020 were taken into account, with the exception of one worker on leave for public office (for the years 2022 and 2021) and one worker on personal leave (for 2022)
• Part-time workers were counted as FTEs so wages were raised to 100% • The types of remuneration included are: fixed monthly remuneration at the top of the payslip, fixed elements in the body of the payslip, fringe benefits all (beyond the exemption), performance bonus for cash (pre-conversion) and MBO for cash, a contractual one-off (only for cash 2022) and fixed pay items for calculation with effects on 13th and 14th months' salary

GRI 2-29: APPROACH TO STAKEHOLDER ENGAGEMENT

(a.i) Stakeholder categories	a. (ii) Purpose of involvement	a. (iii) Significant involvement
Environment	• Protection of the environment and biodiversity • Responsible water use	• Memorandum of Understanding with the Fishing Consortium • Participation in round-table working groups to monitor the effects of climate change
Industry companies and competitors	• Respect for the rules • Transparency	• Press releases • Financial statements • Website • Sustainability report
Business partners	• Compliance with contractual commitments • Relationship continuity • Local investments	• Press releases • Website • Sustainability report • Financial statements
Customers	• Customer satisfaction • Transparency and responsible marketing • Privacy and data security • Asset security • Security of supply	• Customer service and other initiatives for dialogue with consumer Associations • Social communication channels • Branches on the territory • Advertising campaigns • Sustainability report
Community	• Asset security • Support for solidarity initiatives • Relations with the local area • Local investments and support for the entrepreneurial environment • Quality employment	• Press releases • Initiatives dedicated to the territory • Guided tours of the plants • Sustainability report • Financial statements
Control and regulatory bodies	• Customer satisfaction • Security of supply	• Communications to ARERA • Website • Financial statements • Sustainability report
Suppliers	• Compliance with contractual commitments • Relationship continuity • Local investments	• Supplier area portal on the website • Sustainability report • Financial statements
Institutions and trade associations	• Compliance with the law • Privacy and data security • Economic and financial sustainability	• Press releases • Website • Sustainability report • Financial statements
Financial institutions	• Compliance with contractual commitments and continuity of relationship • Innovation in financial instruments • ESG Rating	• Disclosure transparency • Sustainability-linked loan • Issuance of listed bonds
Media	• Economic and financial sustainability • Respect for the rules • Attention to worker health and safety • Environmental protection • Asset integrity • Relations with the local area • Transparency	• Press releases • Website • Sustainability report • Financial statements
Market	• Economic and financial sustainability • Value creation • Corporate governance • Respect for the rules • Attention to worker health and safety • Environmental protection • Asset integrity • Relations with the local area • Transparency	• Press releases • Advertising campaigns • Sustainability report • Financial statements
People	• Economic and financial sustainability • Skills enhancement • Work/life balance • Equal opportunities • Occupational health and safety • Transparency • Public competitions	• Training • Intranet • Corporate Convention Insieme (*Together*) • Sustainability report • Financial statements

GRI 202-2: PROPORTION OF SENIOR MANAGEMENT HIRED FROM THE LOCAL COMMUNITY

a. Senior managers hired by the local community	2022	2021	2020
	Operational office 1	Operational office 1	Operational office 1
Total senior managers	3	3	2
Senior managers employed in the local community	3	3	2
Senior managers employed in the local community (%)	**100%**	**100%**	**100%**

b. Definition of senior manager
CVA defines Senior Manager as someone with management qualifications

c. Definition of local with respect to the organisation's premises
For Local CVA considers the figures resident in the Region of Aosta Valley

d. Definition of significant operational location
The operational sites shown represent all the operational sites of the CVA Group:
Operational Office 1: CVA_CVAEO Châtillon registered office
Operational Office 2: Deval Aosta registered office
Operational Office 3: all other peripheral offices (other operating offices outside the municipality head office: operating offices Pont St. Martin-Châtillon-Avise, teams Verres-Pré St. Didier, branches Pont St. Martin-Aosta-Morgex)

GRI 205-2: COMMUNICATION AND TRAINING ABOUT ANTI-CORRUPTION POLICIES AND PROCEDURES

a. Communication of anti-corruption procedures, governance bodies	2022 Italy			2021 Italy			2020 Italy		
	Total members (n)	Informed members (n)	% informed members	Total members (n)	Informed members (n)	% informed members	Total members (n)	Informed members (n)	% informed members
Governance bodies	5	5	**100%**	5	5	**100%**	5	5	**100%**

b. Communication of anti-corruption procedures employees	2022 Italy			2021 Italy			2020 Italy		
	Total employees (n)	Informed employees (n)	Informed employees (%)	Total members (n)	Informed members (n)	Informed employees (%)	Total members (n)	Informed members (n)	Informed employees (%)
Executives	3	3	**100%**	3	3	**100%**	2	2	**100%**
Managers	46	46	100%	44	44	100%	45	45	100%
White collars	254	254	100%	218	218	100%	215	215	100%
Blue collars	131	131	100%	133	133	100%	124	124	100%
Total	**434**	**434**	**100%**	**398**	**398**	**100%**	**386**	**386**	**100%**

c. Communicating anti-corruption procedures to business partners	2022 Italy			2021 Italy			2020 Italy		
	Total members (n)	Informed members (n)	% informed members	Total members (n)	Informed members (n)	% informed members	Total members (n)	Informed members (n)	% informed members

Currently, anti-corruption procedure policies are not communicated to business partners

d. Training about anti-corruption procedures, governance bodies	2022 Italy			2021 Italy			2020 Italy		
	Total members (n)	Informed members (n)	% informed members	Total members (n)	Informed members (n)	% informed members	Total members (n)	Informed members (n)	% informed members
HE governance bodies	5	0	**0%**	5	1	**20%**	5	1	**20%**

e. Training about anti-corruption procedures, employees	2022 Italy			2021 Italy			2020 Italy		
	Total employees (n)	Informed employees (n)	Informed employees (%)	Total members (n)	Informed members (n)	Informed employees (%)	Total members (n)	Informed members (n)	Informed employees (%)
Executives	3	0	**0%**	3	3	**100%**	2	0	**0%**
Managers	46	2	4%	44	19	43%	45	0	0%
White collars	254	69	27%	218	198	91%	215	0	0%
Blue collars	131	13	10%	133	0	0%	124	0	0%
Total	**434**	**84**	**19%**	**398**	**220**	**55%**	**386**	**0**	**0%**

GRI 401-1: NEW EMPLOYEE HIRES AND EMPLOYEE TURNOVER*

Total recruitments and terminations (n)	2022	2021	2020
a. Employees hired by gender			
Of which men	30	24	11
Of which women	27	7	7
a. Employees hired by age			
< 30 years old	15	14	4
30-50 years old	38	11	14
> 50 years old	4	6	0
TOTAL RECRUITMENT	**57**	**31**	**18**
b. Terminated employees by gender			
Of which men	8	10	7
Of which women	2	4	2
b. Employees terminated by age			
< 30 years old	0	0	1
30-50 years old	5	3	1
> 50 years old	5	11	7
TOTAL TERMINATIONS	**10**	**14**	**9**
Recruitment and turnover rate (%)	**2022**	**2021**	**2020**
a. Rate of employees hired by gender			
Of which men	4.6%	4%	1.8%
Of which women	4.2%	1.2%	1.2%
a. Rate of employees hired by age			
< 30 years old	2.3%	2.3%	0.7%
30-50 years old	5.9%	1.8%	2.4%
> 50 years old	0.6%	1%	-
TOTAL EMPLOYEES	**647**	**600**	**583**
Total hiring rate	**8.8%**	**5.2%**	**3.1%**

Recruitment and turnover rate (%)	2022	2021	2020
b. Rate of terminated employees by gender			
Of which men	1.2%	1.6%	1.2%
Of which women	0.3%	0.7%	0.3%
b. Rate of terminated employees by age			
< 30 years old	-	-	0.2%
30-50 years old	0.8%	0.5%	0.2%
> 50 years old	0.8%	1.8%	1.2%
TOTAL EMPLOYEES	**647**	**600**	**583**
Total turnover rate	**1.5%**	**2.3%**	**1.5%**

*All recruitments and terminations took place in the geographical area Region Aosta Valley

GRI 401-2: BENEFITS PROVIDED TO FULL-TIME EMPLOYEES THAT ARE NOT PROVIDED TO TEMPORARY OR PART-TIME EMPLOYEES

a. Standard benefits	Operational Office 1	Operational Office 2	Operational Office 3
Life insurance	Yes	Yes	Yes
Healthcare*	Yes	Yes	Yes
Insurance cover in the event of disability and invalidity	Yes	Yes	Yes
Parental leave	Yes**	Yes**	Yes**
Pension contributions	Yes (**)	Yes (**)	Yes (**)
Shareholding	no	no	no
Recreational Association, only after passing probationary period and supplementary pension only if enrolled in the Fund	Yes	Yes	Yes

b. Definition of significant operational location

The operational sites shown represent all the operational sites of the CVA Group:
- Operational Office 1: CVA_CVAEO Châtillon registered office
- Operational Office 2: Deval Aosta registered office
- Operational Office 3: all other peripheral locations (other operating offices outside the municipality head office: operating offices Pont St. Martin-Châtillon-Avise, teams Verres-Pré St. Didier, branches Pont St. Martin-Aosta-Morgex

Benefits are understood as corporate welfare and not fringe benefits
* Only available after successful completion of trial period
** In Italy, parental leave is provided for by national law. Not a corporate choice
(**) In Italy, pension contributions are provided for by national law. Not a corporate choice

GRI 401-3: PARENTAL LEAVE

Parental leave	2022			2021			2020		
	Men	Women	Total	Men	Women	Total	Men	Women	Total
a. Employees entitled to parental leave	187	68	**255**	148	48	**196**	164	56	**220**
b. Employees who have taken parental leave	31	27	**58**	23	24	**47**	20	21	**41**
c. Employees returning to work after parental leave	31	27	**58**	23	24	**47**	20	21	**41**
d. Employees who returned to work and who are employees in the following 12 months	23	24	**47**	20	20	**40**	-	-	**0**
e. Return rate	**100**	**100**	**100**	**398**	**398**	**100%**	**386**	**386**	**100%**
e. Retention rate	**100.00**	**97.56**	**-**	**398**	**398**	**100%**	**386**	**386**	**100%**

Information needed to calculate the return and retention rate	2022	2021	2020
Total number of employees who should have returned to work after taking parental leave	58	47	41
Total number of employees returned to work following parental leave in the previous reporting period(s)	47	41	-

Contextual information needed to understand the data and how they were compiled

a. Individuals entitled to parental leave are those who have children up to the age of 8 years in the years 2020 and 2021 and 12 years in the year 2022 as per regulatory changes. In the entitlement, no account is taken of whether all paid or unpaid leave has already been taken (total between spouses max. 10 or 11 months), which is only available to the Inps as the leave authority

b. Employees who have had parental leave (paid or unpaid) during the year

c. There were no terminations due to repercussions from taking parental leave

d. Refers to the re-entry in the next 12 months of those who benefited in the previous year (i.e. those who benefited in 2021 and terminated 2022). Figures for 2020 have not been included because they refer to those who took leave in 2019

GRI 402-1: MINIMUM NOTICE PERIODS REGARDING OPERATIONAL CHANGES

a. Minimum weeks' notice	2022	2021	2020
Number of weeks' notice given to employees	4.29	4.29	4.29

b. Inclusion of the minimum notice period in collective agreements

Deadlines are defined by the CCNL (30 days)

GRI 403-1: OCCUPATIONAL HEALTH AND SAFETY MANAGEMENT SYSTEM

a. implementation of an occupational health and safety management system

The companies CVA, CVA ENERGIE, CVA Eos, Deval have adopted an Integrated Management System (IMS) that, with regard to occupational health and safety aspects, complies with the ISO 45001:2018 standard

b. Description of workers, activities and workplaces covered by the occupational health and safety management system, and justification where workers are not covered

For each CVA, CVA ENERGIE, CVA Eos company, the relevant scope is defined within the Management Document of the IMS. For CVA "Production of electrical energy from renewable sources: hydroelectric, wind, photovoltaic" for CVA ENERGIE "Marketing of electrical energy", for CVA Eos "Production of electrical energy from renewable sources: wind and photovoltaic" for Valdigne Energie "Production of electrical energy from renewable sources hydroelectric", for Deval "Electricity distribution through the phases of: management/operation, extension and maintenance of HV, MV, LV and remote control electricity networks; commercial services related to electricity transport and connection of end customers and producers; electricity balance measurement and processing services. Managing the effects of adverse weather/environmental conditions in order to ensure service continuity."

GRI 403-2: HAZARD IDENTIFICATION, RISK ASSESSMENT, AND INCIDENT INVESTIGATION

a. Processes for identifying and assessing occupational health and safety risks

For all companies CVA, CVA ENERGIE, CVA Eos, Deval, a Risk Assessment Document (DVR) has been drawn up in accordance with current legislation. It analyses the hazards arising from the work performed and the risk mitigation measures implemented by the companies. In addition to this, the analysis and management of new health and safety risks may result from audits and inspections carried out by the company's RSPP/ASPP (in possession of the qualifications required by law) within the framework of the IMS, from reports received from workers (see paragraph b)

b. Processes available to workers to report hazards and dangerous situations at work, and an explanation of how workers are protected from retaliation

Workers can send their reports through the "reporting forms" provided by the IMS, possibly also anonymously

c. A description of the policies and processes available to workers to remove themselves from work situations that are believed to cause work-related injury or illness, and an explanation of how they are protected from retaliation

The worker implements the provisions of the DVR and the maintenance order if provided for, the supervisor suspends the activity in the event of serious and immediate danger and reports to his/her superior any problems that could lead to injury or occupational illness

d. Description of the processes used to investigate possible occupational accidents

Use of appropriate company procedure (POS.SGI 12, P 13.01 and I 11.01 Deval) for accident and near miss investigations

GRI 403-3: OCCUPATIONAL HEALTH SERVICES

a. Description of occupational medicine services

The employers of the companies CVA, CVA ENERGIE, CVA Eos and Deval have appointed a competent doctor for each company who meets the requirements laid down by law (Legislative Decree 81/2008). The appointed professional has drawn up a health protocol for the various company tasks, which contains the types of health examinations and/or assessments necessary for the formulation of the judgment of suitability for the job. Sensitive health information is kept by the competent doctor

GRI 403-4: WORKER PARTICIPATION, CONSULTATION AND COMMUNICATION ON OCCUPATIONAL HEALTH AND SAFETY

a. Description of processes of participation in occupational health and safety management systems

Worker participation in health and safety processes is ensured through regular meetings with the company's RLS (Workers' Safety Representatives). Worker training and instruction is provided at the time of recruitment and prior to each new assignment in line with current legal requirements. Information to workers is conveyed through e-mails, staff communiqués, documents available on the company intranet or specific training meetings

b. Description of formal joint management-worker health and safety committees

A bilateral training, health and safety commission composed of company representatives (including company RSPPs) and trade union representatives is established for CVA Group companies

GRI 403-5: WORKER TRAINING ON OCCUPATIONAL HEALTH AND SAFETY

a. Description of training activities

Training is provided upon entry of all workers into the company, differentiated according to the risk job the worker holds. The courses are mainly delivered face-to-face or remotely and include tests to verify learning. Training is provided for each new position the employee holds. The training required by law is organised directly by the company's SPP, also using forms of financing derived from joint bodies and also taking care of subsequent updates. The remaining training is initiated by the company structures at the request of the function/office managers. Training takes place during working hours, at the company's expense

GRI 403-8: WORKERS COVERED BY AN OCCUPATIONAL HEALTH AND SAFETY MANAGEMENT SYSTEM

a. Health and safety management system	2022		2021		2020	
	n	%	n	%	n	%
i. Employees covered by the system	647	100	617	100	592	100
i. Non-employees covered by the system	16	100	28	100	26	100
ii. Employees covered by the internally audited system	647	100	617	100	592	100
ii. Non-employees covered by the internally audited system	16	100	28	100	26	100
iii. Employees covered by the third-party certified system	647	100	617	100	592	100
ii. Non-employees covered by the third-party certified system	16	100	28	100	26	100

b. Any workers excluded from the coverage of the management system

Workers are all included

c. Additional information on data compilation

Indices calculated from hours worked

GRI 403-9: WORK-RELATED INJURIES

a. Employees	2022				2021				2020			
	CVA	CVA Energie	Deval	CVA Eos	CVA	CVA Energie	Deval	CVA Eos	CVA	CVA Energie	Deval	CVA Eos
Number of recordable accidents (excluding commuting accidents)	4	0	1	0	1	0	3	0	2	1	1	N/A
Number of injuries with serious consequences	0	0	0	0	0	0	0	0	0	0	0	N/A
Total employee hours worked	660,411.78	97,527.36	222,385.71	7,754.95	630,561.03	97,129.64	219,273.50	876.59	627,342	98,581.76	22,6035.46	N/A
Gravity index	0.1	0	0.01	0	0.03	0	0.62	0	0.05	1.35	4.2	N/A
Frequency index	6.06	0	4.5	0	1.59	0	13.68	0	3.19	10.14	0.06	N/A

b. Non-employees	2022				2021				2020			
	CVA	CVA Energie	Deval	CVA Eos	CVA	CVA Energie	Deval	CVA Eos	CVA	CVA Energie	Deval	CVA Eos
Number of recordable accidents (excluding commuting accidents)	0	0	0	0	0	0	0	0	0	1	0	N/A
Number of injuries with serious consequences	0	0	0	0	0	0	0	0	0	0	0	N/A
Total employee hours worked	17,371.3	652.83	2,348.2	4,631.03	26,901.77	6,452.65	671	779.93	21,608.401	10,655.53	0	N/A
Gravity index	0	0	0	0	0	0	0	0	0	0	0	N/A
Frequency index	0	0	0	0	0	0	0	0	0	0	0	N/A

c. Occupational hazards constituting a risk of accident with serious consequences

The risk assessment process is carried out within each Risk Assessment Document of the companies CVA, CVA ENERGIE, CVA Eos, Deval. The hazards of each work activity carried out by workers that could potentially generate accidents are identified, followed by an assessment of the associated risk and the prevention and protection measures that the company introduces to minimise risks

d. Actions taken or in progress to eliminate other hazards at work and minimise risks using the hierarchy of controls

Risk reduction measures identified in company DVRs can be either structural, organisational or through information, education and training for the workers concerned

e. Calculation of severity, incidence and accident rates

The method used to calculate the rates referred to in the disclosure is *1,000,000

f. Exclusions of certain workers from the disclosure

Workers are all included

GRI 403-10: WORK-RELATED ILL HEALTH

a. Dependent occupational illnesses (n)	2022	2021	2020
Deaths resulting from occupational illnesses	0	0	0
Recordable occupational illnesses	0	0	0
Main types of occupational illnesses	0	0	0

b. Non-employee occupational illnesses (n)	2022	2021	2020
Deaths resulting from occupational illnesses	0	0	0
Recordable occupational illnesses	0	0	0
Main types of occupational illnesses	0	0	0

c. Occupational hazards constituting a risk of occupational disease

The risk assessment process is carried out within each Risk Assessment Document of the companies CVA, CVA ENERGIE, CVA Eos, Deval. The hazards of each work activity carried out by workers that can potentially lead to occupational illnesses are identified, followed by an assessment of the associated risk and the prevention and protection measures that the company puts in place to minimise the risks.

d. Exclusions of certain workers from the disclosure

No exclusion

e. Contextual information needed to understand the data and how they were compiled

No events recorded in the years 2020-2021-2022

GRI 404-1: AVERAGE HOURS OF TRAINING PER YEAR PER EMPLOYEE

a. Average hours of training provided to employees	2022			2021			2020		
	Men	Women	Total	Men	Women	Total	Men	Women	Total
Executives	13.67	0	**13.67**	18.67	0	**18.67**	3.50	0	**3.50**
Managers	42.97	35.48	**41.70**	48.05	51.23	**48.60**	17.96	6.15	**15.68**
White collars	29.37	15.23	**23.92**	23.29	15.41	**20.21**	13.96	8.52	**11.81**
Blue collars	28.70	0	**28.70**	18.57	0.00	**18.57**	9.76	0.00	**9.76**
Total	**30.53**	**16.56**	**26.96**	**24.25**	**17.96**	**22.67**	**12.74**	**8.340**	**11.60**

GRI 404-2: PROGRAMS FOR UPGRADING EMPLOYEE SKILLS AND TRANSITION ASSISTANCE

a./b. List of training programmes

2022	2021	2020
In 2022, CVA provided a series of programmes to enhance the skills of its employees and facilitate work continuity for a combined total of 7,201.88 hours. Given the large number of such programmes, only the main ones are listed below, broken down by the following macro-areas: - Regulatory compliance (e.g. GDPR, OdV - Supervisory Body -, Legislative Decree 81/08, cyber security, etc.) - Professional refresher courses by function (e.g. penstocks, polluted site remediation, georadar, energy communities, etc.) - Personal and digital skills courses (e.g. finance, leadership, public speaking, languages, excel, new computer systems training etc.) - Occupational health and safety courses (e.g. machine safety, industrial security, etc.) - Welfare (e.g. employee welfare, smart working, etc.)	In 2021, CVA provided a series of programmes to enhance the skills of its employees and facilitate work continuity for a combined total of 6,342 hours. Given the large number of such programmes, only the main ones are listed below, broken down by the following macro-areas: - Regulatory compliance (e.g. conflicts of interest, privacy, anti-corruption, Law 90/2012, industry regulations, cybersecurity - 5G etc.) - Professional refresher courses by function (e.g. sediment management, major works, hydromorphology, energy communities, energy transition process, etc.) - Personal and digital skills courses (e.g. Power BI, Microsoft, French and English language courses etc.) - Occupational health and safety courses (F-Gas, evolution of safety regulations, accidents at work, etc.) - Welfare (personnel selection competitions, e-invoicing, agile working, etc.)	In 2020, CVA provided a series of programmes to enhance the skills of its employees and facilitate work continuity for a combined total of 3,324.19 hours. Given the large number of such programmes, only the main ones are listed below, broken down by the following macro-areas: - Professional refresher courses by function (e.g. dams, maintenance and optimisation of photovoltaic plants, energy communities, etc.) - Regulatory compliance (e.g. 231 compliance, privacy and whistleblowing, cybersecurity, anti-corruption, 45001:2018 standard training, etc.) - Personal and digital skills courses (e.g. Adobe Illustrator, public speaking, team work, etc.) - Occupational health and safety courses (e.g. accident prevention, chain of responsibility, etc.) - Welfare (e.g. Covid-19 and the role of company representatives, agile working, etc.)

GRI 405-1: DIVERSITY OF GOVERNANCE BODIES AND EMPLOYEES

a. Members of the Board of Directors CVA S.p.A.	2022			2021			2020		
	Men	Women	Total	Men	Women	Total	Men	Women	Total
< 30 years old	-	-	**0**	-	-	**0**	-	-	**0**
30 - 50	1	2	**3**	1	2	**3**	1	2	**3**
> 50	2	-	**2**	2	-	**2**	2	-	**2**
Total	**3**	**2**	**5**	**3**	**2**	**5**	**3**	**2**	**5**

a. Members of the Board of Statutory Auditors CVA S.p.A.	2022			2021			2020		
	Men	Women	Total	Men	Women	Total	Men	Women	Total
< 30 years old	-	-	**0**	-	-	**0**	-	-	**0**
30 - 50	-	1	**1**	1	2	**3**	1	2	**3**
> 50	2	1	**3**	2	-	**2**	2	-	**2**
Total	**2**	**2**	**4**	**3**	**2**	**5**	**3**	**2**	**5**

a. Members of the Supervisory Body CVA S.p.A.	2022			2021			2020		
	Men	Women	Total	Men	Women	Total	Men	Women	Total
< 30 years old	-	-	**0**		-	**0**	-	-	**0**
30 - 50	1		**1**	1	-	**1**	1	-	**0**
> 50	2		**2**	2	-	**2**	2	-	**0**
Total	**3**	**-**	**3**	**3**	**-**	**3**	**3**	**-**	**0**

b. Employees	2022			2021			2020		
	Men	Women	Total	Men	Women	Total	Men	Women	Total
< 30 years old	-	-	**0**		-	**0**	-	-	**0**
30 - 50	1		**1**	1	-	**1**	1	-	**0**
> 50	2		**2**	2	-	**2**	2	-	**0**
Total	**3**	**-**	**3**	**3**	**-**	**3**	**3**	**-**	**0**

b. Employees	2022				2021				2020			
	Men	Women	other (specify)	Total	Men	Women	other (specify)	Total	Men	Women	other (specify)	Total
Executives	3	-	-	**3.00**	3	-	-	**3**	2	-	-	**2**
Managers	54	11	-	65.00	52	11	-	63	50	12	-	62
White collars	237	156.68	-	393.68	218	131.71	-	349.71	217	127.84	-	344.84
Blue collars	182.6	-	-	182.60	181.4	-	-	181.4	171.4	-	-	171.4

b. Employees	2022				2021				2020			
	< 30 years old*	30 – 50 years old	> 50	Total	> 30 years old	30 – 50 years old	> 50	Total	> 30 years old	30 – 50 years old	> 50	Total
Executives	-	-	3	**3**	-	-	3	**3**	-	-	2	**2**
Managers	-	37	28	65	-	38	25	63	-	41	21	62
White collars	23	263.36	107.32	393.68	13	241.73	94.98	349.71	15	245.73	84.11	344.84
Blue collars	16	139	27.6	182.6	16	136.8	28.6	181.4	9	135.8	26.6	171.4

* Age was calculated in the same way as for the figure in the annual report (only on year of birth/reference)

GRI 405-2: RATIO OF BASIC SALARY AND REMUNERATION OF WOMEN TO MEN

a. Ratio of basic wage and salary of women to men*	2022		2021		2020	
	Basic salary	Remuneration	Basic salary	Remuneration	Basic salary	Remuneration
Executives	0.00	0.00	0.00	0.00	0.00	0.00
Managers	104.62	100.08	102.79	99.81	101.94	101.10
White collars	95.96	88.21	96.27	89.52	96.47	89.98
Blue collars	0.00	0.00	0.00	0.00	0.00	0.00

b. Indicate the definition used for "significant operational sites"
A significant operating site is defined as the Region of Aosta Valley. It should also be noted that all employees (managers, middle managers, white-collar and blue-collar workers) in force as at 31 December of each year were taken into account, with the exception of one worker on leave for public office (for the years 2022 and 2021) and one worker on personal leave (for 2022 only).

*The average basic salary and the average remuneration were calculated on what was actually owed by the CCNL and actually paid, in the year under analysis, to the population that was in force on 31 December of each year.

GRI 406-1: INSTANCES OF DISCRIMINATION AND CORRECTIVE ACTIONS TAKEN

a. Instances of discrimination and corrective actions taken	2022	2021	2020
Total instances of discrimination	0	0	0

b. Status of incidents and actions taken
No incidents of discrimination occurred during the three-year period.

Environmental Data

GRI 302-1: ENERGY CONSUMPTION WITHIN THE ORGANISATION

	Unit of measurement	2022	2021	2020
a. Direct energy consumption from non-renewable sources				
Methane gas	MWh	312	512	479
Diesel	MWh	2,628	1,992	2,203
Gasoline	MWh	103	69	58
Hybrid-petrol fuel	MWh	120	28	31
Hybrid-diesel fuel	MWh	57		
LPG	MWh	2	6	6
Total	**MWh**	**3,222**	**2,607**	**2,777**
b. Direct consumption of energy from renewable sources				
Hydroelectric (self-consumption)	MWh	21,807	26,304	33,757
Photovoltaics (self-consumption)	MWh	197	290	306
Wind power (self-consumption)	MWh	4,062	4,581	4,169
Total	**MWh**	**26,066**	**31,175**	**38,232**
c. Indirect energy consumption (purchase)				
From non-renewable sources	MWh	1,430	1,969	1,813
Certified from renewable sources	MWh	10,902	10,142	9,656
District Heating	MWh	152	281	289
Total	**MWh**	**12,484**	**12,392**	**11,758**
d. Energy consumed within the organisation				
Total energy consumption from non-renewable sources	GJ	17,294	17,484	17,565
Total energy consumption from renewable sources	GJ	133,086	148,739	172,397
Total	**GJ**	**150,380**	**166,223**	**189,962**

e. Standards and methodologies used

For the three-year period, the calculation boundary for energy consumption data, in continuity with previous years, includes the total data of the Group and its subsidiaries as at 31 December 2022

f. Source of conversion factors used

Greenhouse gas reporting conversion factors 2022 (https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2022)

GRI 302-3: ENERGY INTENSITY

a. - b. Energy intensity	Unit of measurement	2022	2021	2020
Absolute energy consumption	MWh	41,772	46,173	52,767
Installed power	MW	1105	1105	1105
Energy intensity (consumption/power)	**MWh/MW**	**37.80**	**41.8**	**47.8**

c. Type of material

Fuel (methane, diesel, petrol, hybrid, LPG), electricity, steam

d. Calculation

The calculation of energy intensity considers energy consumption within the organisation

GRI 304-1: OPERATIONAL SITES OWNED, LEASED, MANAGED IN, OR ADJACENT TO, PROTECTED AREAS AND AREAS OF HIGH BIODIVERSITY VALUE OUTSIDE PROTECTED AREAS

a. Operational sites

Operational site name managed in (or adjacent to) protected areas and areas of high biodiversity value (including future activities)	i. Geographical area	ii. Underground and proprietary land	iii. Location in relation to the protected area (within, adjacent to or containing portions)	iv. Type of activity	v. Size of operational site (km2)	vi. Biodiversity value of the area	vii. Biodiversity value under protection regimes
Intake - C.le Aymavilles	it 1205030 - Pont d'Ael	yes	within	diversion work	0.0013	terrestrial ecosystem	Natura 2000 site
La Salle Reservoir - Champagne2	Marais di Morgex and La Salle	no	within	diversion work	0.0335	freshwater ecosystem	protected area - regional legislation
Natura 2000 site	237	156.68	-	393.68	218	131.71	
Gran Lago Modulation Lake - C.le Champdepraz	Mont Avic Natural Park	no	within	modulation lake	0.18	terrestrial ecosystem	regional park
Fenille diversion - canal - C.le Chavonne	Gran Paradiso Natural Park	yes	within	diversion work - canal	0.007	terrestrial ecosystem	national park
Canal from La Nouva diversion - C.le Chavonne	Gran Paradiso Natural Park	yes	within	channel	0.008	terrestrial ecosystem	national park
Canal from La Nouva diversion - C.le Chavonne	it 1205030 - Pont d'Ael	yes	within	channel	0.0008	terrestrial ecosystem	Natura 2000 site
Rhemes diversion canal - C.le Champagne I	Gran Paradiso Natural Park	yes	within	channel	0.0008	terrestrial ecosystem	national park
Covalou diversion canal - C.le Châtillon	en 1205090 - Xeric environments of Grand Brison and Cly	yes	within	channel	0.0007	terrestrial ecosystem	Natura 2000 site
Miserin regulation lake - Hône2	Mont Avic Natural Park	no	within	modulation lake	0.16	terrestrial ecosystem	regional park
Vercoche regulation lake - Hône2	en 1202020 - Mont Avic and Mont Emilius	no	within	modulation lake	0.06	terrestrial ecosystem	Natura 2000 site
Brenve intake - channel - Hônell	en 1202020 - Mont Avic and Mont Emilius	yes	within	diversion work	0.002	terrestrial ecosystem	Natura 2000 site
Montagnayes Secondary Intake - C.le Valpelline	Montagnaya Reserve	yes	within	diversion work	0.001	terrestrial ecosystem	protected area - regional legislation

GRI 304-2: SIGNIFICANT IMPACTS OF ACTIVITIES, PRODUCTS AND SERVICES ON BIODIVERSITY

a. Description of significant impacts (direct and indirect) on biodiversity	
Renewable energy production	Production of energy from renewable sources
Infrastructure construction	Construction site set-up
Habitat reduction	Water diversion - loss of river continuity
	Area occupied by infrastructure (Plants - photovoltaic)
Soil loss	Area occupied by infrastructure (Plants - photovoltaic)
Possible impact on migration routes	Wind

b. Impacts						
Description of the impact	**Direct/indirect**	**Positive/ Negative**	**i. Species concerned**	**ii. Size of the area concerned**	**iii. Duration of impact**	**iv. Reversibility /Irreversibility of impact**
Renewable energy production	indirect	positive	all species threatened by Climate Change	global	when plants in operation	reversible
Hydroelectricity: habitat reduction - loss of continuity	direct	negative	fish species	stretches of riverbed underlying the diversions	when plants in operation	reversible
Photovoltaics: soil loss	direct	negative	plant and animal species	areas affected by infrastructure	in the presence of infrastructure	reversible
Wind power: possible impact on migration routes	direct	negative	avifauna	areas affected by infrastructure	in the presence of infrastructure	reversible
Construction of new plants-ecosystems initiatives	direct	negative	plant and animal species	construction site/ infrastructure areas	in the presence of construction sites and infrastructure	reversible
Construction of new plant-quarrying material management	direct	negative/ positive	plant and animal species	site/neighbouring areas	in the presence of a construction site	reversible
Construction of new installations-noise	direct	negative	animal species	areas adjacent to the construction site	during the course of some works	reversible
Construction of new installations-vibrations	direct	negative	animal species	areas adjacent to the construction site	during the course of some works	reversible
Construction of new plants-air pollution	direct	negative	plant and animal species	areas adjacent to the construction site	during the course of some works	reversible
Construction of new plant-moving equipment	direct	negative	plant and animal species	roads affected by the construction site	during plant construction	reversible
New plant construction - material storage	direct	negative	plant and animal species	site areas	during plant construction	reversible
Brenve intake - channel - Hônell	en 1202020 - Mont Avic and Mont Emilius	yes	within	diversion work	0.002	terrestrial ecosystem
Montagnayes Secondary Intake - C.le Valpelline	Montagnaya Reserve	yes	within	diversion work	0.001	terrestrial ecosystem

GRI 304-4: IUCN RED LIST SPECIES AND NATIONAL CONSERVATION LIST SPECIES WITH HABITATS IN AREAS AFFECTED BY OPERATIONS

Habitat name	a. Total number of IUCN Red List species and national conservation lists
	Number
i. Critically endangered ppecies	5
ii. Endangered species	7
iii. Vulnerable species	15
iv. Nearly endangered species	14
v. Species of minor concern	67
Total	**108**

GRI 305-1: DIRECT (SCOPE 1) GHG EMISSIONS

Direct (Scope 1) emissions	2022	2021	2020
From stationary combustion	369	337	321
From combustion of fuels in owned vehicles	339	306	108
From fugitive emissions	-	-	-
Total	**708**	**643**	**429**

GRI 305-2: ENERGY INDIRECT (SCOPE 2) GHG EMISSIONS

Indirect (Scope 2) emissions - Market Based	2022	2021	2020
Electricity	653	903	831
District Heating	26	48	49
Total	**679**	**951**	**881**
Indirect (Scope 2) emissions - Location Based	**2022**	**2021**	**2020**
Electricity	3,885	3,815	3,613
District Heating	26	48	49
Total	**3,910**	**3,863**	**3,662**

GRI 305-4: GHG EMISSIONS INTENSITY

a./b. Emission intensity	Unit of measurement	2022		2021		2020	
		Market-Based	Location-Based	Market-Based	Location-Based	Market-Based	Location-Based
Total emissions	tCO_2	1,387	4,619	1,594	4,506	1,310	4,091
Installed power	MW	1,105	1,105	1,105	1,105	1,105	1,105
Emission intensity	**tCO_2/MW**	**1.26**	**4.18**	**1.44**	**4.08**	**1.19**	**3.70**

c. Types of GHG emissions including emission intensity rate
Direct (Scope 1) and indirect (Scope 2) emissions from energy consumption

d. Gases included in the calculation
CO_2 and CO_2 equivalent of petrol, methane, diesel

GRI 305-5: REDUCTION OF GHG EMISSIONS

a. Reduction of GHG emissions	2022
"Insieme" (Together) event	7.86
Bouldering Kids	2.02
Diverse Bici (Diverse bikes)	0.14
eBike Tour Evolution	0.8
Show Cooking	6.95
Mostra goccia a goccia (drop by drop show)	1.37
Using Deval electric cars	4.73
Expansion of CVA S.p.A.'s company car fleet with the addition of a further 13 plug-in petrol cars, 2 plug-in diesel cars, a mild-hybrid diesel car and a full electric car	
Expansion of CVA Energie's company car fleet by adding an additional plug-in petrol car	
A service contract was signed with Duferco to facilitate the recharging of electric and/or plug-in hybrid cars outside the company's premises, and each such vehicle was provided with a recharging card	
Implementation of the system inside the garages (Aosta and Châtillon) with the installation of additional charging stations to encourage the use of electric and/or plug-in hybrid cars. The project started in the year 2022 and the installation was completed in the first half of January 2023. The following have been added: - 17 wallboxes in the garage in Châtillon - 5 wallboxes in the garage in Aosta	
Creation of charging points for employee use within the areas of the company premises in order to encourage the use of electric and/or plug-in hybrid cars by employees. The project started in the year 2022 and the installation was completed in the first half of January 2023. The following were installed: - 4 charging points at the headquarters in via Stazione 31, Châtillon - 4 charging points at the headquarters in via Stazione 30/32, Châtillon - 4 charging points at the head office in via Clavalité 8, Aosta	

b. Gases included in the calculation
N/A

c. Reference year
2022

d. Areas where reductions occurred
Direct (Scope 1) and indirect (Scope 2) emissions from energy consumption

e. Standards, methodologies, assumptions and/or calculation tools used
Verified Carbon Standard

GRI 306-1: WASTE GENERATION AND SIGNIFICANT WASTE-RELATED IMPACTS

a. Significant and potential impacts related to waste
Oils for hydraulic systems and maintenance; production of significant quantities of waste from intake scouring operations (non-hazardous). The criteria for assessing and reporting on whether inputs, activities and outputs result or could result in significant waste-related impacts are: • Quantity of inputs used to produce the organisation's products or services, which will become waste after being used for production. • Quantity of output waste produced by the organisation in its own activities, or quantity of output it provides to downstream actors destined to become waste once it reaches the end of its life. Hazard characteristics of inputs and outputs. • Properties of input materials or design characteristics of outputs that limit or prevent their recovery or limit their durability. • Known potential threats associated with certain materials once removed. For example, the potential threat of marine pollution due to the dispersion of plastic packaging into water bodies. • Types of activities involving the generation of significant amounts of waste or the generation of hazardous waste

GRI 306-2: WASTE GENERATION AND SIGNIFICANT WASTE-RELATED IMPACTS

a. Actions taken to prevent the generation of waste in the organisation's activities and upstream and downstream in its value chain, and to manage the significant impacts arising from the waste generated
Oil regeneration

b. Description of the processes used to determine whether the third party handles the waste in line with contractual or legal obligations
Commitment to proper waste management is required in the contract; the fourth copy of the FIR is requested

c. Processes used to collect and monitor waste data.
Data collection from different production sites and centralised control on specific Atlantide programme

GRI 306-3: WASTE GENERATED

a. Waste generated	2022	2021	2020
Waste generated (t)	460.02	611.085	451.642
Of which non-hazardous	412.10	553.57	354.43
Of which non-hazardous (%)	90%	91%	78%
Of which hazardous	47.917	57.512	97.217
Of which hazardous (%)	10%	9%	22%

b. Background information
Tonnes at destination as in many cases production is only estimated

GRI 306-4: WASTE DIVERTED FROM DISPOSAL

	2022	2021	2020
Total waste diverted from disposal	**156.57**	**157.87**	**100.21**
Of which hazardous waste	31.26	54.83	61.19
Preparation for re-use	0.00	0.00	0.00
On site	0.00	0.00	0.00
At an external site	0.00	0.00	0.00
Recycling	1.14	7.79	0.00
On site	0.00	0.00	0.00
At an external site	1.14	7.79	0.00
Other recovery operations	30.12	47.04	61.19
On site	0.00	0.00	0.00
At an external site	30.12	47.04	61.19
Of which non-hazardous waste	125.31	103.04	39.02
Preparation for re-use	0.00	0.00	0.00
On site	0.00	0.00	0.00
At an external site	0.00	0.00	0.00
Recycling	0.20	0.00	0.50
On site	0.00	0.00	0.00
At an external site	0.20	0.00	0.50
Other recovery operations	125.11	103.04	38.52
On site	0.00	0.00	0.00
At an external site	125.11	103.04	38.52

e. Background information

Lack of infrastructure for on-site recovery

GRI 306-5: WASTE DIRECTED TO DISPOSAL

	2022	2021	2020
Total waste directed to disposal	**303.44**	**453.22**	**351.43**
Of which hazardous waste	16.66	2.69	36.03
Incineration (with energy recovery)	0.00	0.00	0
Incineration (without energy recovery)	0.00	0.00	0
Landfilling	0.01	0.00	0.034
On site	0.00	0.00	0
At an external site	0.01	0.00	0.034
Other disposal operations	16.65	2.69	36
On site	0.00	0.00	0
At an external site	16.65	2.69	36
Of which non-hazardous waste	286.78	450.53	315.4
Incineration (with energy recovery)	0.00	0.00	0
Incineration (without energy recovery)	0.00	0.00	0
Landfilling	286.59	381.73	290.47
On site	0.00	0.00	0
At an external site	286.59	381.73	290.47
Other disposal operations	0.19	68.80	24.93
On site	0.00	0.00	0
At an external site	0.19	68.80	24.93

e. Background information

For the three-year period, the calculation scope for waste data, in continuity with previous years, includes the total data of the Group and its subsidiaries as at 31 December 2022

GRI content index

Declaration of use	THE CVA GROUP REPORTED IN ACCORDANCE WITH GRI STANDARDS FOR THE PERIOD 1 JANUARY - 31 DECEMBER 2022.
GRIs used	GRI 1: FOUNDATION 2021
GRI Sector Standard(s)	NOT APPLICABLE

GRI Standard / Other Source	Information	Location	Omissions			GRI Sector Standard Ref. Num
			Omitted requirements	Reason	Explanation	
	2.1. The organisation and its reporting practices					
GRI 2: General Disclosures 2021	**2-1 Organisational details**	Compagnia Valdostana delle Acque - CVA S.p.A. is 100% owned by Finaosta, a financial company of the autonomous region of Aosta Valley. The head office is Châtillon. The registered offices of the CVA Group companies are: - CVA S.p.A. a.s.u.: Via Stazione 31, 11024 Châtillon (AO) - CVA Eos S.r.l. a.s.u.: Via Stazione 31, 11024 Châtillon (AO) - Valdigne Energie S.r.l.: Piazza Vittorio Emanuele II, 14, Pre S. Didier, 11010 (AO) - CVA Energie S.r.l.: Via Stazione 31, 11024 Châtillon (AO) - Deval S.p.A. a.s.u.: Via Clavalité, 8, 11100, Aosta The CVA Group operates exclusively in Italy.				
	2-2 Entities included in the organisation's sustainability reporting	CVA S.p.a. (100%), Valdigne Energie S.r.l. (75%), CVA Eos s.r.l. (100%), CVA Energie S.r.l. (100%), Deval S.p.A. (100%); § About us				
	2-3 Reporting period, frequency and contact point	Following the validation of the document by the Board of Directors (on 3 May 2023), the publication date of the Annual Report is 21 June 2023, and the reporting period is from 1 January 2022 to 31 December 2022, in line with the reporting scope of the Annual Report. The contact point for more information is: sostenibilita@cvaspa.it				
	2-4 Restatements of information	Compared to the previous reporting period, some changes were made to the calculation methodology of the 201-1 indicator, which were then applied to previous reporting years.				
	2-5 External assurance	Methodological note; Independent Auditors' Report				

GRI Standard / Other Source	Information	Location	Omissions			GRI Sector Standard Ref. Num
			Omitted requirements	Reason	Explanation	
	2.2. Activities and workers					
GRI 2: General Disclosures 2021	**2-6 Activities, value chain and business relationships**	§ About us; The 2022 results; The value chain; We are full of energy; The people of the region				
	2-7 Employees	§ We are full of energy; The composition of the CVA Group Appendix				
	2-8 Workers who are not employees	§ We are full of energy; The composition of the CVA Group Appendix				
	2.3 Governance					
	2-9 Governance structure and composition	§ About us; Responsible governance; Integrated sustainability management Appendix				
	2-10 Nomination and selection of the highest governance body	§ About us; Responsible governance				
	2-11 Chair of the highest governance body	§ About us; Responsible governance				
	2-12 Role of the highest governance body in overseeing the management of impacts	§ About Us; Managing Business Risks The tasks of the Board of Directors include approving the Non-Financial Statement and the Integrated Plan				
	2-13 Delegation of responsibility for managing impacts	§ About us; Integrated sustainability management				
	2-14 Role of the highest governance body in sustainability reporting	The Board of Directors annually approves the Group's sustainability report, which includes the results of the materiality analysis.				
	2-15 Conflicts of interest	There is a specific procedure for handling conflicts of interest (AD 02). In addition, the Code of Ethics sets out the principles of conduct also relating to conflict of interest[117].				
	2-16 Communication of critical concerns	§ About us; Responsible governance In 2022, the total number of reports sent to the Board of Directors is 1 criticality in the area of privacy.				
	2-17 Collective knowledge of the highest governance body	Appendix (GRI 2-9)				
	2-18 Evaluation of the performance of the highest governance body	The Integrated Plan includes sustainability goals to which several Heads of Department are accountable. In the year 2023, an incentive system linked to these targets is to be developed.				

117 Whenever the RPCT (the Corruption Prevention and Transparency Officer) deems it appropriate or whenever a conflict of interest in the performance of the company's activities is communicated or, in any case, detected, he/she shall update a special computerised register, called Register of Conflicts of Interest, in which the following is recorded: a) the stage of the procedure in which the conflict arose; b) the event to which the conflict is related; c) the organisational structures concerned; d) the description of the conflict; e) the measures taken.

The Register is managed exclusively by the RPCT, who makes it accessible to the supervisory bodies at their request.

GRI Standard / Other Source	Information	Location	Omissions			GRI Sector Standard Ref. Num
			Omitted requirements	Reason	Explanation	
	2-19 Remuneration policies[118]	The emoluments of the members of the administrative bodies were determined in accordance with Article 11 of Legislative Decree No. 175 of 19 August 2016.				
	2-20 process to determine remuneration	In connection with the contents of Indicator 2-19 and thus the need to comply with the aforementioned regulation, there is no policy on quantifying the remuneration of the administrative bodies of CVA Group companies.				
	2-21 Annual total compensation ratio	Appendix				
	2.4. Strategy, policies and practices					
	2-22 Statement on sustainable development strategy	§ Letter to stakeholders				
GRI 2: General Disclosures 2021	**2-23 Policy commitments**	In evaluating and managing economic, environmental and social risks, the Group adopts an approach based on the precautionary principle The issue is dealt with in the NFS because, as highlighted in the Code of Ethics and Conduct, the Group protects the respect, dignity and integrity of people, ensuring equal opportunities without any discrimination or prevarication. It should be noted that the topic related to respect for human rights, although provided for in Legislative Decree 254/2016, was not included among the material topics, considering the territorial, regulatory and business environment in which the Group operates. For more information on the ESG Policies, Procedures and Guiding Principles adopted by the Group, please refer to the document section: § Integrated Plan. Reference is also made to the Code of Ethics and Conduct and the presence of an Integrated Management System in relation to the areas of quality, environment and health and safety.				
	2-24 Embedding policy commitments	§ About us; Responsible governance; Enterprise risk management; § We are full of energy; Training and skills development				
	2-25 Processes to remediate negative impacts	§ About us; Enterprise risk management; Sustainability risk assessment				
	2-26 Mechanisms for seeking advice and raising concerns	§ About us; Responsible governance CVA provides mechanisms to seek advice and report any critical issues. Specifically, there is a general assistance section on the site ('How can I help?') and via the e-mail address sostenibilita@cvaspa.it you can also request advice on the implementation of policies and practices for business conduct.				
	2-27 Compliance with laws and regulations	There were no incidents of non-compliance with laws and regulations in 2022.				

GRI Standard / Other Source	Information	Location	Omissions			GRI Sector Standard Ref. Num
			Omitted requirements	Reason	Explanation	
	2-28 Membership associations	Utilitalia, Elettricità Futura, Confindustria				
	2.5. Stakeholder engagement					
GRI 2: General Disclosures 2021	**2-29 Approach to stakeholder engagement**	§ About us § Materiality analysis and stakeholder engagement Appendix				
	2-30 Collective bargaining agreements	100% of employees are covered by collective bargaining				
	3. Material topics					
GRI 3: Material topics	**3-1 Guidance to determine material topics**	§ About us § Materiality analysis and stakeholder engagement				
	3-2 List of material topics	§ Who we are; The material topics for the CVA Group and its stakeholders				
	3-3 Management of material topics	§ Who we are; The material topics for the CVA Group and its stakeholders				
2.5. Stakeholder engagement						
GRI 3: Material topics 2021	**3-3 Management of material topics**	§ We are reliable and innovative § We are the energy of the future				
GRI 302: Energy 2016	**302-1 Energy consumption within the organisation**	§ We are the energy of the future Appendix				
	302-3 Energy intensity	Appendix				
GRI 305: Emissions 2016	**305-1 Direct (Scope 1) GHG emissions**	§ We are reliable and innovative; Group carbon footprint Appendix				
	305-2 Energy indirect (Scope 2) GHG emissions	§ We are reliable and innovative; Group carbon footprint Appendix				
	305-4 GHG emissions intensity	Appendix				
2.5. Stakeholder engagement						
GRI 3: Material topics 2021	**3-3 Management of material topics**	§ We are the energy of the future				

118 The current administrative bodies of the CVA Group companies were appointed before the conversion of the legislative decree into law No. 50 of 17 May 2022, which occurred with the conversion law No. 91 of 15 July 2022, published in the Official Gazette of the Italian Republic on 15 July 2022, which in Article 52 "Measures on public companies" introduced paragraph 1-bis which sets forth that "The deadline referred to in Article 2, paragraph 1, letter p), of the Consolidated Text on publicly-owned companies, referred to in Legislative Decree No. 175 of 19 August 2016, is set, for companies in the energy sector, at 31 December 2021".
Accordingly, the emoluments of the members of the administrative bodies were determined by taking into account the provisions of Article 11 of Legislative Decree No. 175 of 19 August 2016.
In the specific case of CVA, the fees currently received by the directors of CVA are those determined by FINAOSTA on the basis of the aforementioned article.
In the appointments made by CVA in its subsidiaries, Article 11 of Legislative Decree No. 175 of 19 August 2016 was applied for the determination of remuneration, where applicable, similarly to what was done by FINAOSTA.

GRI Standard / Other Source	Information	Location	Omissions			GRI Sector Standard Ref. Num
			Omitted requirements	Reason	Explanation	
GRI 303: Water and Effluents 2018	**303-1 Interactions with water as a shared resource**	In addition to what is described in the chapters § We are the energy of the future and § We are reliable and resilient, the CVA Group holds the following sub-concessions for the diversion, and consequent release, of water in the Autonomous Region of Aosta Valley: - Dora di Valgrisenche and tributaries; - Chalamy stream and tributaries; - Lys stream and tributaries; - Evançon stream and tributaries; - Marmore stream and tributaries; - St. Barthélemy stream and tributaries; - Dora di Rhêmes; - Savara stream; - Grand Eyvia stream and tributaries; - Ayasse streams and tributaries; - Buthier stream and tributaries; - Dora di La Thuile and tributaries; - St. Barthélemy stream				
	303-2 Management of water discharge-related impacts	§ We are the energy of the future § We are reliable and innovative				
	303-3 Water withdrawal	§ We are the energy of the future § We are reliable and innovative				
	303-4 Water discharge	§ We are the energy of the future § We are reliable and innovative				
Soil consumption, protection of biodiversity and landscape						
GRI 3: Material topics 2021	**3-3 Management of material topics**	§ We are the energy of the future; Protection of the environment and biodiversity				
GRI 304: Biodiversity 2016	**304-1 Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas**	§ We are the energy of the future; Protection of the environment and biodiversity Appendix				
	304-2 Significant impacts of activities, products and services on biodiversity	§ We are the energy of the future; Protection of the environment and biodiversity Appendix				
	304-4 IUCN Red List species and national conservation list species with habitats in areas affected by operations	Appendix				
Trust, reputation and territorial anchoring						
GRI 3: Material topics 2021	**3-3 Management of material topics**	§ We are full of energy				
GRI 201: Economic performance	**201-1 Direct economic value generated and distributed**	§ We are full of energy; Economic value generated and distributed				

GRI Standard / Other Source	Information	Location	Omissions			GRI Sector Standard Ref. Num
			Omitted requirements	Reason	Explanation	
GRI 204: Procurement practices 2016	**204-1 proportion of spending on local suppliers**	§ We are full of energy; Close to our suppliers				
GRI 205: Anti-corruption 2016	**GRI 205-2 - Communication and training about anti-corruption policies and procedures**	§ About us; Responsible governance Appendix				
	205-3 Confirmed incidents of corruption and actions taken	In 2020, 2021, and 2022, no instances of corruption were established, and as a result, no lawsuits were initiated against the company or its employees.				
GRI 417: Marketing and labelling 2016	**417-2 Incidents of non-compliance concerning product and service information and labelling**	No incidents of non-compliance were recorded during the reporting period				
	417-3 Incidents of non-compliance concerning marketing communications	No incidents of non-compliance were recorded during the reporting period				
Trust, reputation and territorial anchoring						
GRI 3: Material topics 2021	**3-3 Management of material topics**	§ We are full of energy				
GRI 202: Market presence 2016	**202-2 Proportion of senior management hired from the local community**	Appendix				
GRI 401: Employment 2016	**401-1 New employee hires and employee turnover**	§ We are full of energy; The composition of the CVA Group Appendix				
	401-2 Benefits provided to full-time employees that are not provided to temporary or part-time employees)	§ We are full of energy; the well-being of our people Appendix				
	401-3 Parental leave	Appendix				
GRI 402: Labor/ Management Relations	**GRI 402-1: Minimum notice periods regarding operational changes**	Appendix				
GRI 403: Occupational Health and Safety	**GRI 403-1 Occupational health and safety management system**	Appendix				
	GRI 403-2 Hazard identification, risk assessment, and incident investigation	Appendix				
	GRI 403-3 Occupational health services	Appendix				

GRI Standard / Other Source	Information	Location	Omissions			GRI Sector Standard Ref. Num
			Omitted requirements	Reason	Explanation	
	GRI 403-4 Worker participation, consultation and communication on occupational health and safety	Appendix				
	GRI 403-5 Worker training on occupational health and safety	Appendix				
	GRI 403-8 Workers covered by an occupational health and safety management system	Appendix				
	GRI 403-9 Work-related injuries	Appendix				
	GRI 403-10 Work-related ill health	Appendix				
GRI 404: Training and Education 2016	**404-1 Average hours of training per year per employee**	§ We are full of energy; Working safely Appendix				
	404-2 Programs for upgrading employee skills and transition assistance	Appendix				
GRI 405: Diversity and Equal Opportunity 2016	**405-1 Diversity of governance bodies and employees**	Appendix				
	405-2 Ratio of basic salary and remuneration of women to men	Appendix				
GRI 406: Non-discrimination 2016	**406-1 Instances of discrimination and corrective actions taken**	Appendix				
Trust, reputation and territorial anchoring						
418: Consumer Privacy 2016	**418-1 Substantiated complaints concerning breaches of customer privacy and losses of customer data**	In the three-year period 20-21-22, there were no breaches of customer privacy or losses/leaks/thefts of customer data.				

MATERIAL TOPICS NOT COVERED BY GRI TOPICS[119]

GRI Standard / Other Source	Information	Location	Omissions			GRI Sector Standard Ref. Num
			Omitted requirements	Reason	Explanation	
GRI 3: Material topics 2021	**3-3 Management of material topics**	§ We are reliable and innovative				
	GRI 403-5 Worker training on occupational health and safety	Appendix				
CVA indicators	**Investments in plant maintenance and upgrades**	§ We are reliable and innovative				
CVA indicators	**Producibility, load factor, availability index, scheduled and unscheduled unavailability index**	§ We are reliable and innovative				
Technological and service innovation						
GRI 3: Material topics 2021	**3-3 Management of material topics**	§ We are reliable and innovative				
CVA indicators	**Number of software programs developed in-house**	§ We are reliable and innovative; In-house software for smarter and more resilient plants				
Renewable energy production and mitigation of the impacts of the energy crisis						
GRI 3: Material topics 2021	**3-3 Management of material topics**	"We are reliable and innovative"; "We are the energy of the future"				
CVA indicators	**CO_2 emissions avoided**	§ We are the energy of the future				

GRI INDICATORS NOT RELATED TO MATERIAL TOPICS

GRI Standard / Other Source	Information	Location	Omissions			GRI Sector Standard Ref. Num
			Omitted requirements	Reason	Explanation	
GRI 306: Waste	**306-1 Waste generation and significant waste-related impacts**	Appendix; We are the energy of the future				
	306-2 Management of significant waste-related impacts	Appendix; We are the energy of the future				
	306-3 Waste generated	Appendix; We are the energy of the future				
	306-3 Waste generated	Appendix; We are the energy of the future				
	306-4 Waste diverted from disposal	Appendix				
	306-5 Waste directed to disposal	Appendix				

119 Quantitative indicators that do not relate to any general or topic-specific disclosures of the GRI Standards, which are reported on the pages indicated in the Content Index, are not subject to limited review by EY S.p.A.