

# Erdemir TSRS Report

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SUSTAINABLE  
GROWTH

RESPONSIBLE  
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PEOPLE-CENTERED  
APPROACH

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**(Convenience Translation of Auditor's Limited Assurance Report Originally Issued in Turkish)  
LIMITED ASSURANCE REPORT OF THE INDEPENDENT AUDITOR ON THE INFORMATION OF EREĞLİ DEMİR VE  
CELİK FABRİKALARI TÜRK ANONİM ŞİRKETİ AND ITS SUBSIDIARIES PRESENTED IN ACCORDANCE WITH THE  
TÜRKİYE SUSTAINABILITY REPORTING STANDARDS**

**To the Shareholders of Ereğli Demir ve Çelik Fabrikaları Türk Anonim Şirketi**

We have been assigned to perform limited assurance on the information ("Sustainability Information") presented in accordance with the Türkiye Sustainability Reporting Standards 1 "General Requirements for Disclosure of Sustainability-related Financial Information" and Türkiye Sustainability Reporting Standards 2 "Climate-Related Disclosures" on "Erdemir TSRS Report" section of the Integrated Report of Ereğli Demir ve Çelik Fabrikaları Türk Anonim Şirketi and its subsidiaries (collectively referred to as the "Group") for the year ended 31 December 2024.

Our assurance engagement does not include the information related to prior periods, other information included in the 2024 Integrated Annual Report and other information (including any images, audio files or embedded videos) associated with the Sustainability and 2024 Integrated Annual Report.

**Limited Assurance Conclusion**

Based on the procedures performed and the evidence obtained, as summarized under the section "Summary of the Work we Performed as the Basis for our Assurance Conclusion", nothing has come to our attention that causes us to believe that the Sustainability on "Erdemir TSRS Report" of the Group's Integrated Annual Report for the year ended December 31, 2024, has not been prepared in accordance with the Türkiye Sustainability Reporting Standards ("TSRS"), as published by the Public Oversight Accounting and Auditing Standards Authority of Türkiye ("POA") in the Official Gazette dated December 29, 2023 and numbered 32414(M). We do not provide any assurance conclusion regarding the information related to prior periods, other information included in the 2024 Integrated Annual Report and any other information (including any images, audio files or embedded videos) associated with the Sustainability Information and 2024 Integrated Annual Report.

**Inherent Limitations in the Preparation of Sustainability Information**

The Sustainability Information is subject to inherent uncertainties due to lack of scientific and economic information. The inadequacy of scientific data leads to uncertainties in the calculation of greenhouse gas emissions. Additionally, due to the lack of data regarding the likelihood, frequency, and impacts of potential physical and transition climate risks, the Sustainability Information is subject to uncertainties related to climate-related scenarios.

**Responsibilities of Management and Those Charged with Governance Regarding Sustainability Information**

The Group's Management is responsible for:

- Preparing the Sustainability Information in accordance with the principles of Türkiye Sustainability Reporting Standards;
- Designing, implementing and maintaining internal control over information relevant to the preparation of the Sustainability Information that is free from material misstatement, whether due to fraud or error.
- Additionally, the Group Management is responsible for selecting and implementing appropriate sustainability reporting methodologies as well as making reasonable assumptions and suitable estimates.

Those charged with Governance is responsible for overseeing the Group's sustainability reporting process.

**Responsibilities of the Independent Auditor Regarding the Limited Assurance of Sustainability Information**

We are responsible for the following:

- Planning and performing the engagement to obtain limited assurance about whether the Sustainability Information is free from material misstatement, whether due to fraud or error;
- Forming an independent conclusion, based on the procedures we have performed and the evidence we have obtained; and
- Reporting our conclusion to the Group Management.
- Since we are responsible for providing an independent conclusion on the Sustainability Information prepared by management, we are not permitted to be involved in the preparation process of the Sustainability Information in order to ensure that our independence is not compromised.



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**Professional Standards Applied**

We performed a limited assurance engagement in accordance with the Standard on Assurance Engagements 3000 Assurance Engagements other than Audits or Reviews of Historical Financial Information and in respect of greenhouse gas emissions included in the Sustainability Information, in accordance with Standard on Assurance Engagements 3410 Assurance Engagements on Greenhouse Gas Statements, issued by POA.

**Independence and Quality Control**

We have complied with the independence and other ethical requirements of the Code of Ethics for Independent Auditors which is founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behavior, issued by the POA. Our firm applies Standard on Quality Management 1 and accordingly maintains a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements, professional standards, and applicable legal and regulatory requirements. Our work was carried out by an independent and multidisciplinary team including assurance practitioners, sustainability and risk management specialists. We have used the work of our expert team to assess the reliability of the information and assumptions related to the Group's climate and sustainability-related risks and opportunities. We remain solely responsible for our assurance conclusion.

**Summary of the Work We Performed as the Basis for Our Assurance Conclusion**

We are required to plan and perform our work to address the areas where we have identified that a material misstatement of the Sustainability Information is likely to arise. The procedures we performed were based on our professional judgment. In carrying out our limited assurance engagement on the Sustainability Information:

- Face to face interviews were conducted with the Group's key senior personnel to understand the processes in place for obtaining the Sustainability Information for the reporting period.
- The Group's internal documentation was used to assess and review sustainability-related information.
- The disclosure and presentation of sustainability-related information was evaluated.
- Through inquiries, an understanding of Group's control environment, processes and information systems relevant to the preparation of the Sustainability Information was obtained. However, the design of particular control activities was not evaluated and evidence about their implementation was not obtained, or their operating effectiveness was not tested.
- It was evaluated whether Group's methods for developing estimates are appropriate and had been consistently applied. However, our procedures did not include testing the data on which the estimates are based or separately developing our own estimates against which to evaluate Group's estimates.

The procedures performed in a limited assurance engagement vary in nature and timing from, and are less in extent than for, a reasonable assurance engagement. Consequently, the level of assurance obtained in a limited assurance engagement is substantially lower than the assurance that would have been obtained had we performed a reasonable assurance engagement.

Güney Başımaz Denetim ve Serbest Muhasebeci Mali Müşavirlik Anonim Şirketi  
A member firm of Ernst & Young Global Limited



March 21, 2025  
İstanbul, Türkiye



# Erdemir TSRS Report

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# 1. Introduction

## 1.1. Preparation of the Report

### 1.1.1. Compliance with Türkiye Sustainability Reporting Standards (TSRS)

The Türkiye Sustainability Reporting Standards (TSRS), published in the Official Gazette dated December 29, 2023, entered into force to be implemented for reporting periods beginning on or after January 1, 2024. Erdemir has an obligation to report in accordance with TSRS Standards since it is subject to the regulation and supervision of the Capital Markets Board of Türkiye with its parent company Ereğli Demir ve Çelik Fabrikaları T.A.Ş. ("Erdemir" or the "Company") and its subsidiaries and meets the criteria of exceeding the threshold values of at least two of the specified criteria in two consecutive reporting periods.

This report has been prepared in accordance with the requirements of TSRS 1: General requirements for disclosure of sustainability-related financial information and TSRS 2: Climate-related disclosures. In addition to its core business of iron and steel production, Erdemir has evaluated its entire value chain, including its subsidiaries and affiliates, and included them in the scope of the report. Unless otherwise stated, all information and statements in this report cover Ereğli Demir ve Çelik Fabrikaları T.A.Ş. (Erdemir) and all of its subsidiaries.

The report also utilizes the Sustainability Accounting Standards Board (SASB) Standards of the International Sustainability Standards Board (ISSB). The guidelines on the Sector-Based Implementation of TSRS 2 have been evaluated to identify, measure, and disclose potential approaches regarding climate-related risks and opportunities for Erdemir's subsidiaries that represent a significant proportion within the consolidated financial statements. For Erdemir's subsidiaries engaged in iron and steel production, the 'Volume 9 — Iron and Steel Producers' guide was used, while for subsidiaries operating in other sectors, such as Kümaş and Ermaden, the 'Volume 10 — Metals and Mining' guide was applied. The sustainability metrics recommended for disclosure in both the 'Volume 9 — Iron and Steel Producers' and 'Volume 10 — Metals and Mining' guides are aligned with each other. In contrast, the explanations related to the supply chain management metric found in the 'Volume 9 — Iron and Steel Producers' guide are included in the 6<sup>th</sup> section of the report, 'Metrics and Targets.' The disclosure of certain expected operational metrics from the 'Volume 10 — Metals and Mining' guide, such as total number of employees, contractor percentage, and the number of non-compliance incidents related to water quality permits, standards, and regulations, has been excluded from this report as they are not directly related to the significant climate risk disclosed in the report. This Volume 9-Iron and Steel Producers, which is a guide specific to the iron and steel industry, Erdemir's core business, is derived from the SASB Standards maintained by the ISSB.

### 1.1.2. Link to Financial Disclosures

The sustainability and climate-related disclosures in this report have been prepared for Erdemir and should be evaluated with the consolidated financial statements. The report covers a 12-month period ending December 31, 2024 and the consolidated financial statements are consistent with the reporting period. Relevant financial information can be accessed via this link (<https://www.erdemir.com.tr/storage/uploads/2025/02/c9da877b8cae1b93aba4974cecc6a114.pdf>).

In line with the timelines used in strategic decision-making processes, Erdemir defines the timeframes in sustainability and climate-related risk assessment processes as follows:

Short term	0 - 1 year
Medium term	2 - 5 year
Long term	6 - 10 year

### 1.1.3. Time of Reporting

Erdemir is reporting within the scope of Türkiye Sustainability Reporting Standards (TSRS) for the first time for the annual reporting period ending on December 31, 2024 and applies TSRS 1 and TSRS 2 Standards together for the annual reporting period starting from January 1, 2024.



# Erdemir TSRS Report

## 1.1.4. Transition

There are some transitional exemptions under items E3, E4, E5 and E6 in TSRS 1 and items C3, C4 and C5 in TSRS 2. The transition exemptions applied by Erdemir are as follows:

- In its first annual reporting period, an entity is only permitted to disclose information about climate-related risks and opportunities (in accordance with TSRS 2) and therefore only apply the requirements in TSRS S1 to the extent that they relate to disclosing information about climate-related risks and opportunities. Erdemir has only taken into account the risks and opportunities related to climate change when preparing this report. However, information on governance, strategy and risk management approach covers all sustainability issues, including climate.
- As an entity is not required to provide the disclosures required by TSRS S1 and S2 for any period prior to the date of initial application and is not required to provide comparative information, Erdemir only presents its metrics for 2024 in this report. Benefiting from the transition exemption, this report does not include sustainability and climate-related financial disclosures from previous years.
- If, in the annual reporting period immediately preceding the date of initial application of this Standard, an entity used a method other than the Greenhouse Gas Protocol: Corporate Accounting and Reporting Standard (2004), the entity is permitted to continue to use the other method. Among the subsidiaries of Ereğli Iron and Steel Works Inc. (Erdemir), İskenderun Iron and Steel Co. (İsdemir), Erdemir Mining Industry and Trade Inc. (Ermaden), and Kümaş Magnesite Industry Inc. (Kümaş) are listed in Annex-1 of the Regulation on the Monitoring of Greenhouse Gas Emissions, which came into force in 2015 in Türkiye. These companies prepare annual emission reports in accordance with the Monitoring, Reporting and Verification (MRV) Communiqué. In addition, Erdemir Romania S.R.L. (Erdemir Romania), one of the subsidiaries, is within the scope of the European Union Emissions Trading System (EU ETS) and performs emission calculations using the Monitoring, Reporting and Verification (MRV) method. Since 2015, Erdemir, which has been subject to this communiqué, calculates the greenhouse gas emission value in accordance with the legislation and submits it to the Republic of Türkiye Ministry of Environment, Urbanization and Climate Change. In 2024, Erdemir's Scope 1 emissions were calculated within the scope of the Communiqué on Monitoring and Reporting of Greenhouse Gas Emissions (MRV). Therefore, the value presented in the TSRS is the calculation in accordance with the MRV communiqué instead of the GHG protocol calculation required by the standard. Calculations shared in the first year using the transitional exemption will be shared in subsequent years using the Greenhouse Gas (GHG) Protocol. The transition exemption was used in the first year and the GHG Protocol will be used in the next reporting.
- In line with TSRS requirements, enterprises are not required to disclose Scope 3 greenhouse gas emissions for the first two years of sustainability reporting. Using this exemption, Erdemir has excluded Scope 3 emissions.
- In an entity's first annual reporting period after an entity applies the TSRS, the entity is permitted to report sustainability-related financial disclosures after the entity has issued the relevant financial statements. Erdemir publishes this report in February 2025, after sharing its financial statements for the period January 1 - December 31, 2024.

This report comprehensively addresses Erdemir's sustainability and climate-related management structure, strategy, risk and opportunity identification and management processes, performance metrics and targets. In line with its vision of shaping the future of steel with sustainability, Erdemir aims to provide reliable and comprehensive information by supporting its commitment to transparency in its sustainability journey.

## 1.2. Reporting Limits and Measurement Approach

Erdemir applied the equity approach when determining its organizational boundaries for reporting greenhouse gas emissions. According to this approach, GHG emissions of subsidiaries are calculated in line with the shareholding. This approach included Scope 1 and 2 reporting of GHG emissions. Emissions of the joint venture, İsdemir Linde Gaz Ortaklığı, are included in the calculation within the emissions of İsdemir.

Thus, Erdemir used the consolidation method applied in its financial statements in the reporting of greenhouse gas emissions data.

# 2. About Erdemir

## 2.1. Erdemir Organization and Value Chain

### 2.1.1. Organization and Field of Activity of Erdemir

Erdemir consists of Ereğli Demir ve Çelik Fabrikaları T.A.Ş., the parent company, and its subsidiaries over which it has effective management.

Erdemir, Türkiye's first and largest flat steel producer, started production on May 15, 1965. Erdemir produces hot and cold rolled flat steel, hot and cold rolled flat steel, plate, tin, chrome and galvanized coated sheet at international quality standards with the experience gained in its 60-year long history. The products produced by Erdemir, which is among the world's most important steel producers, provide basic input to many sectors such as automotive, white goods, pipe profile, rolling, general manufacturing, electrical electronics, machinery, energy, heat appliances, shipbuilding, defense, packaging and renewable energy.

Among Erdemir's subsidiaries are İskenderun Iron and Steel Co., the only integrated producer in Türkiye capable of producing both flat and long steel; Erdemir Steel and Service Center, which offers tailored sizing and services to steel users; Erdemir Mining, which owns Türkiye's first and only iron ore pelletizing plant; Erdemir Engineering, which provides engineering services at every stage from technical design to commissioning; Kümaş Magnesite, the world's largest magnesite ore operator in the qualified magnesite ore sector and the market leader in the refractory sector in Türkiye; and Innovative Building Materials, a subsidiary of Kümaş that continues its recycling activities. Erdemir Romania, a subsidiary of Erdemir, sells a large portion of the electrical steel it produces to the European market. Erdemir carries out its commercial activities in the Asia Pacific Far East region. The İsdemir Linde Gas Company, which was established to meet İsdemir's need for additional industrial gas and to reduce costs related to the existing industrial gas system, and Erdemir Energy, which was established to generate renewable energy, are also among the affiliated companies.

Erdemir's shares have been traded on the stock exchange since the establishment of Borsa İstanbul (1986). The registered address of the Company is Barbaros Mahallesi Ardic Sokak No: 6 Ataşehir/İstanbul.

The nature of the businesses and shareholding percentages of the companies included in the consolidation are as follows:

COMPANY NAME	REGION OF OPERATION	FIELD OF ACTIVITY	EFFECTIVE PARTNERSHIP RATE IN 2024 %
İSKENDERUN DEMİR VE ÇELİK A.Ş.	Türkiye	Integrated Iron and Steel Production	94,87
ERDEMİR MADENCİLİK SAN. VE TİC. A.Ş.	Türkiye	Iron Ore, Pellet	90
ERDEMİR ÇELİK SERVİS MERKEZİ SAN. VE TİC. A.Ş.	Türkiye	Steel Service Center	100
ERDEMİR MÜHENDİSLİK YÖN. VE DAN. HİZ. A.Ş.	Türkiye	Management and Consulting	100
ERDEMİR ROMANIA S.R.L.	Romania	Siliceous Steel Production	100
ERDEMİR ASIA PACIFIC PRIVATE LIMITED	Singapore	Commercial Activity	100
ERDEMİR ENERJİ ÜRETİM A.Ş.	Türkiye	Renewable Energy Generation	100
İSDEMİR LINDE GAZ ORTAKLIĞI A.Ş.	Türkiye	Industrial Gas Production and Sales	47
KÜMAŞ MANYEZİT SANAYİ A.Ş.	Türkiye	Magnesite Ore, Refractory	100
YENİLİKÇİ YAPI MALZEMELERİ VE ÜRETİM SAN. TİC. A.Ş.	Türkiye	Recycling, Special Purpose Business	100



**2.1.2. Erdemir's Business Model and Value Chain**

In preparing its climate-related financial disclosures, Erdemir evaluated its entire value chain, including its own operations as well as its subsidiaries and affiliates. Erdemir depends on a large number of resources to deliver its iron and steel products and interacts with many organizations and stakeholders. These stakeholders include suppliers of raw materials required for production operations, suppliers of facilities and equipment, employees, consultants, logistics companies that collaborate to distribute products, and customers who purchase products. Thus, there are many activities and stakeholders involved in the value chain, both upstream and downstream.

Erdemir's upstream and downstream value chain relationships are as shown below:

		Explanation and Definition	Geographical Location
Upstream Value Chain	Suppliers	Solid Fuel	USA, Australia, Indonesia, Colombia, Italy, Local
		Scrap Supply for Steel Production Process	USA, United Kingdom, European Union, Baltic States, Local
		Ore	Brazil, Norway, Australia, South Africa, Local,
		Ferro & Auxiliary Material	European Union, India, China
		Finished & Semi-finished Product	Local
Operations	Auxiliary Functions	Central Units (HR, Finance, IT, etc.) Structure, Management, R&D, Sustainability, Electricity Natural Gas Water Insurance Public & Other	Ereğli, İskenderun
	Port & Logistics & Warehousing	Solid Fuel, Ore, Scrap, Ferro, Auxiliary Material, Finished Product, Semi-finished Product	Ereğli, İskenderun
	Production	Ereğli Demir Çelik Fabrikaları İskenderun Demir Çelik Fabrikaları	Ereğli İskenderun
Downstream Value Chain	Customers	Erdemir Steel Service Center Erdemir Romania Automotive Merchants and Service Centers General Manufacturing Industry Pipe Profile and Rolling	Türkiye Romania Türkiye Türkiye Türkiye Türkiye
		Export	European Union, MENA, UK, North America

**3. Governance**

**3.1. Erdemir Sustainability Governance Structure**

Erdemir's governance of issues related to sustainability and climate change is handled with the highest level perspective, starting from the Board of Directors level. This structure includes the assessment of risks and opportunities related to sustainability and climate strategies, policies and targets. The Board of Directors is supported by the Early Detection of Risk Committee (EDRC) on sustainability and climate-related risks and opportunities.

**3.2. Board of Directors**

Erdemir's sustainability and climate risks and opportunities are monitored and managed by the Board of Directors at the highest level. The Board is responsible for approving sustainability and climate-related policies, strategies and targets in line with short, medium and long-term business objectives. The Board of Directors also ensure that the sustainability strategy is integrated with the Company's overall business model and long-term goals.

The Board of Directors evaluates sustainability and climate issues at its biannual meetings. The Board addresses sustainability and climate-related issues within the framework of the Company's strategy, performance targets and risk management processes and assesses the alignment of these factors with the Company's short, medium and long-term goals.

The Board of Directors regularly reviews risks and opportunities in sustainability and climate issues and integrates these risks and opportunities into strategic decision-making processes. They also determine financing and resource allocation decisions, shapes strategic steps to reduce carbon emissions and provides oversight of the process through the action plans it approves.

The Erdemir Board of Directors evaluates climate risks and opportunities together with financial and operational returns in strategic decisions and long-term planning. Decision-making processes consider a balance between the short-term return of a high/low carbon emission investment and long-term sustainability goals. The Board of Directors discusses these trade-offs and strikes the best balance for the Company. Taking all this into account, it has defined the Net Zero Roadmap.

As of 2024, Board members were briefed on the Carbon Border Adjustment Mechanism (CBAM) and green transformation. These briefings support the Board's decision-making processes and raise their awareness on sustainability management.

Our Board members have many years of experience in industry, company management and academia. The EDRC, which is composed of independent Board members, was briefed on sustainability and climate change issues in three meetings held in 2024, thereby enhancing its competence to oversee sustainability and climate risks. The Company plans to provide information on sustainability and climate change issues at two EDRC meetings next year. The Board has the necessary skills and competencies to effectively oversee sustainability and climate-related risks and opportunities. Detailed background information of the members of the Board of Directors can be accessed via this link (<https://www.erdemir.com.tr/kurumsal/yonetim/yonetim-kurulu>).

Our greenhouse gas reduction targets in the Net Zero Roadmap will be realized with the commissioning of the relevant investments and the completion of the studies. Greenhouse Gas Emission reduction performance metrics are planned to be targeted starting from 2025. In our company, the performances of monthly paid employees are evaluated through individual target scorecards.

**3.3. Early Detection of Risk Committee**

At Erdemir, sustainability and climate-related risks and opportunities are regularly assessed by the Early Detection of Risk Committee (EDRC). Within the scope of regulatory and legal requirements, the Committee early identifies risks that may threaten the existence, development and continuity of the Company, takes the necessary measures and ensures effective management of risks. The Committee analyzes all risks in line with the Company's risk appetite and strategic priorities and reports to the Board of Directors.

EDRC is composed of two Independent Board Members. The Committee convenes six times a year to assess risks and opportunities in the strategic (economic, political, reputation, climate change and sustainability, etc.), financial, operational and compliance categories and provides regular information to the Board of Directors. In 2024, at meetings held on July 23, August 14 and October 22, the Committee discussed green transformation and sustainability issues, as well as CBAM and climate change-induced flood risk, and presented its findings to the Board of Directors.

Defined controls and procedures are in place to support the management of sustainability and climate-related risks and opportunities, and the Risk Management Procedure is used to ensure the effectiveness of these processes. In this context, it is ensured to work in harmony with the Company's overall strategic and risk management processes. Risk management practices are continuously reviewed in integration with other internal functions and suggestions are presented to the Board of Directors to improve processes.



# Erdemir TSRS Report

### 3.4. Corporate Risk Management Directorate

The Risk Management Directorate initiates and monitors risk management activities for targets and processes in critical areas across the central function, subsidiaries and value chain.

The Corporate Risk Management Directorate carries out risk identification and assessment processes in coordination with business units, reports these processes with a proactive approach, monitors and assesses critical risks by updating risk inventories. In addition, Directorate maintains effective risk management practices by monitoring the actions taken for identified risks.

During the reporting period, the Corporate Risk Management Directorate and the Operational Excellence Directorate held regular meetings with independent sustainability consultants, receiving strategic consultancy on identifying and reporting sustainability and climate-related risks and opportunities.

### 3.5. Internal Audit

The Internal Audit function ensures that corporate risk management activities are carried out in accordance with national and international legislation and standards and the Company's strategies, policies, procedures, principles and objectives. Internal Audit also provides assurance to senior management by assessing the effectiveness and adequacy of first-line controls and second-line process and risk management systems.

### 3.6. Employees

CRM practices aim to create a risk culture. Each employee is responsible for identifying, assessing, monitoring and taking the necessary actions to manage the risks within his/her responsibility in line with the principles set out.

## 4. Strategy

### 4.1. Climate Risks and Opportunities

Climate change is not only an environmental issue, but also one of the greatest global challenges of our time, profoundly affecting economic systems and social structures. Unless the necessary steps are taken quickly to limit the global temperature rise to 1.5°C in line with the Paris Agreement, there is a growing risk that the environmental, economic and social impacts will reach an irreversible point. Aware of these risks, Erdemir acts with the awareness of its responsibility in the fight against climate change. By taking steps to combat climate change in line with its long-term goal of creating value, Erdemir aims to put its economic and social impacts on a sustainable basis.

Erdemir has identified, assessed and prioritized the climate risks and opportunities that are expected to reasonably affect the future in the short, medium and long term. The identified climate risks and analyzes are part of a consolidated risk assessment covering Erdemir and all its subsidiaries. Erdemir determines the risk tolerance level with threshold values calculated on the basis of the ratios determined over the total assets and revenue amount in the financial statements disclosed to the public and decides on the level of impact of risks by considering this tolerance level.

The Carbon Border Adjustment Mechanism (CBAM) Carbon Pricing risk, which is one of the risks and opportunities identified on a consolidated basis, has been assessed in relation to climate change and classified at level 3 (significant) in the long term on the five-point risk impact scale used by Erdemir. In this context, although it is not foreseen to have a critical impact on Erdemir, it is necessary to make an announcement as it is closely followed by other companies in the sector and investors. Other climate-related risks are rated as lower priority. All identified risks are prioritized and reported within the framework of a matrix and risk changes are regularly monitored.

### 4.1.1. Risk 1: CBAM Carbon Pricing

<b>Risk Title</b>	Carbon Border Adjustment Mechanism (CBAM) Carbon Pricing		
<b>Risk Category</b>	Transition Risk - Policy & Legal Risk		
<b>Risk Definition</b>	<p>The Carbon Border Adjustment Mechanism (CBAM) is an arrangement that enables the imposition of carbon costs on imports into the European Union (EU) from non-EU countries, particularly for carbon-intensive products.</p> <p>The European Green Deal, announced by the European Commission in 2019, sets the goal for Europe to become the first climate neutral continent by 2050. In line with this target, within the framework of the Fit for 55 Package, the CBAM entered into force in October 2023 and a transitional period will be implemented until the end of 2025. Erdemir has addressed and assessed the risk of CBAM in line with the scenario that the financial implementation period will begin in 2026.</p> <p>The CBAM will cover imports of emission-intensive products, introducing carbon pricing for sectors such as iron and steel, cement, electricity, fertilizers, aluminum and hydrogen, and EU importers will be obliged to report the embedded and indirect emissions of these products. They will also be obliged to purchase CBAM certificates against these emissions.</p> <p>As the iron and steel sector requires a production process that is associated with high carbon emissions, the impact of CBAM in the baseline scenario is a closely monitored risk component for companies in the sector. Companies exporting steel and iron to the EU may face uncertainties regarding the pricing of their products exported to the EU linked to the carbon emissions of their production processes under this regulation. This situation will put pressure on firms' product pricing and may negatively affect their profitability by making their competitive advantage more difficult.</p> <p>For the reasons explained above, Erdemir and some of Erdemir's local customers, which produce iron and steel outside the EU, may also face additional costs arising from CBAM when exporting to the EU. In other words, the prices of steel products exported to the EU may be suppressed due to the CBAM, which may affect the competitiveness of our company. The risk of CBAM particularly affects the direct and indirect exports of Erdemir and Isdemir plants to the EU. These impacts will be limited as other subsidiaries have low/no export levels or do not fall within the scope of the CBAM.</p>		
<b>Place in the Value Chain</b>	Downstream Value Chain - Customers		
<b>Impact Time Interval</b>	Short Term	Medium Term	Long Term
<b>Term (Year)</b>	0-1	2-5	6-10
<b>Impact Scale</b>	1 (Low)	2 (Tolerable)	3 (Moderate)
<b>Probability</b>	1	5	5
<b>Current Risk Score</b>	1	10	15



# Erdemir TSRS Report

<p><b>Climate Resilience</b></p>	<p>The Sustainable Development Scenario (SDS), featured in the 'Iron and Steel Technology Roadmap: Towards More Sustainable Steelmaking' report (<a href="https://www.iea.org/reports/iron-and-steel-technology-roadmap">https://www.iea.org/reports/iron-and-steel-technology-roadmap</a>), which was prepared based on the climate scenarios<sup>1</sup> in the Energy Technology Perspectives (ETP 2020: <a href="https://www.iea.org/reports/energy-technology-perspectives-2020">https://www.iea.org/reports/energy-technology-perspectives-2020</a>) developed regularly by the IEA (International Energy Agency) since 2006, serves as an important reference for the iron and steel sector and approaches to technological green transformation. The IEA's SDS scenario is also aligned with the Paris climate agreement's targets for limiting temperature rise. In the IEA analysis, short-term, medium-long-term and long-term periods were used. In the short term, technology performance improvements and material efficiency on traditional routes play the biggest role. In the medium and long term, carbon capture and fuel switching, from coal to natural gas, hydrogen and bioenergy play a major role. The analysis evaluated energy use and distribution until 2050. The distribution of energy sources such as coal, electricity, hydrogen and bioenergy is analyzed. In addition to greenhouse gas emissions, other environmental issues such as air pollution, soil pollution and water use are also mentioned in the analysis.</p> <p>The IEA analysis also assessed the steel industry from macroeconomic factor perspectives. A number of macroeconomic factors influence the global and regional dynamics of steel production. Among the most important are economic development, trade and competitiveness, all of which are interlinked. Steel is used in a number of sectors that are closely linked to overall economic activity. The steel industry is a key component of the global economy and a sector with a significant impact on economic growth.</p> <p>With a large share of global market trade, the steel industry is highly competitive. The last five years can be characterized as a period of low prices and low margins, partly explained by overcapacity. China accounts for about half of the world's steel production capacity. Although China has taken steps to reduce its old and inefficient iron and steel production capacity in recent years, continued new investments continue to pose the risk of global oversupply.</p> <p>While preparing the green transformation Net Zero Roadmap, Erdemir evaluated in detail the low CO<sub>2</sub> emission and emission-free green production technologies included in the SDS. The macroeconomic trends in the IEA analysis guided Erdemir's net zero roadmap. The production and energy technologies identified in the road map have been selected to enable Erdemir to develop resilience and flexibility, especially to the impacts of climate change risks. While determining its Net Zero strategy, Erdemir set short-term targets of 2030, medium-term targets of 2040 and long-term targets of 2050 in relation to the periods in the scenario analysis. Scenario analysis was used for Erdemir, the parent company, and Isdemir, a subsidiary, and the net zero road map was created for these two companies.</p> <p>Electric Arc Furnaces (EAF) and Solar Power Plants based on circular generation play an important role in combating climate risks. Also expanding the range of solutions are Direct Reduced Iron (DRI) plants that can run on both natural gas and green hydrogen, and carbon capture and storage technologies for emissions that cannot be avoided. In addition, Erdemir determined the emission reduction targets in the net zero roadmap in 2023 and announced them at the beginning of 2024, taking into account the Faster Innovation Case scenario in the IEA's subject report, in which production technologies with a Technology Readiness Level-TRL currently low are rapidly developed and addressed in order to achieve net zero emissions by 2050.</p> <p>In 2020, the analysis for the 2019-2050 periods in the Iron and Steel Technology Roadmap report published by the IEA was used.</p>
<p><b>Risk Vulnerable Business Activity</b></p>	<p>We are exposed to this risk due to the presence of EU member states in our export markets.</p>

<sup>1</sup>Details of the models and basic assumptions used in climate scenarios (valid time intervals and periods, model scope, macroeconomic trends, changes in global parameters such as energy demand, demographics, material efficiency and global warming levels, etc.) can be found at the following link: <https://www.iea.org/reports/global-energy-and-climate-model>

<p><b>Risk Impacts</b></p>	<p><b>Uncertainty in Sale Prices:</b> The CBAM and carbon pricing mechanisms may directly and indirectly affect the prices of the company's products exported to the EU. Especially for companies exporting to the EU, carbon costs may make price competition more difficult, leading to a decline in customer demand. Uncertainty in prices will lead to fluctuating profit margins, making financial predictability difficult.</p> <p><b>Weakening of Competitiveness:</b> The carbon emissions associated with being an integrated facility will create a disadvantage when competing with competitors that produce with lower carbon emissions. With increasing competition in the EU market, competitors that produce with low carbon emissions due to advanced production technologies may be less affected by the cost differences brought by carbon pricing, while companies like Erdemir, which operate carbon-intensive integrated iron and steel production, may need to reflect part of this additional burden in the prices of certain products. As a result, this can have negative consequences for market share and revenues.</p> <p><b>Investment Delays:</b> Environments of financial uncertainty can lead to the postponement of investments in clean energy projects and sustainable production technologies that have been identified to manage risk in a balanced way. Failure to make these investments on time will impact competitiveness and delay the transformation needed to reduce carbon emissions.</p>
<p><b>Potential Financial Impact</b></p>	<p>As a result of the assessments made, it has not been determined that it is necessary to make any adjustments to the values of assets or liabilities in the financial statements due to climate-related risks and opportunities. Erdemir has carried out studies to quantitatively measure the Potential Financial Impact foreseen within the scope of the CBAM, but has not been able to obtain consistent results at this stage due to high uncertainties.</p> <p>Based on estimates by various financial institutions, the CBAM may create price pressure on Erdemir and Isdemir products sold directly and indirectly to the EU. Due to this situation, annual sales revenues may decline. The CBAM Impact Model is developed to determine the financial dimension of the impact.</p> <p>In case the projections regarding carbon prices change, the pricing mechanism becomes clearer and reliable results start to be obtained, the current information in the reports will be updated in the following periods.</p>



<p><b>Measurement Uncertainties</b></p>	<p>While Erdemir is at the preparation stage of this report, the carbon pricing to be developed based on market-based mechanisms in the coming years has not yet been finalized. Uncertainties regarding the implementation and scope of the CBAM, variability in carbon prices, constantly evolving regulatory arrangements and unclear market balances regarding how the carbon cost will be shared between the customer and the producer create uncertainty for Erdemir's measurements and judgments arising from the CBAM risk.</p>
<p><b>Precautions / Actions</b></p>	<p>Within the framework of the CBAM legislation, Erdemir considers the period between October 2023 and December 2025 as a transition period and continues its preparations against the financial impacts that will begin in 2026. In this context, the measures taken and planned are as follows:</p> <p><b>Net Zero Roadmap</b></p> <ul style="list-style-type: none"> <li>Emission Reduction Targets: Scope 1 and Scope 2 emissions are targeted to be reduced by 25% per ton of crude steel by 2030 and 40% by 2040, with the aim of achieving "NET ZERO" by 2050.</li> </ul> <p><b>Energy Transition and Technology Investments</b></p> <ul style="list-style-type: none"> <li>Green Energy Use: Projects to increase the use of renewable energy sources aim to reduce carbon costs.</li> <li>Transition to Clean Technologies: Feasibility studies are being carried out to improve production technologies based on the best available techniques (BAT) and to commission new low-carbon technologies.</li> </ul> <p><b>Regulatory Tracking and Interaction</b></p> <ul style="list-style-type: none"> <li>Legislation Observation: Regulations on CBAM are closely monitored and potential impacts are assessed.</li> <li>Sectoral Cooperation: In cooperation with sector representatives and public institutions, an active role is taken in policy development processes.</li> </ul> <p><b>Sustainability Governance</b></p> <ul style="list-style-type: none"> <li>Management and Decision Mechanisms: Specific decision-making mechanisms have been established to monitor and manage the risks arising from CBAM, and these risks are regularly reviewed and necessary actions are taken.</li> </ul>
<p><b>Cost of Responding to Risk</b></p>	<p>Although the CBAM risk does not have a financial impact on Erdemir as of the reporting year, it is possible that this may change in the long term.</p> <p>Erdemir realizes emission reduction investments in order to minimize the financial liability arising from the CBAM. A total transformation investment of USD 3.2 billion will be realized at Erdemir and Isdemir until the end of 2030. The relevant statement can be accessed via this link (<a href="https://www.erdemir.com.tr/kurumsal/medya/basin-bultenleri/erdemir-ve-isdemirde-hedef-2050ye-kadar-net-sifir-emisyona-ulasmak">https://www.erdemir.com.tr/kurumsal/medya/basin-bultenleri/erdemir-ve-isdemirde-hedef-2050ye-kadar-net-sifir-emisyona-ulasmak</a>).</p>

**4.2. Impacts of Climate-Related Risks and Opportunities on Company Strategy: Green Journey of Steel**

Erdemir announced the 2050 Net Zero Roadmap in order to contribute to Türkiye's achievement of the net zero emission target by 2053, which was set within the scope of the Paris Climate Agreement. Erdemir, one of the world's and Türkiye's leading steel producers, will maintain its leading role in the sector to adapt to green transformation processes.

Within the scope of the Net Zero Roadmap strategy, Erdemir accelerated its decarbonization efforts to support a sustainable future. In production processes, innovative solutions are developed to reduce greenhouse gas emissions, technologies that increase energy efficiency are implemented and by-product gases and waste heat released from production are utilized to the maximum extent. While efforts are underway to increase the use of recyclable steel, research is being carried out on the use of biomass with a zero emission factor at various stages of the processes.

With the decisive steps taken to increase energy efficiency and expand the use of renewable energy, Erdemir is committed to achieving a net zero emission target by 2050. In this context, the Company aims to achieve 25% emission reduction per ton of crude steel by 2030, 40% emission reduction by 2040 and net zero emission by 2050, based on the year 2022. Erdemir leverages existing and innovative technologies to strengthen its leadership in the decarbonization process while supporting Türkiye's 2053 net zero emission target.

Erdemir conducts analyzes and determines improvement steps in order to create the necessary actions to reduce greenhouse gas emissions. In this context, steps are taken to reduce emissions through activities such as the establishment of solar power plants, increasing energy efficiency, increasing the share of scrap used in production, and the use of HBI (hot briquetted iron). In addition, by closely monitoring the development of low-emission steel production technologies, a clear zero roadmap has been put forward in line with feasibility studies, including internal carbon pricing. Although there is a high degree of unpredictability and uncertainty due to fluctuations in carbon markets due to global developments, changes in free allowances and the tendency to tighten regulations, the shadow carbon price, which is a component needed in feasibility studies for planned investments, is used in the range of EUR 15-25.

In line with the Green Journey of Steel strategy, Erdemir reshapes its activities to benefit society and the environment and aims to integrate sustainability and climate-related risks and opportunities into all of its business processes. However, it is committed to identifying and managing sustainability and climate-related risks and opportunities in line with national and international standards.



## 5. Risk Management

### 5.1. Sustainability and Climate Risk and Opportunity Assessment Process

Erdemir has adopted the corporate risk management framework in order to identify, assess and manage sustainability and climate-related risks and opportunities and integrated these processes into the Company's overall risk management approach. The processes for managing sustainability and climate-related risks and opportunities are defined in the Corporate Risk Management (CRM) Procedure. Within the scope of this process, Erdemir also evaluates the opportunities that climate change may bring within the scope of the CRM process. Risks are identified, prioritized and monitored in line with ISO 31000 Risk Management principles, COSO ERM (Corporate Risk Management) frameworks and best practices. Critical risks and opportunities are continuously monitored and the effectiveness of action plans are reviewed and recorded in the risk inventory.

Identifying sustainability and climate-related risks and opportunities is done using inputs such as historical climate data and market trends. Analyses are used to understand the long-term impact of opportunities and assess their alignment with the Company's strategic objectives. Opportunities such as energy efficiency projects and the development of low-carbon production technologies are identified and presented to senior management. These opportunities are ranked according to their importance and detailed plans are made for those prioritized.

#### 5.1.1. Determining Risk Tolerance and Risk Appetite

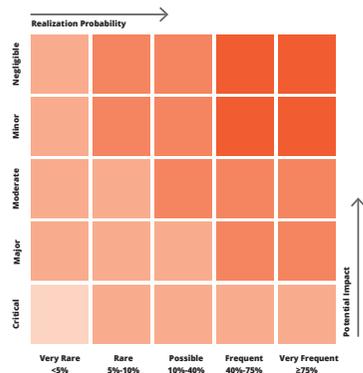
Risk tolerance refers to our capacity to absorb financial losses; risk appetite refers to the highest acceptable level of risk. The impact scales created within the framework of these definitions are regularly reviewed by the Early Detection of Risk Committee.

#### 5.1.2. Identification of Risks

Internal and external factors that may affect strategic objectives are systematically analyzed, and operational disruptions, compliance risks and potential costs are taken into account. Identified risks are integrated into the corporate risk management framework and monitored.

#### 5.1.3. Prioritization of Risks

Risks are prioritized according to impact, probability and maturity criteria through scenario analysis and expert opinions. The financial, environmental and legal impacts of sustainability and climate risks are taken into account and possible reflections on strategic planning are evaluated. risks with "Very High" and "High" scores are closely monitored by senior executives. Risks are assessed on a five-point scale (1-Low, 2-Tolerable, 3-Significant, 4-Major, 5-Very Major) and scored on an impact-probability scale. In this context, the Carbon Border Adjustment Mechanism (CBAM) Carbon Pricing risk has been assessed at level 3 on a five-point scale; although it is not foreseen to have a critical impact on Erdemir, details of the risk are included in the Climate-related Risks and Opportunities section as it is closely followed by other companies in the sector and investors. Other climate-related risks are treated as lower priority. All identified risks are prioritized



### 5.1.4. Modeling of Risks

Erdemir uses risk modeling processes to understand the impact of prioritized risks and to determine their financial implications. The company's climate-related risks are analyzed with inputs such as greenhouse gas emissions, production data and free allocation reduction levels, and different scenarios are prepared in line with evolving information. This process is expected to produce outputs in the coming periods in line with the 2050 Net Zero Roadmap.

### 5.1.5. Risk Improvement

Within the scope of risk management, identified risk owners review their risks. Remedial actions to address identified risks are included in the investment plans.

### 5.1.6. Monitoring and Reporting of Risks and Opportunities

Risks and opportunities are constantly monitored and updated in line with local and global developments. The Company regularly monitors and updates sustainability and climate-related risks and opportunities in line with set metrics and targets. Sustainability and climate risks are monitored within the framework of certain performance indicators and action plans and policies are revised according to these indicators. This process is handled within the framework of the Company's overall risk management and contributes to strategic decisions on climate change.

### 5.1.7. Evaluation of the Risk Management Process

The risk management process is periodically reviewed to improve the Company's existing competencies and to evaluate strategies for responding to risks. Efficiency analyses are conducted in line with the data obtained from internal and external sources and continuous improvement is ensured.

## 6. Metrics and Targets

Erdemir has set emission reduction targets in order to minimize the additional cost risk arising from CBAM and has set out the actions it will take until 2050 through the Net Zero Roadmap. Erdemir has transparently shared this roadmap with the public, which includes the investments and projects it will realize on its journey to net zero. This roadmap also aims to contribute to Türkiye's 2053 net zero commitment under the Paris Agreement.

The Erdemir Net Zero Roadmap was announced in 2024 and no changes were made to the existing targets. In case of any possible changes in the coming years, these changes will be shared in the following year's reports. The Net Zero Roadmap can be accessed from [here](#).

### 6.1. Activity Metrics<sup>2</sup>

Production Quantities	2024
Crude Steel Production (tons)	8,544,934
Total Iron Ore Production (tons)	1,549,197
Total Coke Production (tons)	2,493,803

<sup>2</sup>Operating metrics include crude steel production, iron ore production and coke production data of Erdemir and Isdemir included in the consolidation of the reporting entity.



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## 6.2. Climate Related Metrics<sup>3</sup>

### 6.2.1. Greenhouse Gas Emission Metrics

Greenhouse Gas Emissions <sup>4</sup>	2024
Scope 1 (tons CO <sub>2</sub> eq)	17,336,630
Scope 2 (tons CO <sub>2</sub> eq) <sup>5</sup>	880,092
<b>Total (Scope 1 and 2)</b>	<b>18,216,722</b>

Erdemir applied the equity approach when determining its organizational boundaries for reporting greenhouse gas emissions. According to this approach, GHG emissions of subsidiaries are calculated in line with the shareholding. This approach included Scope 1 and 2 reporting of GHG emissions. Emissions of the joint venture, Isdemir Linde Gaz Ortaklığı, are included in the calculation within the emissions of Isdemir.

Erdemir and Isdemir are responsible for 96.5% of the consolidated greenhouse gas emissions of Erdemir. In this context, the calculation method of Erdemir and Isdemir was disclosed within the framework of the MRV Communiqué, but the calculation method was not disclosed due to the low amount of greenhouse gas emissions of other companies. In the 2024 calculation, the 'Calculation-Based Method' was followed: the standard method was used for combustion emissions and process emissions related to the limestone source stream, while the mass balance method was applied for other source streams. The calculation of the emission factor for coals (coking coal, battery blend coal, purchased coke, injection coal, etc.), which cause a large portion of our total emissions, is based on the analysis results of the laboratories (Coal and Coke Laboratory) in our facilities. The emission factors of limestones, ferrous and alloyed raw materials are determined according to the results of in-house laboratory measurements (Cold Rolling Mill and General Chemistry Laboratory). Emission factors for natural gas are determined on the basis of BOTAŞ Erdemir online gas chromatography device. Table 5.4 of Annex-5 of the MRV Communiqué is taken as reference as scrap steel emission factor. For standard reference fuels such as diesel, the national emission factor is used (TurkStat Türkiye Greenhouse Gas Inventory 1990-2021, 2024).

In the calculation of Scope 2 greenhouse gas emissions, the emission factor in Türkiye Electricity Generation and Electricity Consumption Point (2022), the latest published by the Ministry of Energy and Natural Resources of the Republic of Türkiye, is used.

Erdemir and its subsidiaries did not purchase and utilize any carbon credits during the reporting period. Carbon credits may be purchased in the coming periods in order to reach our net greenhouse gas emission targets, but how carbon credits will be used, carbon credit strategy and implementation methods will be clarified in the coming period.

<sup>3</sup>In accordance with TSRS 2 C4(a), in the first year reporting period, Erdemir measured its greenhouse gas emissions for the year 2024 with a method other than the Greenhouse Gas Protocol: Corporate Accounting and Reporting Standard (2004) with a method other than MRV.

<sup>4</sup>In the equity approach, the entity calculates its emissions based on its equity share. In this approach, the GHG emissions of the enterprise are calculated in line with its shareholding.

<sup>5</sup>The Scope 2 greenhouse gas emissions in the table are calculated and reported on a location-based basis.

## 6.3. Other Sustainability Metrics<sup>6</sup>

### 6.3.1. Energy Management

Energy Management	2024
Total Energy Consumed (Giga Joule)	185,404,203
Mains Electricity (%)	3.89
Renewable Energy (%)	0.01
Total Fuel Consumed (Giga Joule)	178,181,319
Coal (%)	89.01
Natural Gas (%)	10.98

### 6.3.2. Water Management

Water Management	2024
Total Fresh Water Withdrawn (Thousand Cubic Meters (m <sup>3</sup> ))	85,719
Total Salt Water Withdrawn (Thousand Cubic Meters (m <sup>3</sup> ))	701,828
Total Fresh Water Consumed (Thousand Cubic Meters (m <sup>3</sup> ))	81,675
Total Salt Water Consumed (Thousand Cubic Meters (m <sup>3</sup> ))	63,816
Percent in Areas with High or Extremely High Baseline Water Stress (%)	0 – 5 <sup>6</sup>

<sup>6</sup>It will be evaluated with detailed analysis next year.

The production processes of Ereğli Demir ve Çelik Fabrikaları T.A.Ş. and all of its subsidiaries subject to consolidation were analyzed and the facilities where water use is mandatory and indispensable in their processes were identified. The locations of each of these facilities were assessed for water stress using the web-based ThinkHazard! portal (<https://thinkhazard.org/en/>) provided by the Global Facility for Disaster Reduction and Recovery (GFDRR), a global initiative supported by the World Bank Group. As a result, all facilities are located in locations with low levels of water stress.



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### 6.3.3. Supply Chain Management

During raw material procurement planning and agreements with suppliers, geopolitical risks, customs and environmental regulations in the countries where the miners are located and in Türkiye, access to financing in the miners' countries, mining permitting processes, local taxes on mining products, extreme climate events and the effects of climatic factors in general, and potential risks in the entire logistics chain during transportation from the mine to ports and from these ports to Türkiye are evaluated.

Factors such as producers, owners, ports and sanctions on certain commodities are also taken into account. In this context, information is obtained about environmental and social problems encountered in the countries where supplier companies operate and the current situation is closely monitored through global media sources.

### 6.4. Strategic Initiatives and Targets on the Road to Net Zero Emissions

Erdemir's Net Zero Roadmap is a transition plan that aims to eliminate the Company's carbon emissions by 2050. This plan includes action plans that determine the steps the Company will take to achieve its sustainability goals and that it will implement systematically. Erdemir will continue to take decisive steps towards a sustainable future with improvement and investment activities aimed at reducing carbon emissions in the green transformation process, which aims to achieve net zero emissions by 2050.

Erdemir aims to reduce the sum of Scope 1 and Scope 2 emissions per ton of crude steel by 25% by 2030 and by 40% by 2040 with the DRI (Direct Reduced Iron) projects, which initially run on natural gas, with Solar Power Plants (SPP), Electric Arc Furnace (EAF), energy efficiency and biomass projects. With the availability of green hydrogen, DRI continues to operate with this resource and aims to achieve "net zero" emissions by 2050 through carbon capture and storage projects. The short, medium and long term strategies to achieve these goals are detailed below. Erdemir's intensity targets for 2030 and 2040 and absolute emission reduction targets for 2050 are presented in the Net Zero Roadmap.7

In line with the short-term target, in order to reduce carbon emissions by at least 25% per ton of crude steel produced, a total transformation investment of USD 3.2 billion is planned to be made at Erdemir and Isdemir until the end of 2030, with 70-80% of this investment to be provided from external sources.

Taking into account the information that 96.50% of greenhouse gas emissions belong to Erdemir and Isdemir companies and that Erdemir and Isdemir are the main companies that will be affected by the CBAM risk, the targets in the Net Zero Roadmap were determined specifically for these two companies.

The performance indicator and reduction target determined jointly for Erdemir and Isdemir are as follows:

Performance Indicator	Unit	Base		% Reduction Target Compared to Base Year		
		Gross Value	Year	2030	2040	2050
Scope 1-2 Total Greenhouse Gas Emissions	tCO <sub>2</sub> /TCS*	2.2	2022	25%	40%	Net Zero

\*TCS-Ton Crude Steel

### 6.4.1. Electric Arc Furnace Investment

Electric Arc Furnace is a method of melting scrap with electric arc in steel production. This technology offers an energy efficient production process, in particular by increasing the use of scrap steel and recycling processes.

Erdemir currently produces all of its production with the Basic Oxygen Furnace (BOF) and plans to produce with the Electric Arc Furnace technology. The Electric Arc Furnace investment aims to achieve a significant reduction in greenhouse gas emissions.

### 6.4.2. Energy Efficiency Studies

Erdemir is implementing important projects and investments in various areas in order to realize its net zero emission target by 2050. In this context, it attaches great importance to energy efficiency efforts. Erdemir takes steps to reduce greenhouse gas emissions by making systematic improvements to increase energy efficiency in processes. Erdemir aims to reduce external dependency and maximize energy efficiency through more efficient use of its own resources.

Investments realized within the scope of energy efficiency efforts include the Coke Dry Extinguishing System, Oxy-Fuel Utilization and Solar Power Plant (SPP) projects. These projects optimize energy consumption and reduce environmental impact.

Ongoing investments aimed at increasing energy efficiency include Turbo Generator No. 10, Waste Heat Boiler for the 2<sup>nd</sup> Slab Reheating Furnace, Erdemir-Designed Drive Application, PCI Facility Drive Applications, New Turbo Blower Investment, APC Application at Air Separation Units, and Drive-Controlled Stove Fan for the No. 1 Blast Furnace. These projects aim to reduce emissions by 2022.

### 6.4.3. Solar Power Plant (SPP) Investments

SPP projects play a critical role in our emission reduction and sustainable production processes. These investments in renewable energy are aimed at reducing Scope 2 emissions.

With the SPP projects to be realized in Van and Malatya regions, full capacity production is planned to be realized by the end of 2025. Within the scope of these projects, solar power plants with a total installed capacity of 424 MWp will be installed and annual electricity generation of 770,000 MWh is expected. Through these investments, it is aimed to achieve emission reductions compared to the emissions of 2022, which is set as the base year, and to significantly reduce dependence on fossil fuels.



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## 6.4.4. Biomass Utilization

Biomass utilization is an important strategy for steelmakers to reduce dependence on fossil fuels and lower greenhouse gas emissions. Biomass is a renewable energy source derived from organic waste and as an alternative with a zero emission factor, its environmental impacts are considerably lower compared to conventional coal use. This approach reduces the carbon footprint of production processes while at the same time creating a sustainable energy supply model. In terms of GHG emission management, the use of biomass helps steel mills to achieve net zero emission targets, especially by replacing the use of high carbon emitting coal.

### Raw Biomass > Processed Biomass > Pyrolysis and Carbonization > Biochar

In line with the 2050 net zero emissions target, important steps are being taken to increase the use of biomass. In this context, it is planned to significantly reduce the amount of emissions by gradually increasing the use of biomass with zero emission factor instead of coal. A pilot pyrolysis plant has been established where raw biomass, processed biomass, pyrolysis and carbonization processes are used to convert raw biomass into biochar. With this project, coal utilization will be reduced in various processes such as fossil coal reduction in the Coke Plant, coke dust reduction in the Sinter Plant, PCI coal reduction in the Blast Furnaces and coal reduction in the Steel Mill.

## 6.4.5. DRI (with Natural Gas) Investment

DRI (Direct Reduced Iron) is a method used in steel production in which iron ore is reduced with natural gas instead of fossil coal to produce iron. DRI produces steel at lower temperatures and with lower carbon emissions than traditional blast furnace methods. Especially when applied with low-carbon energy sources such as natural gas, this technology can significantly reduce environmental impacts.

The main reason why DRI technology is environmentally friendly is that it has the potential to reduce carbon emissions. Conventional steel production uses coal to produce iron in blast furnaces, a process that emits large amounts of carbon dioxide (CO<sub>2</sub>). However, when DRI runs on natural gas, emissions are much lower than with coal-fired generation. This helps steel producers manage their greenhouse gas emissions and achieve net zero emission targets.

With the realization of the DRI (with natural gas) investment, it is aimed to achieve a significant reduction in greenhouse gas emissions compared to the base year.

## 6.4.6. DRI (Green Hydrogen) Investment

Green hydrogen is used to extract iron from iron ore, replacing the natural gas used in conventional DRI production. The use of hydrogen in steel production significantly reduces carbon dioxide (CO<sub>2</sub>) emissions. This is because in the reduction process with hydrogen, only water vapor is formed as a by-product and no carbon is emitted. DRI production with green hydrogen has zero carbon emissions. This is considered to be one of the most innovative and effective ways for steel producers to achieve their net zero emission targets.

Erdemir aims to increase the use of green hydrogen with the electrolyzer capacity targets set in Türkiye's Hydrogen Roadmap and to significantly reduce greenhouse gas emissions. DRI (Green Hydrogen) investments constitute one of the Company's most important strategies for managing carbon emissions and achieving zero emission targets. By increasing the Electrolyzer capacity in the country, it is aimed to expand the use of green hydrogen and minimize the environmental impact of steelmaking processes.

### • Türkiye's 2030 Electrolyzer Capacity Target: 2 GW

The first interim target in Türkiye's Hydrogen Roadmap is to reach 2 GW of electrolyzer capacity by 2030. Electrolyzers are devices that convert water into hydrogen gas through electrolysis and the energy used in this process is derived from renewable sources. Reaching this capacity by 2030 will reduce the use of coal and natural gas in steel production, and by making more green hydrogen available for steelmaking, will lead to a significant reduction in carbon emissions.

### • Türkiye's 2035 Electrolyzer Capacity Target: 5 GW

Following the successful completion of the 2030 target, 5 GW of electrolyzer capacity is targeted to be reached in our country by 2035. This increase will enable further upgrading of hydrogen production capacity and significantly increase the rate of green hydrogen utilization in steelmaking. The increased electrolyzer capacity will provide more green hydrogen, which will contribute to a further reduction in carbon emissions.

### • Türkiye's 2053 Electrolyzer Capacity Target: 70 GW

Türkiye's biggest goal in line with its net zero carbon target is to reach an electrolyzer capacity of 70 GW by 2053. This target will both ensure that all hydrogen used in steel production is sourced from renewable energy sources and support Türkiye's goal of net zero emissions by 2053. The 70 GW capacity will significantly reduce the sector's carbon emissions by supplying a large portion of the energy used in steel production with green hydrogen.

## 6.4.7. Carbon Capture and Storage (CCS)

Erdemir aims to realize carbon capture and storage technologies. Among the investments, carbon capture and storage (CCS) technologies are extremely important. CCS technology captures the inevitable emissions from production processes before they reach the atmosphere and safely transfers them to underground storage. Thus, carbon emissions from steelmaking processes are greatly reduced. In particular, this technology will make a significant contribution to achieving our net zero emission target by 2050 and will give a significant impetus to our sustainable production approach.