ELVALHALCOR

HELLENIC COPPER AND ALUMINIUM INDUSTRY S.A.

2022

Task Force on Climate-related Financial Disclosures Report

TCFD | TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES

Contents

About this report

ElvalHalcor, a subsidiary of Viohalco S.A., is a leading player in the global aluminium and copper markets, utilizing the unique properties of both aluminium and copper to offer sustainable high-quality solutions and products, as well as create added value for its stakeholders.

ElvalHalcor is committed to sustainable development, incorporating targeted investment and an outward-looking strategy. By addressing contemporary issues like climate change, energy conservation, and the circular economy, the company leverages the exceptional properties of aluminium and copper. Through this, ElvalHalcor delivers sustainable solutions and products, emphasizing technology and quality, thereby generating value for shareholders and all stakeholders.

ElvalHalcor is actively involved in the aluminium and copper sectors, encompassing the aluminium rolling division (Elval) and the copper and alloy extrusion division (Halcor), situated in Oinofyta Viotias, along with subsidiary companies.

Aluminium rolling division
By investing consistently in research and development and thanks to an established global trade network, the domain aluminium rolling offers high-quality, innovative, sustainable and competitive solutions. In 2022, its aluminium rolling sector ElvalHalcor saw an increase in sales volume by 8.2% compared to the previous year.

Copper and alloy extrusion division
The copper and alloy extrusion division of ElvalHalcor is the largest producer of copper tubes in EMEA (Europe, Middle East and Africa). Implementing long-term strategies and investments provides dynamically developing markets with a wide range of innovative and sustainable copper products and high added value solutions and quality. With over 80 years of experience in metalworking, Halcor is a reliable partner in industries that manufacture equipment and parts, as well as to trading companies that distribute products to meet the demands of customers worldwide.

With continued investment and commitment to sustainable development, Halcor strategically focuses on research, development and innovation to create solutions for recyclable products with a low carbon footprint, contributing to the global transition to a green economy. In 2022, ElvalHalcor's copper and alloy extrusion division saw its decline sales volume by 3.7% compared with the previous year.

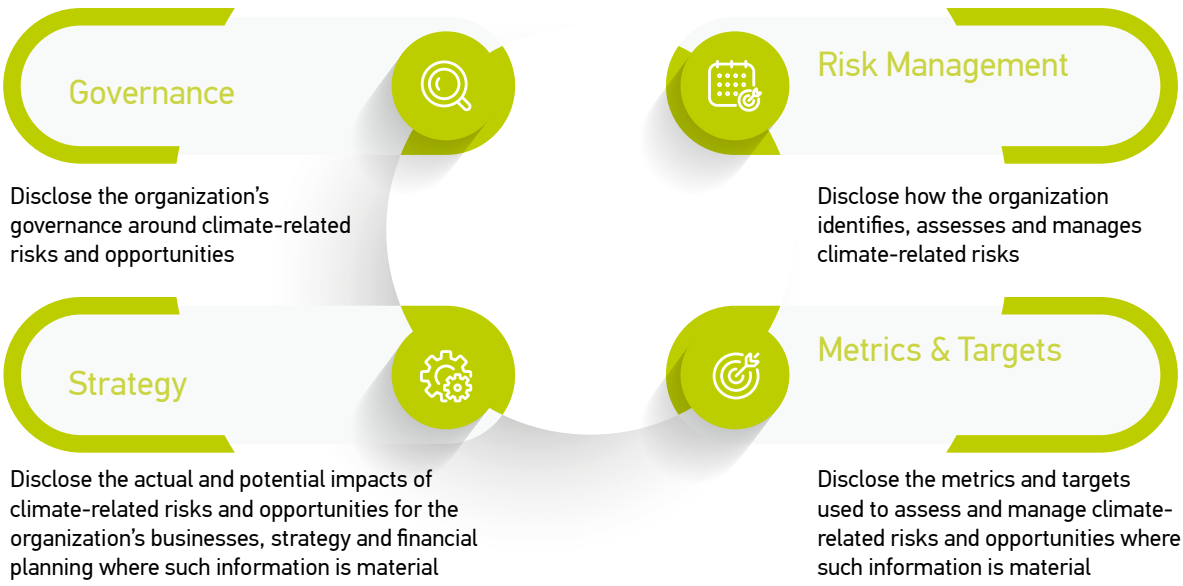
ElvalHalcor's aluminium rolling division is certified as per the ISO 9001:2015, ISO 14001:2015, ISO 45001:2018, IATF 16949:2016, ISO 50001:2018, ISO 27001:2013, AS9100, ASI Performance Standard and the ASI Chain of Custody Standard. The copper and alloys extrusion production plants are certified as per the ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 , ISO 46001:2019 and ISO 50001:2018 international standards.

TCFD implementation

Recognizing the current challenges on climate change, energy efficiency and circular economy, the company is committed to manage and tackle climate change by continuously reducing its carbon emissions and environmental footprint through the implementation of specific procedures and initiatives.

This is ElvalHalcor's first report on addressing climate-related risks for the financial year 2022, in line with the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD). We expect that these disclosures will accelerate the Company's decarbonization efforts and increase its accountability and transparency among its stakeholders.

In 2017, the TCFD recommendations were introduced with the objective of promoting standardized and comparable reporting by companies to their stakeholders on the risks and opportunities related to climate change. These recommendations are based on four primary areas, namely Governance, Strategy, Risk Management, and Metrics & Targets, and include eleven recommendations that outline the necessary disclosures under each of these areas. ElvalHalcor's Report covers all four areas and includes information on all eleven recommendations.



Through this report, ElvalHalcor aims to disclose the information on each of these four pillars and the way, in which they integrated the TCFD recommendations in their overall business strategy and risk management framework.

Reporting on Other Sustainability-Related Topics

The main focus of this Report is climate-related risks and opportunities; however, ElvalHalcor has also published information regarding its sustainability practices across various other areas, including sustainability topics, as part of its 2022 Sustainability Report.

Governance

Climate governance is given high priority for decision making related to climate change issues. ElvalHalcor's sustainability strategy is implemented through proper governance structures, including the discussion of various sustainability topics with the executive management team. The company has established regular meetings among executives that monitor progress and performance in various sustainability topics, including energy and carbon footprint performance matters and initiatives. The company also has in place a subject matter expert team in each division with well-established and documented duties and responsibilities regarding the sustainability topics.

Although the business is not currently reviewing climate-related topics at the board level, it has recognized the importance of addressing climate risks and opportunities in its operations. The company is currently exploring various options to integrate climate considerations into its existing governance structures and decision-making processes. ElvalHalcor is committed to addressing climate risks and opportunities in a meaningful way and is actively working to identify the most effective approach.

Strategy

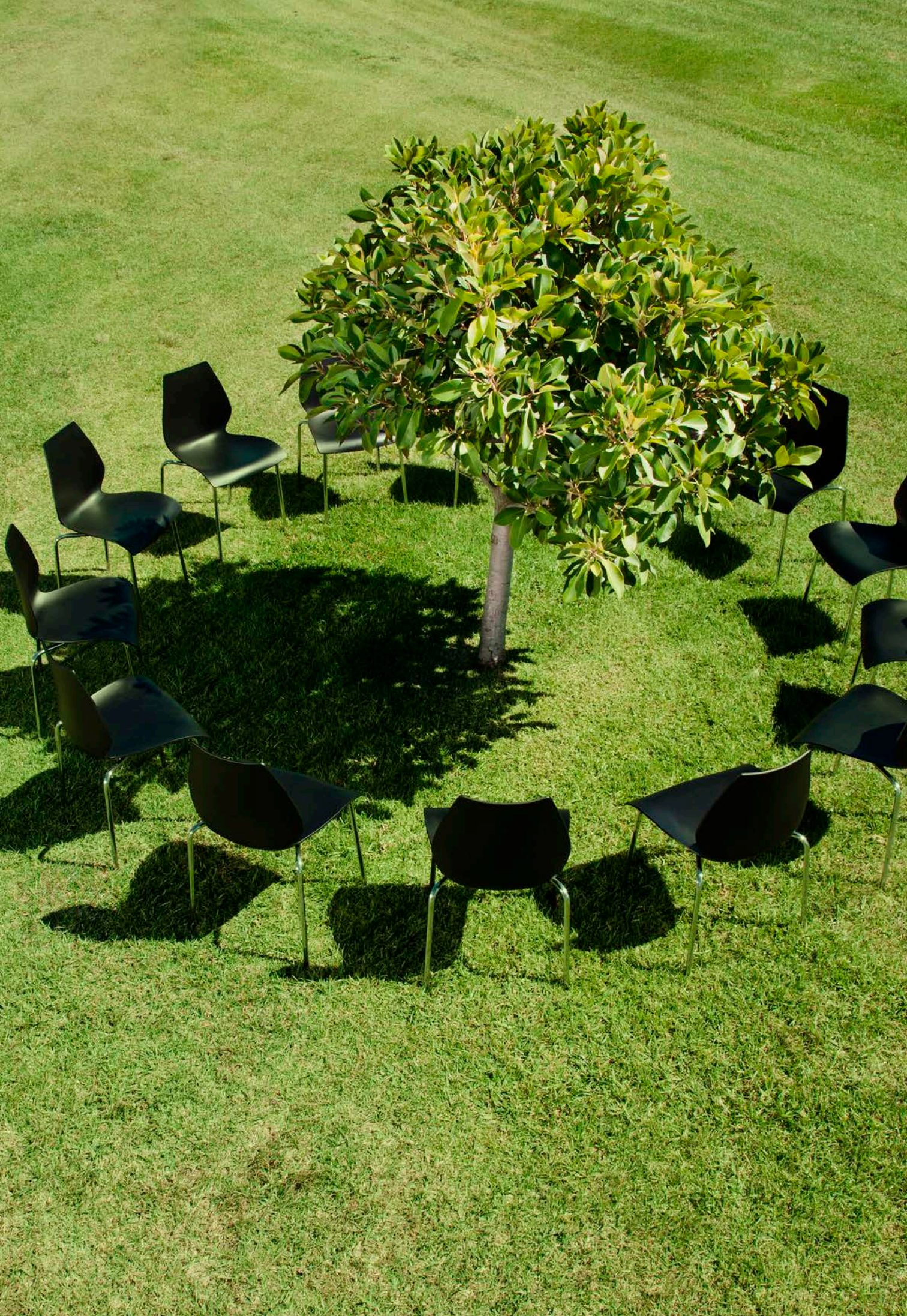
The different challenges posed by climate change can result to damages in assets and infrastructure, raw material shortages, input price fluctuations and supply chain disruptions. ElvalHalcor is planning the establishment of a formal Sustainability strategy to effectively manage the identified climate-related risks and mitigate impacts on its operations. Therefore, the company has in place an emergency plan to deal with the climate-related risks encapsulating different extreme scenarios and mitigation actions for other risk categories than operational such as supply chain disruptions, in order to be proactive about certain extreme weather conditions and has developed a strategic plan regarding investments in energy efficiency and technology in order to reduce emissions. Financial planning has been considered regarding the Company's sustainability strategy and the implementation of environmental initiatives (e.g., ETS compliance).

The company has incorporated climate change within its well-documented Enterprise Risk Management Framework, but the sustainability criteria are not strategically aligned with the business strategy and vision. Due to the pressure from stakeholders (regulators, investors, customers, financial institutions) regarding sustainability, the company has increased the climate-related projects undertaken, including indicatively the following:

1) Increase of recycled aluminium and copper in products
2) Sustainable design and promotion of recyclable products
3) Investments in expanding recycling capacity
4) Robust environment and energy management systems for all operations
5) Installation of solar panels in company's buildings
6) Extensive supply chain due diligence under carbon performance criteria

The implementation of initiatives can make a positive impact in the aluminium and copper business and help the company gain a competitive advantage. ElvalHalcor is considered well-positioned to adjust to the market's needs in the future and is committed to develop a more robust approach to effectively manage climate-related risks.

The company utilizes climate-related trends, as well as the associated risks and opportunities, to shape its strategic perspective and planning on climate matters. Through careful analysis, for each of the business segments, the most material risks and opportunities relating to the climate that could have a potential material financial impact on its activities, have been identified. These risks and opportunities, presented in the following tables, are considered in defining the strategy, financial planning and day-to-day operation.



Aluminium rolling division

Climate-related risks					
Type	Category	Title	Description	Time horizon	Impact and management
Transition	Technology	**Increase in energy prices due to climate change policies**	Higher operational cost due to the increase of electricity price, resulting from increased RES contribution, cost of energy storage and higher cost of carbon allowances	Short/ medium-term (0-10 years)	Energy prices are increasingly volatile, both from the increased volume of RES entering the system, cost of storing energy and from initiatives to reduce CO_2 emissions through market mechanisms such as cap-and-trade schemes and other regulatory initiatives. Long term, green PPAs have the potential to ensure long term stable prices for low carbon energy but more tools are needed in order to ascertain 24-hr availability of electricity at predictable prices. Improving energy footprint is another way to mitigate the risk of increased energy prices and this can be achieved through energy efficiency projects, process improvements and technology investments.
Transition	Policy and Legal	**Carbon taxes (CBAM)**	Increased raw materials purchasing costs due to additional taxes imposed by CBAM. Potential for lack of competitiveness due to circumvention of taxes by importers	Short/ medium-term (0-10 years)	From CBAM's introduction, businesses are expected to face impacts on business from the carbon taxes imposed to aluminium imports. ElvalHalcor is committed to preparing to adapt to the upcoming changes by mapping the different scenarios and implications of CBAM on the business through various suppliers. This will be achieved by reviewing the global supply chain, evaluating the overall impact on the business activity, and assessing carbon footprint of suppliers and potential effect of CBAM to the increased cost in the supply chain. ElvalHalcor is monitoring the implementation of CBAM rules and how these may affect trade intensities and competitiveness with third country producers. These risks may be mitigated through close collaboration with trade associations and EU authorities in an effort to point out necessary adjustments to ensure a level-playing field.
Transition	Policy and Legal	**Effect of ETS**	Gradual decrease of free EU Allowances starting in 2026	Short/ medium-term (0-10 years)	Free EU Allowances will be decreased gradually starting in 2026. Indirectly, the cost of thermal energy will increase as the consumption of natural gas results to carbon emissions. For aluminium products, this directly affects the operational cost. Energy efficiency measures are implemented on an on-going basis in order to decrease energy footprint and mitigate this effect.

Climate-related risks

Type	Category	Title	Description	Time horizon	Impact and management
Physical	Acute	**Adverse weather events**	Adverse weather events (such as extreme low/ high temperature, flooding due to heavy rainfall, heavy snowfall) may lead to significant disruptions in the production process, supply chain and transportation routes, and customer deliveries.	Long-term (10+ years)	Risks related to increased severity of extreme weather events that may impact the company's activities and key customers/ suppliers. ElvalHalcor seeks to foresee and mitigate material losses and stoppages, such as by monitoring long term weather patterns. Additionally, ElvalHalcor has a detailed crisis management process that addresses specifically matters that relate to adverse weather conditions and in more detail specific action for each such weather 'topic' per unit.
Physical	Chronic	**Water availability**	Shortage of water may hinder the company's production activities resulting from the changes in precipitation patterns in the long run due to climate change and warmer temperatures. Increased electricity consumption for full recycling of water will increase operational costs and indirect carbon emissions.	Long-term (10+ years)	The availability of freshwater for production purposes is a major water- management related risk. The aluminium segment is relatively water-intensive and therefore treat the water supply risk as a business continuity issue that can ultimately have a financial impact. The risk is mainly mitigated through continuous efforts to improve water intensity through technological advancements (ie. Closed-loop cooling systems) or have alternative sources of water. The company has also the infrastructure to recycle water (ZLD) for production needs, in order to mitigate extreme acute water shortages if no other supply is available.

Climate-related opportunities

Type	Description	Time horizon	Impact and management
Products & services	New circular and low carbon products – Recycled materials (circular economy)	Short/ medium-term (0-10 years)	ElvalHalcor promotes and implements the principles of circular economy, constantly increasing the use of aluminium that is sourced from products at the end of their life cycle, and designs recyclable products that can return to the value chain and reduce primary aluminium needs, subsequently avoiding energy and carbon footprint.

Copper and alloy extrusion division

Climate-related risks					
Type	Category	Title	Description	Time horizon	Impact and management
Transition	Technology	**Increase in energy prices due to climate change policies**	Higher production cost due to the increase of the electricity price resulting from increased RES contribution and higher cost of carbon allowances	Short/ medium-term (0-10 years)	Energy prices are increasingly volatile, both from the increased volume of RES entering the system, cost of storing energy and from initiatives to reduce CO_2 emissions through market mechanisms such as cap-and-trade schemes and other regulatory initiatives. Long term green PPAs have the potential to ensure long term stable prices for low carbon energy but other factors need to be addressed in order to ascertain around-the-clock availability at predictable prices. Improving energy footprint is another way to mitigate the risk of increased energy prices and this can be achieved through energy efficiency investments.
Transition	Policy and Legal	**Effect of ETS**	Gradual decrease of free EU Allowances once copper enters CBAM.	Short/ medium-term (0-10 years)	Free EU Allowances will be decreased gradually once copper enters CBAM like other materials. This is expected to take place around 2030. Indirectly, the cost of thermal energy will increase as the consumption of natural gas causes carbon emissions. For copper products, this directly affects the production cost. Energy efficiency measures will be further explored in order to mitigate this effect.
Physical	Acute	**Adverse weather events**	Adverse weather events (such as extreme low/high temperature, flooding due to heavy rainfall, heavy snowfall) may lead to significant disruptions in the production process, supply chain and transportation routes, and customer deliveries.	Long-term (10+ years)	Risks related to increased severity of extreme weather events that may impact the company's activities and key customers/suppliers. ElvalHalcor continues to implement a loss prevention program at all copper production plants, which seeks to foresee and mitigate material losses and stoppages, such as by monitoring changes in the weather. Additionally, ElvalHalcor has a detailed crisis management process that addresses specifically matters that relate to adverse weather conditions and in more detail specific action for each such weather 'topic' per unit.

Physical	Chronic	**Water availability**	Increased electricity consumption for full recycling of water will increase cost. Shortage of water may hinder the company's production activities resulting from the changes in precipitation patterns in the long run due to climate change and warmer temperatures.	Long-term (10+ years)	The availability of freshwater for production purposes is a major water management-related risk. The copper segment is relatively water-intensive and therefore treat the water supply risk as a business continuity issue that can ultimately have a possible material financial impact (negative impact on the company). The risk is mainly mitigated through continuous efforts to improve the water footprint of the companies and have multiple sources of water, so there are alternative sources of supply. In addition there is infrastructure in place at the copper tubes plant to collect and reuse rain water and also to reuse process water. Finally, there is a water action plan for the next 5 years that will lead to no less than 30% reduction of freashwater usage.

Climate-related opportunities			
Type	Description	Time horizon	Impact and management
Products & services	**New circular and low carbon products – Recycled materials (circular economy)**	Short/ medium-term (0-10 years)	ElvalHalcor promotes and implements the principles of the circular economy, constantly increasing the use of copper that is sourced from collecting products at the end of their life cycle, so that they can return to the value chain. The waste materials that renter the loop include both post-consumer and pre-consumer scrap for copper.
Products & services	**New product - Tubes for HVAC (heating, ventilation and air-conditioning)**	Short/ medium-term (0-10 years)	ElvalHalcor is already producing copper tubes to enable energy efficient HVAC systems which contribute to the transition to a low carbon economy. Furthermore, the subsidiary Sofia Med produces copper products used in various applications of EV and digital technologies. The copper segment companies are aiming to continue to do so and explore expanding its product offering to be able to further assist customers.

The climate-related risks and opportunities, presented in the table above, will be considered in the Company's strategy, financial planning and development of new sustainable and low-carbon products and services. ElvalHalcor has in place dedicated teams as a first line of defense (SMEs) and a dedicated Enterprise Risk Management Unit as a second line of defense and additionally has a structured approach for identifying, assessing, and managing climate-related risks and opportunities by appointing a dedicated committee responsible for overseeing their management.

This constituted the base of the analysis performed on the resilience of the strategy of the organization by taking into the consideration different climate-related scenarios, including a 2°C or lower scenario. ElvalHalcor understands the importance of monitoring and addressing a diverse range of external factors to achieve success. In order to gain further insights into how various climate scenarios could affect the Companies, while maintaining a consistent financial metric, the method of scenario analysis has been used. To analyze the impact of climate risks to the company's assets and operations, climate risks were assessed under two different climate scenarios across two different time horizons. More information about the scenarios is presented in the table below:

	Scenario 1	Scenario 2
	Moderate climate change scenario	High climate change scenario
Scenario	RCP 4.5 / SSP2-4.5	RCP 8.5 / SSP5-8.5
GHG emissions	**Intermediate GHG emissions.** GHG emissions gradually decline after peaking in 2030-2050, then falling but not reaching net zero by 2100.	**Very high GHG emissions.** GHG emissions continue to grow up through 2100. CO_2 emissions triple by 2075 compared with 2020.
Policy reaction	**Transition risks are relatively high.** • Governments will meet their current commitments to reduce climate impact. • Economic development goals are achieved despite a slowdown in the growth of resource consumption and energy consumption. • Climate policy is likely to boost the demand considerably for metals by 22%.	• **Transition risks are relatively low.** Only currently implemented policies are preserved, leading to high physical risks. • The global development patterns remain unchanged. • Some countries introduce decarbonization measures, but this is not sufficient to reduce the resource and energy intensity of the global economy. • Climate policy regulations are weak and insufficient to combat climate change and its adverse impacts.
Energy & Resources	**Moderately intensive use of resources and energy.** • Global oil consumption would peak by 2030-2035, gas consumption would continue growing through 2022-2050 and coal consumption would continue to decline without recovery. • The price of electricity will be in the middle range due to the use of various sources of energy production. • The resource intensity and energy intensity of the global economy declines as a result of decarbonization measures taken by developed countries and subsequent similar actions introduced by developing countries with a delay of several decades. • All metals face strong growth in annual demand, regardless of the scenario, mostly as a result of population and GDP growth.	**Intensive use of resources and energy.** • Usage of fossil energy sources will increase. • Electricity prices will be lower compared to other scenarios. • Economic development is achieved through intensive growth, which entails increased consumption of materials and energy and exploitation of natural resources. • All metals face a strong growth in annual demand, regardless of the scenario, mostly as a result of population and GDP growth.
Sea level rise	A significant decrease in anthropogenic GHG emissions leads to moderate physical impacts of climate change. Average global sea-level rise will reach 0.44-0.76 m by 2100.	The increase in GHG concentrations leads to significant physical impacts of climate change. Average global sea-level rise will reach 0.63-1.01 m by 2100.
Relevant forecasts and scenarios used	• IPCC AR5 Representative Concentration Pathway (RCP) 4.5 • Shared Socioeconomic Pathway 2 (SSP 2) • NGFS Nationally Determined Contributions (NDCs)	• IPCC AR5 Representative Concentration Pathway (RCP) 8.5 • Shared Socioeconomic Pathway 5 (SSP 5) • NGFS Current Policies

In the tables below, the evaluation of risks and their potential impact on financial performance, based on the climate scenario analysis performed for the transition and the physical risks per segment, is presented.

Climate impact legend		
High ●	Medium ●	Low ●

Aluminium rolling division

Type	Category	Title	RCP 4.5 / SSP2-4.5		RCP 8.5 / SSP5-8.5	
			2030	2050	2030	2050
Transition	Market	**Increase in energy prices due to climate change policies**	●	●	●	●
Transition	Policy and Legal	**Carbon taxes (CBAM)**	●	●	●	●
Transition	Policy and Legal	**Effect of ETS**	●	●	●	●
Physical	Acute	**Adverse weather events (flooding due to heavy rainfall)**	●	●	●	●
		Adverse weather events (heatwave)	●	●	●	●
Physical	Chronic	**Water availability**	●	●	●	●

Copper and alloy extrusion division

Type	Category	Title	RCP 4.5 / SSP2-4.5		RCP 8.5 / SSP5-8.5	
			2030	2050	2030	2050
Transition	Market	**Increase in energy prices due to climate change policies**	●	●	●	●
Transition	Policy and Legal	**Effect of ETS**	●	●	●	●
Physical	Acute	**Adverse weather events (flooding due to heavy rainfall)**	●	●	●	●
		Adverse weather events (heatwave)	●	●	●	●
Physical	Chronic	**Water availability**	●	●	●	●

In this analysis they are presented the results of the multiple climate scenarios aimed at assessing the climate-related risks identified for each segment. The potential impacts have been classified through 3 climate impact areas, namely high, medium, and low, in an effort to shed light on the potential consequences of climate change. It is important to note that these scenarios are based on current understanding and projections, and while they provide valuable insights, uncertainties in predicting the exact impacts still exist.

More specifically, for ElvalHalcor's **aluminium rolling division**, CBAM risk appears to have high impact in the short-term, medium-term, and long-term for both climate scenarios as it introduces risks related to circumvention loopholes by exporters of aluminium to European markets where the aluminium segment companies mostly operate. The effect of ETS is anticipated to have high impact in the short-term, medium-term, and long-term only for the RCP 4.5 climate scenario as free EU Allowances will be gradually decreased and this would directly affect the operational cost. In addition, increase in energy prices due to climate change policies is projected to have medium impact on the long-term in the RCP 4.5 climate scenario, and water availability appears to pose medium and high impacts in both climate scenarios since the aluminium segment is relatively water-intensive and potential problems in water supply could affect the business continuity and consequently the financial performance of the segment. For all the other climate-related risks identified, the analysis concluded that the impact under both scenarios and all timeframes is quite low.

For ElvalHalcor's **copper and alloy extrusion division**, water availability appears to be the most significant risk linked with climate change, as it could ultimately have a possible material financial impact because water is necessary for the production and the copper segment is considered water-intensive and creating completely closed loop water systems would ultimately increase operational cost. On the other hand, except for the effect of ETS that through the analysis is expected to pose medium-magnitude impacts in the long-term in one of the climate scenarios, all the other risks are not anticipated to have significant impacts for the copper segment.

Risk Management

The company is committed to implementing a robust risk management process that enables the identification, assessment, and management of all risks, including the climate-related risks and opportunities across its subsidiaries' operations. To that end, the company has established comprehensive Enterprise Risk Management Framework (ERM), Risk Management Policy, Risk Management Process, Risk Assessment Methodology and Risk Appetite Framework (RAF) for the holistic management of risks that the company is facing and/or risks that will arise in the future.

Within the Company's Risk Map, there is an independent Pillar for Environmental and Social risks with the respective risk categories and sub-categories aligned with the TCFD recommendations and with industry best practices. Based on the collaboration of the First Line of Defense (Subject Matter Experts) and the second line of defense (Risk Management Unit), ElvalHalcor is able to identify, assess and manage climate-related risks and opportunities more effectively, while also driving innovation and improving its overall resilience.

Continuous efforts are being made to further enhance the Company's Risk Management Culture and Framework. To that end, besides the annual Risk and Control Self-Assessment (RCSA) exercise that enables the identification and assessment of risks (including climate-related), the Risk Management Unit has designed and implemented (starting H1 2023) specific Key Risk Indicators (KRIs) for all Risk Pillars, in order to timely monitor trends, and further strengthen the efficiency and effectiveness of the Risk Management Process.

Metrics & Targets

The company recognizes the critical importance of measuring and reporting on a range of environmental KPIs in order to effectively manage climate-related risks and opportunities. In addition to tracking its greenhouse gas (GHG) emissions, the company also monitors its energy consumption. ElvalHalcor regularly reviews and reports on its progress against these targets and seek to continuously improve its environmental performance in line with best practices and stakeholder expectations.

Aluminium rolling division

Impact area	Unit	Indicator	2020	2021	2022
Water	m^3/tn of product	Water withdrawal	2.39	2.2	1.94
Energy	KWh/tn of product	Electricity consumption	0.82	0.76	0.70
Energy	KWh/tn of product	Thermal energy consumption	1.87	1.74	1.63
Energy	KWh/tn of product	Total energy consumption	2.69	2.50	2.33
Direct energy consumption by type of fuel	MWh/tn of product	Diesel	0.03	0.03	0.03
Direct energy consumption by type of fuel	MWh/tn of product	Natural gas	1.83	1.71	1.59
Direct energy consumption by type of fuel	MWh/tn of product	Total	1.87	1.74	1.62

Copper and alloys extrusion division

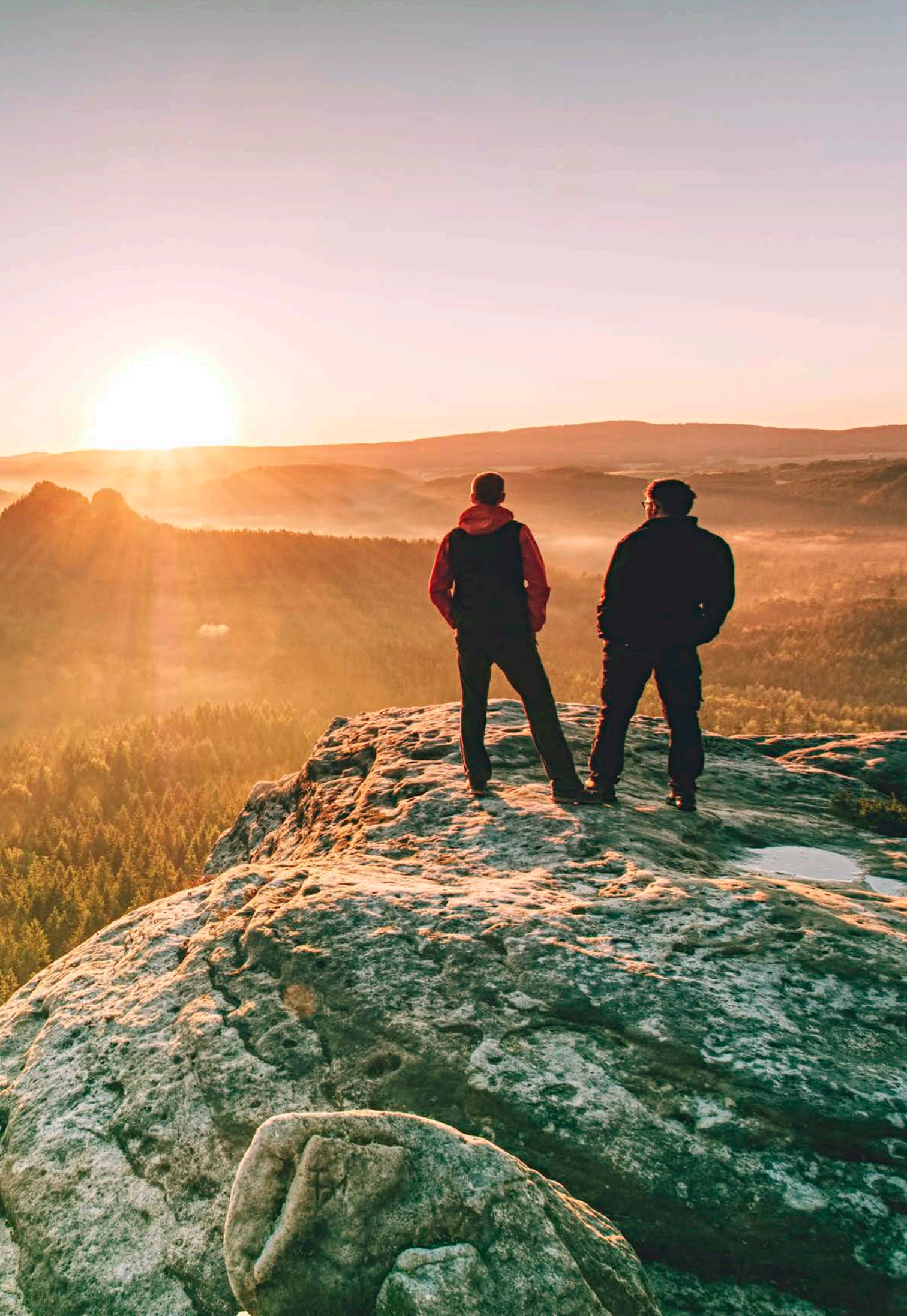
Impact area	Unit	Indicator	2020	2021	2022
Water	m^3/tn of product	Water withdrawal	1.72	1.68	1.65
Direct energy consumption by type of fuel	MWh/tn of product	Diesel	0.03	0.03	0.03
Direct energy consumption by type of fuel	MWh/tn of product	Natural gas	0.88	0.86	0.87
Direct energy consumption by type of fuel	MWh/tn of product	Total	0.91	0.89	0.90

Aluminium rolling division - Emissions

Impact area	Unit	Indicator	2020	2021	2022
Emissions	t CO_2	Total GHG emissions	217,772	229,966	262,867
Emissions	t CO_2	Direct (Scope 1) GHG emissions	104,852	116,905	119,858
Emissions	t CO_2	Indirect (Scope 2) GHG emissions	112,920	113,062	143,008
Emissions	t CO_2/tn of product	Total GHG emissions intensity	0.78	0.685	0.715
Emissions	t CO_2/tn of product	Direct (Scope 1) GHG emissions intensity	0.375	0.348	0.326
Emissions	t CO_2/tn of product	Indirect (Scope 2) GHG emissions intensity	0.405	0.337	0.389

Copper and alloys extrusion division - Emissions

Impact area	Unit	Indicator	2020	2021	2022
Emissions	t CO_2	Total GHG emissions	49,017	49,342	54,126
Emissions	t CO_2	Direct (Scope 1) GHG emissions	15,132	15,844	15,188
Emissions	t CO_2	Indirect (Scope 2) GHG emissions	33,885	33,498	38,939
Emissions	t CO_2/tn of product	Total GHG emissions intensity	0.538	0.508	0.588
Emissions	t CO_2/tn of product	Direct (Scope 1) GHG emissions intensity	0.166	0.163	0.165
Emissions	t CO_2/tn of product	Indirect (Scope 2) GHG emissions intensity	0.372	0.345	0.423

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