

# BRIEF SUMMARY OF TCFD REPORT FOR 2022



ZANGEZUR COPPER MOLYBDENUM COMBINE

ZCMC has commissioned Credel LLC and AvantGarde Group, s.r.o., to prepare its first TCFD report for the year 2022 with a firm belief that timely embarkment on the journey of decarbonization is not an obligation but the only way to ensure competitiveness of any corporation in a modern world. That journey starts with the first deep diving into the challenges that climate change poses to us as a company. In compliance with the globally recognized GHG Protocol, our team re-evaluated and restructured the greenhouse gas baselining process last year. This revision underlines our commitment to environmental accountability and precision in reporting our footprint."

Climate change represents one of the most pressing global threats to contemporary society, exerting lasting and severe impacts on our consumption and production patterns, with notable disparities worldwide. Lower-income nations disproportionately bear the burden of these costs, despite their minimal historical contribution to global carbon emissions. Manifestations of climate change include extreme weather events such as harsh droughts, intense heatwaves, catastrophic floods, disruptions to livelihoods, food security threats, and irreversible damage to land and water resources.

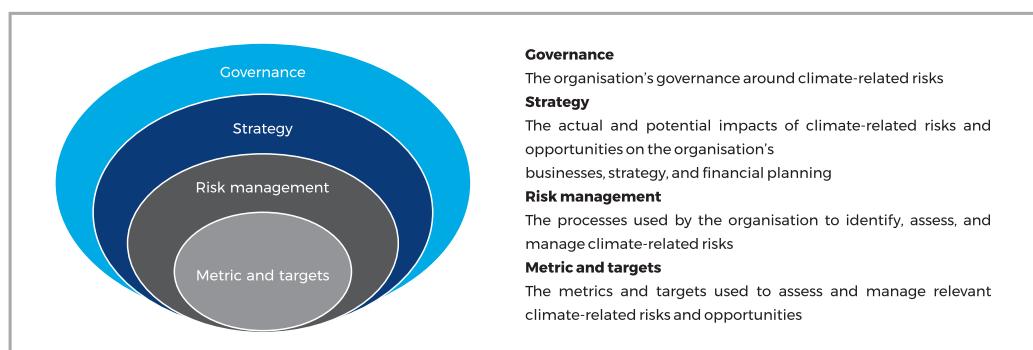
The mining industry faces heightened **physical risks** due to climate change. Extreme weather conditions can compromise the stability of tailings storage facilities, increasing the likelihood of dam failures. Fluctuating climate and weather patterns pose significant challenges to water supply, a vital resource for mining operations and crucial for the well-being of local communities. Conversely, international and national initiatives to counteract climate change present **opportunities** for the mining sector. When leveraged effectively, these can substantially contribute to a country's economic growth. Advancements in technologies such as renewable energy, electric vehicles, energy storage, metal recycling, and hydrogen fuel cells are expected to increase and become more economically viable, driven by worldwide efforts towards decarbonization.

Copper and molybdenum are essential to this technological shift. The demand for copper, including for electric wiring in electric vehicles, is set to rise alongside the growth in electric car production. Copper is a fundamental component in all renewable technologies, indicating an anticipated increase in its usage. The International Finance Corporation (IFC) states that copper production will need to increase 230% by 2050 to meet the increasing demand. Molybdenum, a critical element mainly used in steel and chemicals, is also indispensable in all green energy transition technologies, but the impact of the energy transition on the

To comprehensively assess the risks and opportunities faced by the mining industry, both globally and within the specific climatic, political, and regulatory context of Armenia, ZCMC has undertaken a detailed evaluation following the recommendations of the **Task Force on Climate-related Financial Disclosures (TCFD)**.

**TCFD** | TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES

## Core elements of TCFD recommendations



Based on this research and analysis, we have identified risks and opportunities related to our business, on a national and international level. This will help us to perform a strategic planning to effectively address immediate concerns while also preparing for future challenges and possibilities in the evolving landscape of sustainability and climate change.

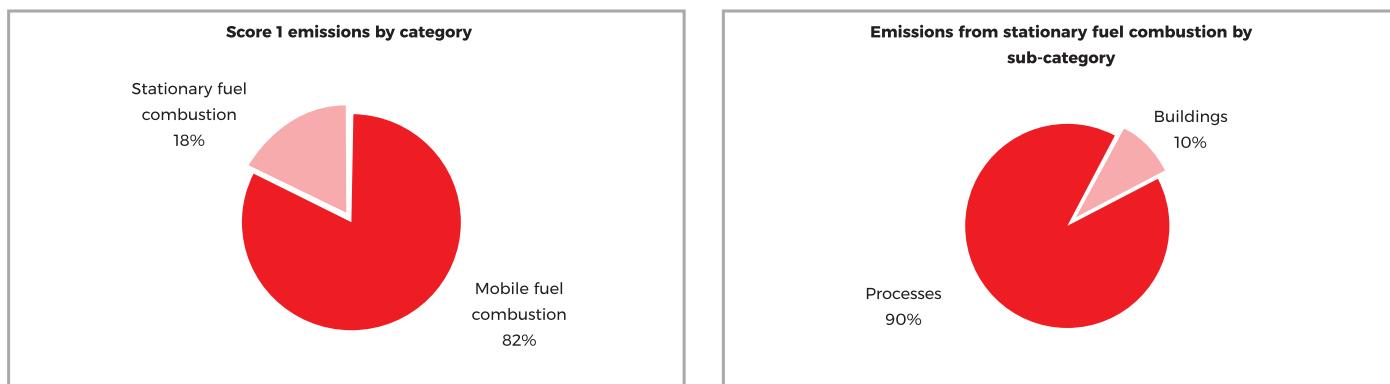


## GREENHOUSE GAS PROTOKOL

We established a robust corporate greenhouse gas (GHG) baseline, by assessing the scope of our GHG emissions and calculating the company's carbon footprint across Scope 1, Scope 2, and relevant categories of Scope 3 emissions. All these steps were meticulously aligned with the international **GHG Protocol Corporate Accounting Standard**, ensuring accuracy and compliance with global best practices.

ZCMC's GHG emissions for Scope 1, 2, and 3 totalled 1,060,412 t CO<sub>2</sub>-eq., in 2022, with Scope 3 accounting for 72% of this amount, Scope 2 - for 21%, and Scope 1 accounting for the remaining 7%. Scope 1 GHG emissions were energy-related and included mobile and stationary fuel combustion sources. The combustion of liquid fuels in ZCMC's transportation fleet contributed 82% to Scope 1 emissions, with industrial vehicles accounting for the largest share.

### Scope 1 GHG emissions



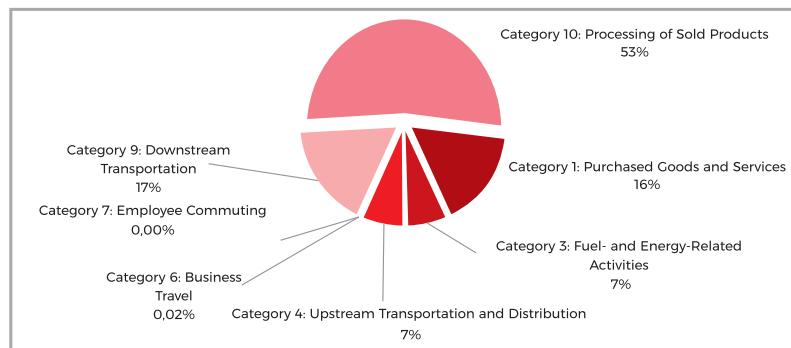
Scope 2 emissions included indirect GHG emissions associated with purchased electricity. In 2022, these emissions totalled 219,228 t CO<sub>2</sub>-eq. The processing plant was responsible for more than 90% of Scope 2 emissions, with ore crushing and transportation workshop also contributing significantly (5%).

### Scope 2 GHG emissions



Scope 3 emissions included indirect GHG emissions associated with the upstream and downstream value chain of the company. In 2022, these emissions totalled 769,558 t CO<sub>2</sub>-eq. More than half of these emissions (53%) were related to energy consumption for processing of sold products, followed by the emissions associated with transportation of such sold products, and emissions from the extraction, production and transportation of goods and services purchased or acquired by ZCMC.

### Scope 3 GHG emissions



Additionally, we examined a range of best practices from similar industries and companies, in the areas of climate change-related risks and opportunities management, and governance practices that are crucial for the effective implementation of sustainability and climate-related strategies.

In the local context, we see a significant importance in establishing decarbonization strategy for our business. There are various strategic and regulatory instruments on the national level that point on the need to reduce GHG emissions. In the framework on Paris Agreement, Armenia committed to reduce national GHG emissions by 40% by 2030, relatively to 1990 levels. The **National Mining Development Strategy** (until 2035), adopted in May 2023, recognizes the importance of reducing air pollutants and greenhouse gas emissions through the use of "clean" technologies and thermal gas treatment, as well as efficient energy use. Companies are strongly recommended to transition to renewable energy sources for mining operations. The **Mining Strategy's Action Plan** describes foreseen regulatory and strategic actions that are needed for the Strategy implementation, in the areas of reporting on environmental, social and climate change-related performance, conducting Environmental Impact Assessment, management of tailing storage facilities, and water use management.

ZCMC is committed to aligning its business strategy with national regulatory requirements and addressing the increasing customer demand for low-carbon products. We are now focused on assessing the feasibility of various decarbonization actions and developing a roadmap to integrate these practices into our corporate framework. This approach will position ZCMC to effectively respond to the immediate challenges of climate change and sustainability demands while also capitalizing on the opportunities they offer, thereby promoting long-term resilience and success.