KAPTAN
DEMİR ÇELİK

TNFD Aligned

(Task Force on Nature- related Disclosures)

Dependency, Impact, Risk and Opportunity Report

2025

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Executive Summary

Kaptan Demir Çelik does not confine its understanding of sustainability solely to environmental obligations; rather, it regards its interactions with nature as a strategic management issue.

In this context, the report assesses the company's dependencies on ecosystems, the environmental impacts arising from its operations, and the potential risks and opportunities emerging from these interactions, in line with the Taskforce on Nature-related Financial Disclosures (TNFD) LEAP methodology.

Analyses conducted within the LEAP framework encompass the identification of the company's nature-interfacing locations (Locate), the measurement of dependencies and impacts on nature (Evaluate), the assessment of related risks and opportunities (Assess), and the definition of an appropriate corporate response strategy (Prepare). Data from the ENCORE platform, WRI Aqueduct indicators, sectoral analyses, and on-site findings have been integrated into this process.

The company's production facilities, located in Marmaraereğlisi, are dependent on regional water resources and are directly linked to water use, climatic conditions, and hydrological cycles. At the same time, the company's activities have measurable impacts on air quality, soil systems, and habitat integrity. Most of these impacts stem directly from industrial operations, while indirect effects arise through the supply chain and logistics processes. Although no endemic or critically endangered species have been identified on-site, regional ecosystem sensitivities particularly concerning vulnerable species such as the Mediterranean tortoise are taken into account.

As a result of the risk analyses, it is anticipated that physical risks arising from climate changesuch as increasing floods, droughts, and heat waves—may lead to operational disruptions, supply chain breakdowns, and cost increases. Under transition risks, factors such as carbon pricing mechanisms (ETS/CBAM), sustainable procurement expectations, and demand for low-emission products have been identified as elements that could directly affect the company's competitive strength.

Kaptan Demir Çelik adopts a comprehensive transformation strategy aimed at turning these risks into opportunities. The company is taking mitigation actions to reduce its carbon footprint through renewable energy investments, energy efficiency projects, process optimizations, and green product certifications (LCA, EPD). In parallel, investments in R&D, low-carbon supply chains, and nature-based solutions are being made to support the company's "green steel" vision.

The scenario analyses presented in the report assess the company's resilience against various nature and climate projections and demonstrate the contribution of initiatives that strengthen its climate adaptation capacity.

The company's sustainability policy is supported by ESG-based (Environmental, Social, and Governance) management principles. Through stakeholder engagement, social responsibility projects, local development support, and an environmentally friendly production model, Kaptan Demir Çelik continues to reinforce its social license to operate and to create economic, social, and environmental value in the regions where it operates.

Introduction and Methodological Approach

Natural capital, referring to the resources and services provided by nature, forms the foundation of all economic activities. However, increasing environmental pressures, biodiversity loss, and the degradation of ecosystem services have made it essential for companies to redefine their relationship with nature. In this context, transparently measuring, assessing, and integrating nature-related interactions into strategic decision-making processes is critical for implementing sustainable business models.

With this understanding, Kaptan Demir Çelik aims to evaluate the impacts and dependencies of its operations on nature within a scientific and systematic framework. This report has been developed in line with the internationally recognized nature-related risk assessment framework, TNFD (Taskforce on Nature-related Financial Disclosures).

The analysis, structured according to the TNFD's LEAP (Locate, Evaluate, Assess, Prepare) methodology, enables a holistic assessment of the company's relationship with nature through four key stages:

- Locate: Identification of areas with interactions with nature (physical facilities, supply chain, areas of influence)
- Evaluate: Determination of ecosystem services, biodiversity, flora/fauna, and dependencies and impacts on nature
- Assess: Systematic analysis of nature-related risks and nature-based opportunities
- Prepare: Structuring of strategy, governance, targets, and reporting mechanisms

The assessments are also supported by sector-based analyses of nature dependencies and pressures obtained from the ENCORE (Exploring Natural Capital Opportunities, Risks and Exposure) platform. ENCORE is a comprehensive risk identification tool designed to determine the extent to which companies depend on natural assets and which ecosystem components are affected by their activities. ENCORE outputs are integrated with TNFD's risk classifications (physical and transition risks) through a one-to-one mapping to enable a consolidated analysis.

In addition, to ensure that the impacts on nature are measured not only qualitatively but also quantitatively, the Biodiversity Impact Protocol (BIP) principles—recognized internationally—form the foundation of this report. Within this scope, indicators such as Mean Species Abundance (MSA) and Biodiversity Intactness Index (BII), which reflect biodiversity integrity, have been assessed. Accordingly, the conducted studies go beyond describing impacts; they also support Kaptan Demir Çelik in developing nature-positive strategies, setting science-based targets, transforming risks into opportunities, and creating long-term value in harmony with ecosystems.

This report provides a transparent, measurable, and comparable analysis of Kaptan Demir Çelik's interactions with nature and serves as a strategic decision-support tool in the company's sustainability journey. The findings not only guide the management of environmental risks but also contribute to the identification of nature-based opportunities, prioritization of investments, and alignment with international sustainability standards.

Corporate Sustainability Framework

As a steel manufacturer operating in the Thrace Region, Kaptan Demir Çelik adopts a production approach that is sensitive to environmental, social, and economic sustainability. The company's corporate sustainability policy not only ensures full compliance with legal obligations but also aims to protect natural assets, support social welfare, and establish a value chain that contributes to the circular economy.

Accordingly, the corporate sustainability approach is structured on the principles of respect for nature, people, and work. Kaptan Demir Çelik's sustainability policy is based on a holistic system that integrates environmental, social, and governance (ESG) elements through a multi-stakeholder perspective. The policy framework is clearly defined under the following main commitment areas:

- Nature and Environmental Protection: Reducing energy consumption, optimizing waste management, protecting ecosystems and agricultural areas, and mitigating the impacts of climate change.
- Climate and Biodiversity Sensitivity: Controlling emissions and hazardous waste, increasing recycling rates, adopting circular economy models, and ensuring the efficient use of natural resources.
- Social Responsibility and Stakeholder Relations: Upholding human rights, supporting local development, promoting transparency and effective communication, and prioritizing social impact.
- Ethical Values and Supply Chain Management: Ensuring compliance with responsible sourcing principles, promoting equal opportunities, combating discrimination, and fostering environmental and social collaboration with suppliers.
- Employee Well-being and Governance: Ensuring occupational health and safety, encouraging employee participation, maintaining consultation processes, and implementing psychosocial support practices.
- Legal Compliance and Risk Management: Achieving full compliance with regulations, setting measurable objectives, and implementing proactive risk assessment processes.

Within this framework, Kaptan Demir Çelik integrates sustainability practices into every stage of its operations, addressing its impacts on nature and society through both preventive and transformative approaches. The company's alignment with international frameworks such as TNFD (Taskforce on Nature-related Financial Disclosures) is based on supporting these policies with tangible outcomes and ensuring their continuous improvement.

One of the main analytical tools used in this study is ENCORE (Exploring Natural Capital Opportunities, Risks and Exposure), which enables a systematic analysis of the interdependencies and pressures between economic activities and natural assets. ENCORE serves as a robust decision-support tool to understand the mutual relationship between nature and corporate activities, to map the financial risks of this relationship, and to identify strategic priority areas. Its methodology explains each sector's interactions with nature through two core concepts: dependency and impact/pressure. This conceptual structure is highly aligned with TNFD's LEAP methodology.

In conducting dependency analysis, ENCORE assesses the extent to which each economic activity relies on specific ecosystem services. For the iron and steel sector, these services include freshwater supply, air quality regulation, erosion control, soil stability, and climate regulation—all of which are essential for the continuity of the industry. ENCORE establishes these dependency relationships based on academic literature, case studies, and sectoral data, rating the level of dependency for each service as low, medium, high, or very high. This approach enables an objective identification of the natural assets upon which a company depends.

Furthermore, ENCORE identifies not only the dependencies on nature but also the pressures exerted by economic activities on natural systems. These pressures may occur through land-use changes, water abstraction, emission releases, waste generation, habitat loss, and soil degradation. For instance, high-temperature metal processing can result in SOx and NOx emissions that deteriorate air quality, while water-based cooling systems can create pressure on local water resources.

ENCORE highlights which natural systems are most affected by such pressures, revealing the feedback loop between the damage caused to nature and the resulting risks to business continuity. This cycle illustrates that activities harmful to nature ultimately endanger their own operational sustainability.

Another important aspect of the ENCORE methodology is its ability to enable extended analysis across the entire supply chain. Not only direct operations, but also upstream (suppliers) and downstream (product use and disposal) processes are associated with nature. This feature allows for the assessment of indirect impacts in high-externality sectors such as iron and steel.

In the conducted evaluations, the significance level of each dependency and impact relationship has been classified according to ENCORE's "materiality" approach. However, these materiality scores are contextual; in other words, the same activity may generate different nature-related risks in different geographies. Therefore, ENCORE results should be interpreted in conjunction with company-specific field data, regional ecosystem maps, and biodiversity indicators. Since ENCORE itself operates at a global and sectoral scale, it is essential to reinforce its outputs with complementary data sources where local details are not captured.

As of 2024, the ENCORE methodology has undergone a comprehensive update. This update has expanded the scope to include cultural ecosystem services, reclassified pressure types, and enabled more detailed analyses of value chain impacts. Consequently, nature-related impacts can now be identified across a wider spectrum and with greater precision.

This tool provides a systematic and methodological foundation for determining which natural assets are most critically linked to Kaptan Demir Çelik's activities in terms of both dependencies and impacts.

Overview of the TNFD and LEAP Methodology

The need to make the relationship between nature and finance visible and manageable has become one of the most critical corporate agendas today, following climate related risks. In this context, the Taskforce on Nature-related Financial Disclosures (TNFD) is a global initiative designed to help organizations systematically identify and disclose their nature-related risks and opportunities. TNFD has developed a dedicated methodology called LEAP (Locate, Evaluate, Assess, Prepare) to integrate nature related interactions into accounting, strategy, and investment decision-making processes.

The LEAP approach addresses nature relationships through a four step process: Locate, Evaluate, Assess, and Prepare. These stages enable organizations to systematically map their dependencies and impacts on nature, conduct risk and opportunity analyses, and develop informed strategies.

In the Locate stage, the objective is to identify all areas where the company interacts directly or indirectly with nature. This includes mapping physical assets (plants, sites), supply chains, logistics routes, and potentially affected geographic regions. Additionally, indicators such as the biological value, sensitivity level, and ecological integrity of the ecosystems within these areas are assessed.

The Evaluate stage focuses on identifying the company's dependencies and impacts on nature i.e., the pressures it exerts on natural systems based on the interaction points determined in the previous step.

TNFD guidance recommends using an IPBES (Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services)based classification during this listing process. These dependencies and impacts are then combined with operational data, spatial datasets, geographic information systems, and literature based coefficients to determine the level of exposure.

The third stage, Assess, analyzes the risks and opportunities that may arise from nature interactions. This phase includes both static assessments reflecting the current state and forward-looking analyses that consider future scenarios.

The final stage, Prepare, involves developing strategies, establishing governance structures, and setting up monitoring and reporting mechanisms based on the findings. It includes defining nature-positive targets, creating action plans, selecting performance indicators, and developing communication strategies with stakeholders.

Together, these four stages provide the foundation for conducting a Dependencies, Impacts, Risks & Opportunities (DIROs) analysis. The LEAP methodology not only supports the identification of environmental impacts but also encourages companies to develop business models that integrate nature into ethical, strategic, and financial dimensions. In this context, the biodiversity-focused report prepared for Kaptan Demir Çelik utilizes the LEAP framework as a guiding structure.

Data Sources and Analytical Tools Used

Within the global sustainability framework, measuring and managing relationships with nature has become a strategic necessity for the long-term success of businesses. In this context, the ENCORE (Exploring Natural Capital Opportunities, Risks and Exposure) platform, used in integration with the "Assess" stage of the TNFD framework, enables a systematic analysis of sectors' dependencies on natural assets and the pressures they exert on these assets.

ENCORE data clearly reveals the extent to which a company depends on ecosystem services and the nature of its impacts on the environment, thereby making the financial implications of nature-related risks more visible.

In the context of the iron and steel sector in which Kaptan Demir Çelik operates, the primary dependencies on natural assets include water, biodiversity, soil, and climate.

Steel production, in particular, is highly dependent on water resources. Interruptions in water supply due to factors such as drought, pollution, or regulatory restrictions can lead to production disruptions and, consequently, operational risks.

When ENCORE's dual assessment of dependencies and impacts is applied in conjunction with TNFD's nature-related risk assessment framework, it provides a comprehensive view that allows the company to identify both its risk exposure and nature-based strategic opportunities.

Locate - Determination of Locations with Nature Interactions

This section analyzes the primary areas where Kaptan Demir Çelik's operations interact with nature. Beginning with the company and site location profile, the assessment evaluates the company's dependencies on and impacts to nature both at the specific facility level and across the organization as a whole.

Company Overview and Location Profile

Kaptan Demir Çelik is a steel manufacturer operating under Kaptan Group, which was established in 1968. Located in the Marmaraereğlisi district of Tekirdağ Province on the northern coast of the Marmara Sea, the Steel Mill plant has an annual billet production capacity of 1,400,000 tons since 2002. Since 2003, the facility has also been producing gaseous oxygen, liquid oxygen, and liquid argon, supplying surplus output to the market. The Marmaraereğlisi Rolling Mill, integrated with the steelmaking plant, has an annual production capacity of 1,000,000 tons. As of 2023, the commissioning of the Wire Rod Mill (WRM) and Special Bar Quality Mill (SBQ Mill) facilities has added an additional 550,000 tons of annual production capacity.

Since the Electric Arc Furnace (EAF) process primarily relies on scrap metal, its demand for primary raw materials such as iron ore and coke coal is considerably lower than that of traditional integrated blast furnace operations. In this regard, Kaptan Demir Çelik follows a production model aligned with circular economy principles, thereby reducing environmental degradation associated with raw material mining.

Geographically, the Marmaraereğlisi facility is located within a coastal industrial zone, approximately 90 km west of Istanbul. The surrounding area consists of agricultural lands and small settlements situated on a coastal plain. Although the plant's proximity to the sea theoretically allows for seawater use, the facility remains highly dependent on freshwater resources (groundwater). Both the EAF process and rolling mills require intensive water cooling during production; thus, the facility's freshwater consumption is relatively high. To sustain its operations, Kaptan Demir Çelik requires uninterrupted access to local freshwater resources. Consequently, due to its coastal location, the Marmaraereğlisi facility operates with environmental sensitivities related to water resource access, marine ecosystem protection, and climate-related risks.

The Tekirdağ region and the Thrace area in general are characterized by intensive agricultural activity and increasing drought trends, making them prone to water scarcity as well as soil erosion and desertification risks. The company's dependencies on nature (critical ecosystem services and natural resources required for operations) and impacts on nature (positive or negative effects of its activities on natural assets and ecosystems) will be evaluated under the main thematic categories in the following sections.

Interaction with Ecologically Sensitive

The Marmaraereğlisi region, where Kaptan Demir Çelik operates, is located in the northwestern part of Thrace, at the intersection of both terrestrial and coastal ecosystems. Although the company's operating area exhibits significant local habitat diversity and species richness, it does not directly overlap with any internationally designated conservation areas such as Key Biodiversity Areas (KBA), Ramsar Sites, or Natura 2000 zones. However, this does not imply that the region holds low ecological value. The ecosystems surrounding the company's operational area are important due to their proximity to wetlands, agricultural mosaic structure, and coastal zone ecosystems.

According to the species inventory specific to Marmaraereğlisi, various terrestrial and coastal flora species, farmland birds, reptiles, and invertebrates typical of steppe habitats have been recorded within and around the project area. However, no species listed under IUCN, CITES, or Bern Convention protection categories have been identified. The fragmented habitat structure—shaped by agricultural land use—is significant in the context of habitat fragmentation and loss of integrity, concepts emphasized in TNFD's definition of systemic nature-related risks.

In addition, small lagoon-type wetlands and groundwater bodies located along the Marmaraereğlisi coastline indicate that the project site could indirectly affect environmentally sensitive systems. Although these habitats are not formally designated as Ramsar sites, they may serve as resting and feeding grounds for migratory waterbirds, representing a form of indirect interaction with protected areas that should be carefully considered within the LEAP methodology.

The area also features a landscape interwoven with agricultural and tourism activities. Consequently, the high land-use pressure limits available habitats for local species and particularly constrains those that require larger territories, leading to a reduction in viable habitats.

In summary, Kaptan Demir Çelik's Marmaraereğlisi facility, while not located within an area under international protection status, is surrounded by ecosystems that possess regionally sensitive characteristics. This situation presents indirect risks related to habitat connectivity, species mobility, and microecological balance. Accordingly, under the TNFD framework, the location is characterized as one with systemic nature-related impact potential and a broad ecological influence zone.

Supply Chain Dependencies and Indirect Areas of

Kaptan Demir Çelik's production activities encompass a wide range of supply and transportation processes, from raw material procurement to final product delivery. The company does not produce from ore but instead operates a scrap-based steel production model. While this approach significantly reduces the direct nature impacts associated with traditional mining operations, it does not eliminate the indirect environmental impacts that arise throughout the supply chain.

In examining the supply chain structure, the company sources a broad range of inputs both domestically and internationally, including metal scrap, refractory materials, ferroalloys, electrodes, chemicals, and logistics services. Among international suppliers, countries in Europe, Asia, and the Middle East play a prominent role, which increases transport-related carbon emissions and pressures on marine and land transport corridors. The environmental impacts of transportation activities contribute indirectly to nature-related risks through habitat fragmentation, air quality deterioration, and the constriction of ecological transition zones.

Sustainability evaluations of the supply chain are systematically monitored through the company's Supplier Risk Assessment Form. In this analysis framework, suppliers are scored based on criteria such as emission levels, water and energy consumption, waste management practices, and possession of environmental certifications. Within this evaluation, some suppliers have been identified as having high greenhouse gas emission impacts.

A significant portion of production inputs is also procured from nearby industrial centers such as Tekirdağ, Çorlu, and Hadımköy. Consequently, the regional environmental impacts associated with the local supply network become more pronounced. At the regional scale, factors such as transport frequency, industrial density, and waste generation potential create indirect but cumulative pressures on the natural systems surrounding Marmaraereğlisi.

Furthermore, refractory materials and chemicals used in the production process are among the inputs with high environmental impact potential. Although the production conditions and transportation of these materials occur outside the company's direct operations, they shape Kaptan Demir Çelik's overall relationship with nature across its entire value chain. In this regard, while the company's supply chain is not dependent on conventional mining activities, it maintains a multidimensional interaction with nature through energy and material-related indirect effects.

Evaluate - Assessment of Nature-Related Dependencies and Impacts

Kaptan Demir Çelik's interactions with nature are multilayered not only at the operational site level but also in terms of broader ecosystem services, biodiversity, and sectoral interdependencies. Within the TNFD's "Evaluate" step, this section systematically analyzes the company's two-way relationship with nature — that is, both the benefits the company derives from nature and the pressures it exerts on it. The analysis is structured and assessed through three main components: ecosystem services, flora/fauna assessment, and sectoral dependencies and impacts within the scope of ENCORE.

Ecosystem Services Analysis

The company's operations demonstrate a high level of dependency on the ecosystem services provided by nature. Among these, freshwater resources are of critical importance for the continuity of production processes. Water is one of the essential inputs for process cooling, system balance, and overall operational efficiency. Therefore, the availability and quality of water resources represent the primary indicators of the company's direct dependency on nature.

From the perspective of regulating services, the company's greenhouse gas emissions, particulate matter releases, and wastewater discharges influence local climate systems, air quality, and hydrological cycles. This illustrates that the company is not only dependent on these natural systems but also exerts regulatory pressures on them.

Considering that the Marmaraereğlisi region integrates both agricultural and tourism activities, the company's operations may generate indirect impacts on landscape integrity, coastal areas, and traditional land-use patterns. Additionally, supporting ecosystem services such as soil health, microbial balance, and habitat continuity form the ecological foundation of the company's long-term environmental sustainability.

The evaluation makes use of the ENCORE (Exploring Natural Capital Opportunities, Risks and Exposure) framework. ENCORE identifies companies' exposure to accelerating environmental changes and provides a sector-based understanding of natural capital risks. Within this framework, a materiality rating system is applied to classify the degree of dependencies and impacts. Accordingly, the magnitude of Kaptan Demir Çelik's effects on various components of nature has been categorized by integrating both sectoral analyses and local operational contexts. The impact levels have been rated based on the intensity, duration, and extent of physical pressure. Explanatory notes have been incorporated into the analysis table to support decision-makers in prioritizing environmental actions.

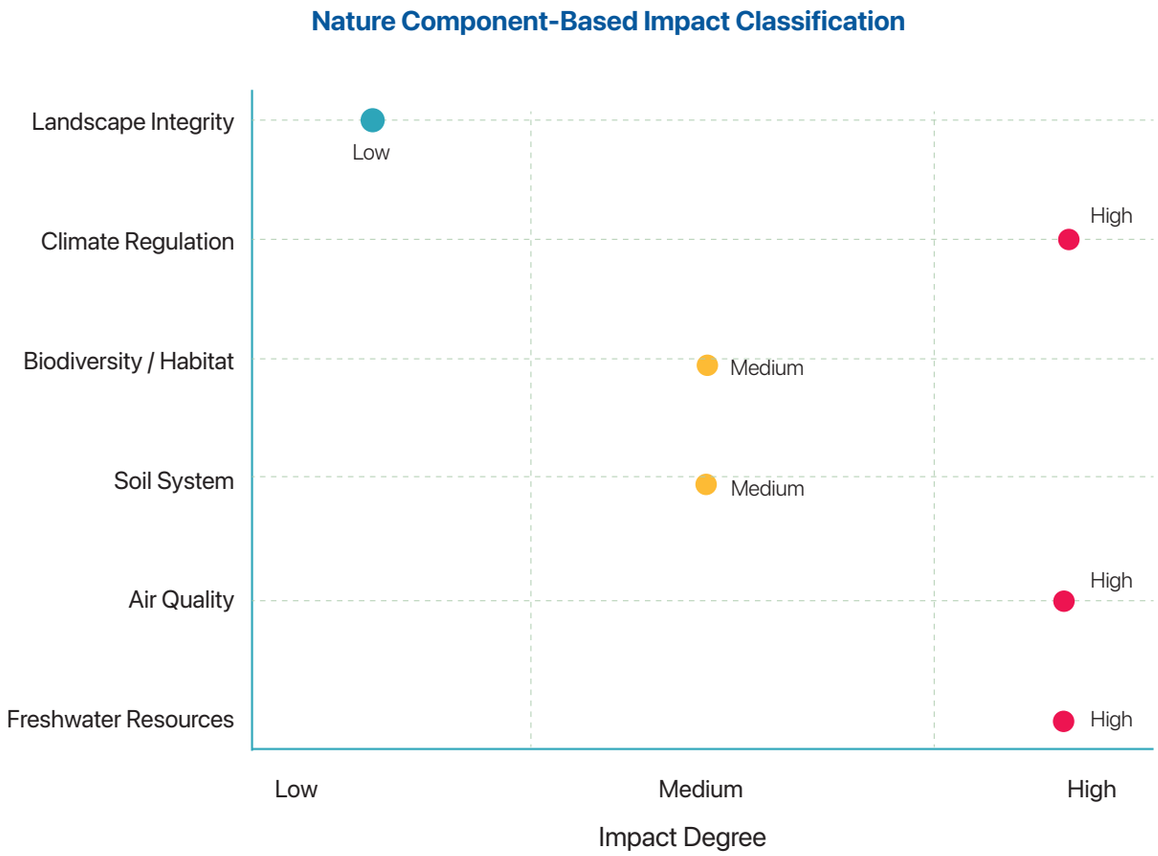


Figure 1. Impact Matrix: Nature Component-Based Impact Classification

Nature Component	Type of Impact	Impact Level	Description
Air Quality	Dust and Emissions	High	Dust and gas emissions (particularly NOx, SOx, and particulate matter) occur during production and transportation processes. These pollutants reduce air quality while generating cumulative impacts on human health, agricultural productivity, and the surrounding natural areas. Depending on meteorological conditions in the region, these effects can spread over a wide area, amplifying their environmental impact.
Climate Regulation	Greenhouse Gas Emissions (Carbon and Energy Use)	High	Carbon emissions resulting from fossil fuel consumption and energy-intensive processes pose significant risks both as global pressures driving climate change and in terms of the company's alignment with carbon policies and ESG-related investments. In the future, these impacts may translate directly into financial costs through economic instruments such as carbon pricing mechanisms.
Soil System	Waste Storage and Land Use	Medium	Physical infrastructure activities and waste management processes can negatively affect the soil texture, permeability, and microbial composition. When soil health deteriorates, its water retention capacity, nutrient cycling, and biological productivity weaken. This represents an indirect but critical risk for long-term operations, as it compromises ecosystem integrity and the sustainability of natural support functions over time.
Biodiversity / Habitat	Habitat Fragmentation and Local Species Pressure	Medium	The company's operational area may have characteristics that weaken the continuity of local habitats. Habitat fragmentation directly reduces ecosystem resilience, diminishing the natural capacity of ecosystems to recover and maintain balance over time.
Landscape Integrity	Visual and Noise Impacts	Low	The visual impact of the facility and the operational noise levels may adversely affect the quality of life in areas located close to residential zones. Noise serves as a source of stress for both humans and sensitive wildlife species, potentially disturbing behavioral patterns and local biodiversity. The visual intrusion of industrial structures may also lead to a loss of economic opportunities in regions with tourism or recreational value, reducing the overall aesthetic and environmental appeal of the area.
Freshwater Resources	Domestic Wastewater Discharge	Low	The company's production processes do not generate any wastewater discharge

Table 1. Nature Components Impact Level Matrix, ENCORE (2023), TNFD v0.4 Beta Framework, IPBES NCP Classification

Flora and Fauna Assessment

Local Species and Habitats

The Marmaraereğlisi Organized Industrial Zone, where Kaptan Demir Çelik operates, is located within an industrial area situated on a flat terrain surrounded by intensively cultivated agricultural lands. The area's low elevation and gentle topography indicate a limited diversity of natural habitats. The company site and its immediate surroundings have historically been subjected to intensive agricultural use, and the natural vegetation is largely restricted to crop species and ruderal plants (weeds growing along roadsides and within fields). There are no forested areas, pastures, or wetlands within the project site; the nearest surface water bodies are small streams located approximately 900 meters to 1.2 kilometers northeast of the site. This suggests that the habitat diversity is limited and the overall habitat quality is low. Intensive agricultural, industrial, and residential pressures have reduced the naturalness of the local ecosystem and hindered the formation of habitats suitable for sensitive species. Consequently, the ecological characteristics of the area reflect a highly modified and anthropogenically influenced environment, with restricted potential for supporting diverse flora and fauna populations.

Flora (Vegetation)

As a result of field surveys and literature reviews conducted within the company's area of influence, 43 plant taxa have been identified. The floristic inventory predominantly consists of common agricultural weeds and cultivated crop species typical of the region. Characteristic species include Anthemis arvensis (corn chamomile) from the Asteraceae family, Vicia sativa (common vetch) from the Fabaceae family, and Clinopodium vulgare (wild basil) from the Lamiaceae family.

All of these plants are widespread species well adapted to agricultural environments, and no endemic or rare plant species specific to the area have been identified. There are no endemic, rare, or threatened plant species within the project site, which is largely attributed to the long-term intensive agricultural use of the land.

Additionally, none of the 43 identified taxa are listed under the IUCN Red List, CITES Appendices, or the Bern Convention. Overall, the floristic diversity reflects the characteristics of a typical steppe–farmland ecosystem under agricultural pressure in the Thrace region, consisting primarily of resilient and widespread species.

Fauna (Wildlife Species)

Despite the limited natural habitats, various vertebrate species adapted to farmland ecosystems have been identified within the site and its surrounding area. Field surveys recorded 3 amphibian species, 12 reptile species, 27 bird species, and 13 mammal species occurring in and around the project area.

Amphibians: The amphibian species observed in the region include the Common Toad (Bufo bufo), European Green Toad (Bufotes viridis), and Marsh Frog (Pelophylax ridibundus), all of which are widespread species commonly found across the Thrace region. Although these species are not strictly dependent on permanent wetlands, they can reproduce in temporary water bodies that form seasonally. Since there are no permanent water sources within the project area, these species are not dependent on the site for breeding.According to the IUCN Red List, all three species are classified as Least Concern (LC) and are not listed under CITES. Under the Bern Convention, all three are included in Appendix III (Protected Fauna Species).

Reptiles: Within the scope of the Environmental Impact Assessment (EIA) conducted for the company's operational area, a total of 12 reptile species have been identified as potentially occurring within and around the site. This diversity includes turtle, lizard, and snake species. The most notable species is the Spur-thighed Tortoise (Testudo graeca), which is classified as Vulnerable (VU) on the IUCN Red List and listed under both Bern Convention Appendix II (Strictly Protected Fauna Species) and CITES Appendix II, indicating a high conservation status.The Spur-thighed Tortoise inhabits agricultural lands and shrub edges, and due to its slow movement and terrestrial behavior, the company's operations may pose risks of habitat loss and collision/mortality for this species. Other recorded reptile species include the Starred Agama (Stellagama stellio), Mediterranean House Gecko (Hemidactylus turcicus), Javelin Sand Boa (Eryx jaculus), Worm Snake (Xerotyphlops vermicularis), Caspian Whip Snake (Dolichophis caspius), Dwarf Snake (Eirenis modestus), Leopard Rat Snake (Zamenis situla), and Blotched Rat Snake (Elaphe sauromates).

Birds: A total of 27 bird species have been identified within and around the project area. These species consist primarily of raptors, songbirds, and other commonly observed avian species in the region. Recorded raptors include the Eurasian Sparrowhawk (Accipiter nisus), Common Buzzard (Buteo buteo), Long-legged Buzzard (Buteo rufinus), Hen Harrier (Circus cyaneus), and Common Kestrel (Falco tinnunculus). According to the Bern Convention, these raptors are listed under Appendix II (Sparrowhawk, Buzzard, Long-legged Buzzard, Hen Harrier) or Appendix II/III (Kestrel is under Appendix II, while several others appear under Appendix III). Other frequently observed species include the Syrian Woodpecker (Dendrocopos syriacus), Rock Dove (Columba livia), Eurasian Collared Dove (Streptopelia decaocto), House Sparrow (Passer domesticus), European Goldfinch (Carduelis carduelis), and European Greenfinch (Chloris chloris), all of which are common and widespread species inhabiting settlement areas and open agricultural lands.All identified bird species are non-endemic and categorized as Least Concern (LC) on the IUCN Red List. Therefore, there are currently no globally threatened avian species recorded within the project area. Under the Bern Convention, 12 species are listed in Appendix II (strictly protected), 10 species in Appendix III (protected), and 5 species are not included in the Bern Appendices. From the perspective of CITES (Convention on International Trade in Endangered Species), 6 bird speciesprimarily raptors are listed under Appendix II, while the remaining 21 species are not listed.According to Central Hunting Commission (MAK) regulations, hunting of several bird species in the project vicinity is prohibited or restricted. Overall, the avifaunal community of the area comprises widespread species adapted to agricultural and semi-urban habitats, and the company site does not represent a critical habitat for birds. Operational activities may lead to temporary displacement of individuals, but due to the high mobility of these species, they are expected to relocate to suitable habitats beyond the immediate project area.

Mammals: A total of 13 mammal species are considered likely to occur within and around the project area. Small mammals and medium-sized carnivores constitute the majority of this group. Recorded species include the Southern White-breasted Hedgehog (Erinaceus concolor), Lesser Mole Rat (Nannospalax leucodon), Bicolored White-toothed Shrew (Crocidura leucodon), Eurasian Water Shrew (Neomys anomalus), Brown Rat (Rattus norvegicus), House Mouse (Mus musculus), Wood Mouse (Apodemus sylvaticus), Grey Dwarf Hamster (Cricetulus migratorius), Snow Vole (Chionomys nivalis), European Water Vole (Arvicola amphibius, formerly Arvicola terrestris), Red Fox (Vulpes vulpes), and Least Weasel (Mustela nivalis).None of these mammal species are endemic or rare within the region; most are widespread and well-adapted to the agricultural and rural landscapes of Thrace. According to IUCN Red List assessments, 13 species are classified as Least Concern (LC) and one species, the Lesser Mole Rat (N. leucodon), is categorized as Data Deficient (DD). No mammal species recorded in the area are globally threatened.Given that the project site is located within an organized industrial zone (OIZ) and surrounded by intense human activity, the potential impacts of the company's operations on the local mammal fauna are expected to be relatively low and localized in nature.

Habitat Quality and Anthropogenic Pressures

The above inventory indicates that the project area does not constitute a natural zone with high biological diversity. Due to intensive agricultural activities, industrialization, and nearby settlements, the natural habitats have already been largely transformed. The existing habitat is essentially characterized as a human-modified agricultural ecosystem.

The habitat quality is low compared to rural natural areas, as factors such as soil tillage, pesticide use, and human movement exert continuous pressure on both flora and fauna. There are no significant natural or protected areas—such as forests, shrublands, or wetlands—within the company's area of influence that could serve as important habitats for wildlife.

Sensitive and Endemic Species

Endemic Species

The Thrace region (European side of the Marmara area) is characterized by lower endemic species diversity compared to Anatolia. Across Tekirdağ Province, approximately 390 plant taxa have been recorded, of which 77 species (19.7%) are reported as endemic. Most of these endemic plants are found in more natural habitats and specific microclimatic zones, such as the İğneada–Yıldız Mountains region, while no endemic plant species are present in the agricultural and industrial landscapes of Marmaraereğlisi.

Field surveys conducted within and around the company's production site confirmed that no endemic plant species were detected. All identified plant species are widespread both across Türkiye and internationally. Similarly, no endemic animal species have been recorded within or near the project area. Faunal endemism in the Thrace region is very limited; apart from certain insect species and small insectivorous mammal subspecies, the vertebrate fauna mainly consists of populations shared between European and Anatolian distributions.

Sensitive (Vulnerable) Species and Threat Status

Although most of the species within the company's area of influence are classified as LC (Least Concern), several species exhibit specific ecological sensitivities. Among these, the Spur-thighed Tortoise (Testudo graeca) stands out as a vulnerable species. This tortoise is listed as Vulnerable (VU) on the IUCN Red List, indicating that it faces a medium-term risk of extinction in its natural habitats.

Among bird species, the raptors observed within the project area are generally categorized as LC (Least Concern); however, they hold high ecological significance and are legally protected due to their roles in maintaining ecosystem balance. Notably, species such as the Eurasian Sparrowhawk (Accipiter nisus), Common Buzzard (Buteo buteo), and Common Kestrel (Falco tinnunculus) are strictly protected under the Bern Convention, and their hunting or capture is prohibited under national legislation.

Rare and Threatened Species

Within the company's area of influence, no species classified as Endangered (EN) or Critically Endangered (CR) under the IUCN Red List categories have been recorded. Among the mammalian fauna, the Lesser Blind Mole Rat (Nannospalax leucodon) is listed as Data Deficient (DD), indicating that insufficient information is available to assess its conservation status accurately.

Another species of note in the region is the Least Weasel (Mustela nivalis). As a small carnivorous predator, the weasel plays a vital role in maintaining ecological balance by controlling populations of small rodents. A decline in its population could lead to an increase in agricultural pest species. Although suitable microhabitats for such small predators are limited within the industrial zone, human presence and operational activity may further restrict their occurrence to more distant areas.

In summary, no endemic species were identified within the company's area of influence; however, a few species with relatively high ecological sensitivity have been noted. The protection status of these species is defined under both national and international conservation frameworks.

Protected Areas

Several national and internationally designated protected areas are located in the broader vicinity of the company's site; however, the project area itself is not situated within or directly adjacent to any officially protected zone. The key protected and conservation areas identified in the surrounding region, along with their approximate distances, are as follows:

- **Marmara Sea and Islands Special Environmental Protection Area (SEPA):** Located approximately 1.8 km from the project site, this SEPA covers the coastal and insular zones of the Marmara Sea. Although the company operates on land, potential environmental pressures such as dust emissions, accidental spills, or wastewater discharges could indirectly reach the marine environment. Due to its proximity to the coast, the facility bears a responsibility to avoid indirect impacts on the marine ecosystem.
- **Kartaltepe Nature Park:** Situated about 51 km away, this terrestrial protected area in Tekirdağ Province is beyond the project's direct impact zone due to its distance.
- **Danamandıra Nature Park:** Located approximately 37 km from the site, near the Istanbul provincial border. Given the distance, no direct or indirect interaction with company operations is expected.
- **Çilingoz Wildlife Development Area (WDAand-NaturePark:** Positioned about 43 km northwest of the project site, along the Black Sea coast of Istanbul, this is an important natural conservation area. No significant interaction or ecological linkage is anticipated with the company's activities.
- **Kasatura Bay Nature Conservation Area:** Found roughly 65 km away in Kırklareli Province (Black Sea coast). The large distance places it outside the project's potential zone of influence.

The distances of these protected areas from the project site indicate no direct habitat connectivity or species migration corridors linking them to the company's operational area. There are no National Parks, Natural Sites, or Wildlife Conservation Areas located within or immediately around the company's area of influence.

4.2.4 Dependencies

Global Climate Regulation

Global climate regulation constitutes an indirect yet structural dependency for Kaptan Demir Çelik in ensuring operational stability and continuity. The sustainability of production is inherently dependent on the preservation of climate stability. Low occurrence of climate anomalies—such as extreme heat or cold, floods, and droughts—facilitates optimal cooling efficiency and maintains a stable energy demand profile, both of which are essential for consistent industrial performance.

Regional climatic conditions determine the availability and quality of surface and groundwater resources; therefore, the availability of process water is indirectly linked to this regulating ecosystem service. In addition, the increasing frequency and intensity of extreme weather events pose potential risks of disruption to raw material supply and logistics operations, including port and road transportation, which could adversely affect production continuity.

Water Resources

Water resources refer to the supply of water of appropriate quality for various uses, including household consumption, resulting from the combined contributions of ecosystem services such as water flow regulation, water purification, and other related natural functions.

The continuity and reliability of water supply depend on the combined functioning of ecosystem contributions such as watershed-level flow regulation and natural filtration processes. The regional aquifer, the presence of wetlands and riparian buffers, and basin management practices are key factors determining the availability and quality of the facility's intake water.Although the coastal location of the site implies an indirect interaction with marine systems, the company's dependence on water is fundamentally linked to the functioning of freshwater ecosystems, which are essential for Kaptan Demir Çelik's operational stability and continuity.

Assess - Analysis of Nature-Related Risks and Opportunities

The dependencies and impacts defined above give rise to various risks and opportunities for Kaptan Demir Çelik. In alignment with the TNFD framework, and parallel to the TCFD approach in climate finance, nature-related risks are categorized into two main groups: physical risks and transition risks. Physical risks refer to potential damage or disruption to the company's assets and operations resulting from changes in natural systems. Transition risks, on the other hand, arise from societal responses to nature-related challenges, such as technological transformation, regulatory changes, or shifts in market preferences.Both categories of risk can negatively affect the company's financial performance, but when managed effectively, they may also present opportunities-including cost savings, efficiency gains, and competitive advantages.

The key risks and opportunities that could influence Kaptan Demir Çelik's operations have been identified and evaluated under different future scenarios. In the risk identification process, the company's exposure to water, soil, climate, and biodiversity-related factors was considered, and the potential for each to translate into financial impacts was assessed.Among physical risks, water scarcity and drought, as well as extreme weather events, have emerged as the most significant. Within transition risks, the main concerns include regulatory compliance costs, market and reputational risks, and supply chain vulnerabilities.

Risk Management Approach at Kaptan Demir Çelik

At Kaptan Demir Çelik, risk management is regarded as a core management discipline that ensures the achievement of the company's strategic objectives. The approach encompasses a holistic assessment of strategic, operational, financial, compliance, and environmental/climate-related risks. The risk management process is implemented under the oversight of the Board of Directors and the ownership of senior management, fully integrated into the company's decision-making processes. The organizational structure is designed based on a "two-line responsibility model." As the first line of defense, business units and process owners are responsible for identifying, controlling, and reporting daily operational risks and performance indicators. As the second line, the Corporate Risk and Compliance function establishes methodologies, policies, and standards; conducts risk consolidation, stress testing, scenario analysis, and reporting to senior management.

All corporate risks, including climate-related physical and transition risks, are regularly reported to senior management. If critical thresholds are exceeded, an escalation mechanism is triggered to ensure timely mitigation and decision-making. Independent assurance throughout the process is provided through external verifications and certification audits, including financial independent audits, ISO management system external audits, and second-party reviews conducted by customers and suppliers on a periodic basis.

Risk Management Principles

Risk management is implemented as an organization-wide integrated discipline, directly supporting strategic decision-making processes. The approach is based on the principle of value creation and protection, with prioritization carried out through a cost–benefit perspective, and processes continuously updated within a cycle of continuous improvement. Grounded in transparency and stakeholder communication, the company's risk profile and corresponding mitigation actions are periodically reported to senior management and, when deemed necessary, shared with relevant stakeholders.

Risk Management Framework and Process

The corporate context is continuously analyzed, and the results of these analyses are reflected in the company's Risk/Opportunity Assessment Form. When new equipment or process changes, regulatory or market fluctuations, or location and supply chain modifications occur, risks are redefined and updated accordingly. During the assessment stage, risks are scored based on likelihood, impact, velocity, and detectability, and prioritized using heat maps. In the treatment stage, strategies such as avoidance, mitigation, sharing/transfer, or acceptance are applied. The effectiveness of existing controls is regularly monitored through control self-assessments and early warning indicators to ensure timely response and continuous improvement.

Nature-Related Physical Risks

Risk-1 Risk Definition		Risk Horizon	TCFD Category	TCFD Sub-Category
Physical risks that may arise from extreme weather events, such as river floods, flash floods, and wildfires, could lead to production interruptions, supply chain disruptions, delays in shipments, and damage to production facilities.	• Extreme weather events • Inadequate infrastructure • Equipment and machinery failures caused by temperature increases or decreases • Rising sea and water levels • Inefficient use of freshwater resources, particularly in water-stressed regions • Drought conditions resulting from reduced precipitation • Suppliers' lack of flexibility and resilience against extreme weather events	Medium	Physical	Acute

Risk Management Strategy and Financial Assessment

Climate-Related Physical Risks

Climate-related physical risks are integrated into the corporate risk management processes and are periodically reviewed at the Board of Directors and senior management levels. Within this framework, initiatives related to energy and water efficiency, infrastructure resilience, and emergency response planning are formally approved by management. Considering the coastal context of Marmaraereğlisi, operational plans are regularly updated to address potential risks associated with stormy sea conditions and port closures, floods, and heatwaves.Scenario outputs defined for acute events such as heavy rainfall/floods and extreme heatwaves are used as references to update the company's Business Continuity and Emergency Response Plans. Technical observations indicate that rising temperatures and high humidity conditions, driven by climate change, may increase the risk of malfunctions in automation systems and transformer equipment. To mitigate these risks, protective systems and preventive maintenance strategies are being reviewed and reinforced.

Financial Assessment

Traditional insurance coverage against production interruptions and logistics disruptions is maintained, with deductible and participation clauses optimized based on annual production loss scenarios of 2–5%. Parametric weather insurance instruments are also being evaluated as complementary tools against maritime disruptions, while contractual terms are being strengthened.The potential impact on profitability is estimated within a 15–30% range of EBITDA, comprising three main transmission channels:

(i) Revenue impact – loss of output (tons × contribution margin per unit) during shutdown or slowdown periods, potential penalties and customer attrition due to delivery delays;

(ii) Cost impact – demurrage, rerouting, and spot freight premiums arising from port closures, additional overtime and storage/holding costs linked to increased inventory levels;

(iii) Capital and risk premium – resilience investments (backup lines, drainage systems, protective infrastructure) increasing CAPEX, yet shortening payback periods through avoided downtime and reputation loss.

Given the company's high dependency on maritime logistics (2024 distribution: 77.58% sea, 20.94% road, 1.48% rail), supplier risk assessments and supplier diversification processes are carried out to mitigate risks related to storms and port closures. All company assets are covered by insurance policies, with asset valuations regularly updated; deductible levels and coverage gaps are periodically reviewed to ensure comprehensive protection.

Risk-2 Risk Definition		Risk Horizon	TCFD Category	TCFD Sub-Category
The alteration of precipitation patterns may lead to water stress and drought conditions, causing water scarcity that could directly affect production continuity and result in increased operational and mitigation costs.	• Changes in precipitation levels • Inefficient use of freshwater resources in facilities operating in water-stressed regions	Medium	Physical	Chronic

Risk Management Strategy and Financial Assessment

Regional water stress and drought risks are managed through efficient water use, wastewater recovery, and systematic monitoring and measurement practices. Across the facility, main lines and critical equipment are equipped with meters and monitored for leakages. Gradual drought thresholds are defined, and parameters for well level, conductivity, and temperature are established. Internally, the company plans to implement a water efficiency management system aligned with ISO 46001 and to assess alternative water sources on the supply side (treated wastewater reuse, municipal/secondary water, and feasibility of seawater desalination if needed). In this context, chronic water risk is kept under control through demand reduction, reuse, and resource diversification strategies.

Financial assessment

The risk has the potential to impact EBITDA by 5–15%, primarily through production limitations, shutdowns, and increased water supply and treatment costs. The financial impact is monitored across three components:

(i) Revenue impact: Profit loss is calculated based on the product of reduced/idle production tonnage and unit contribution margin (₺/t).

(ii) Cost impact: Unit water costs (₺/m^3), chemical and energy expenses, and additional treatment requirements increase; in alternative sourcing (tanker, secondary, or municipal water), cost differentials are added as price sensitivity.

(iii) Capital and risk premium: Water efficiency and recovery investments require CAPEX; however, avoided losses from shutdowns, penalties, and quality disruptions shorten payback periods. Scenarios consider variables such as water allocation restrictions and prolonged drought periods to assess additional OPEX exposure alongside avoided losses.

Risk-3 Risk Definition		Risk Horizon	TCFD Category	TCFD Sub-Category
Restrictions on production activities due to the tightening of regulations arising from adverse impacts on ecosystem services (such as mucilage formation in marine ecosystems, forest fires, and habitat loss).	• Failure to take effective measures against changing regulations • Operational constraints	Long	Physical	Acute

Risk Management Strategy and Financial Assessment

Changes in biodiversity regulations and pressures on marine/terrestrial ecosystems are managed through the application of the prevention–mitigation–restoration–compensation hierarchy. Compliance with legal and permit requirements is tracked through conformity records, while the ISO 14001 Environmental Management System, EIA/permit obligations, and biodiversity monitoring programs constitute the existing control framework.

Financial Assessment

The risk can generate financial impacts through operational restrictions/postponements, delays in permits and approvals, additional treatment and monitoring OPEX, habitat compensation/rehabilitation CAPEX, and potential penalties or sanctions. The deterioration of marine conditions (e.g., mucilage) or tightening of protection statuses may result in revenue losses due to temporary capacity reductions and delivery delays. Conversely, proactive compliance and improvement investments reduce downtime probability and reputational risks while strengthening access to green financing and incentive mechanisms. Impact monitoring is consolidated under four categories:

(i) compliance and permitting costs,

(ii) additional treatment and monitoring expenses,

(iii) opportunity costs arising from operational restrictions, and (iv) potential sanction or damage-related costs.

Kaptan Demir Çelik has conducted a biodiversity and ecotoxicity-focused assessment for its operations in Marmaraereğlisi and its surroundings. The assessment confirmed that the operational area is not located within a national park, nature reserve, or any international protection zone, and that no endemic or rare plant species were identified during floristic studies. The region is not classified as a forested area and is not considered a high-risk zone for natural disasters. Accordingly, the company's activities are assessed to have limited and manageable impacts on protected areas and sensitive species.

Nature-Related Transition Risks

Risk-1 Risk Definition		Risk Horizon	TCFD Category	TCFD Sub-Category
The risk of exposure to high financial costs due to fluctuations in CO_2 prices within the framework of carbon pricing mechanisms such as the Emissions Trading System (ETS), the Carbon Border Adjustment Mechanism (CBAM), and forthcoming carbon-related regulations.	• Potential implementation of an ETS and Carbon Tax in Türkiye • Insufficiency of current climate and energy regulations to achieve the expected decarbonization targets at national and international levels • Emergence of additional costs for products exported to the EU under the Carbon Border Adjustment Mechanism (CBAM) within the framework of the European Green Deal	Medium	Transition	Policy and Regulation

Risk Management Strategy and Financial Assessment

Transition risks associated with carbon pricing mechanisms (ETS/carbon tax, CBAM) are managed proactively. The company calculates and verifies its emissions in accordance with ISO 14064 and the GHG Protocol, monitoring them regularly across scopes to ensure a robust basis for ETS/CBAM declarations and cost assessments.

Scenario and stress testing are conducted with the projection that CBAM costs will reach 100% implementation by 2030 and that rising carbon prices will rapidly impact export profitability.

Assuming that Türkiye's ETS will be designed in alignment with the EU system and that carbon revenues will be directed toward transformation investments, the company positions energy efficiency projects, renewable electricity sourcing (I-REC/PPA), and low-carbon technologies as key levers of its transition strategy. The company's 72.6 MWp solar power plant (GES) investments and efficiency initiatives constitute the core of this transformation program.

Additionally, digital energy and steel process monitoring systems enable real-time tracking of emissions and energy intensity per ton; through CARES-certified inputs and product-based LCA/EPD studies, the company aims to align with growing "green steel" market demand.

Financial assessment

The risk is managed within a range where EBITDA could be affected by 15–30%. The impact arises through three main channels:

(i) Direct carbon cost: Under ETS/CBAM, rising tCO_2 prices reduce profitability in export markets. The company models exposure through 25–80 €/tCO_2 scenario and stress tests, monitoring sensitivity via assumptions for price pass-through, product mix, and geographic sales distribution.

(ii) Indirect costs and hedging: Uncertainty in electricity/gas prices and carbon-related cost pass-through are mitigated through PPA/I-REC and energy efficiency measures; the payback period of efficiency investments shortens as carbon prices increase.

(iii) Capital and strategic value creation: Initiatives such as waste heat recovery, electrification, CCUS, and green hydrogen require CAPEX in the short term but generate medium- to long-term value by avoiding CBAM/ETS payments and meeting green steel demand.

Risk-2 Risk Definition		Risk Horizon	TCFD Category	TCFD Sub-Category
An increase in demand for low-emission steel products and a potential decline in market share and/or profitability due to the inability to meet this demand.	• Failure or delay in transitioning to low-carbon technologies and products • Competitors taking rapid action	Medium	Transition	Market

Risk Management Strategy and Financial Assessment

The risk of market share loss arising from the inability to meet the growing demand for low-emission steel is managed simultaneously across the product, operations, supply chain, and commercial axes. On the product side, a "green steel" product family is being defined, and product-level carbon footprint studies are being conducted. In operations, EAF optimization and energy-efficiency projects are being implemented, renewable electricity coverage (via PPA/I-REC) is being expanded, and electrification opportunities are being evaluated. On the supply side, the company procures high-quality and traceable scrap as well as certified low-carbon inputs (e.g., CARES-certified materials). This integrated approach enables the company to remain competitive and differentiated against fast-moving rivals.

Financial assessment

The risk is expected to have a moderate impact on EBITDA, within a 5–15% range. The financial effect arises mainly through three channels:

(i) Revenue impact: If green demand cannot be met, price reductions/discounts or volume losses may occur, which are monitored using the formula [lost volume (t) × unit contribution margin].

(ii) Cost–margin impact: In the short term, LCA/EPD studies, renewable energy use, and efficiency investments generate additional OPEX/CAPEX; however, reductions in energy consumption and Scope 2 emissions offset these through avoided CBAM/ETS costs, thereby supporting margins.

Through this framework, market-driven profit-loss risks are quantified and mitigated to a manageable level via decarbonization and transformation investments.

Risk-3 Risk Definition		Risk Horizon	TCFD Category	TCFD Sub-Category
Risks arising from the increase in insurance costs (Automobile, Commodity, Transportation, Facility, etc.) due to climate change.	• Increase in the frequency and intensity of extreme weather events	Long	Transition	Policy and Regulation

Risk Management Strategy and Financial Assessment

The risk of increased insurance costs due to climate change is managed through a loss mitigation and contractual protection approach. Policies are reviewed annually, with coverage limits, deductibles, exclusions, and sub-limits evaluated in detail.

According to the Meteorological Extreme Event Database, 1,257 events were recorded in 2024 (≈35% heavy rainfall/flood, 20% storm, 18% hail). During the reporting period, no incidents affecting the facility under insurance clauses were observed.

Financial assessment

The risk is managed at a LOW level (impact on EBITDA estimated between 0.5–5%). The most significant impacts arise from business interruption and related costs.

Business interruption (BI) and additional expenses include post-event repair, replacement logistics, overtime, and temporary procurement costs, all of which are significant in terms of coverage limits. The company plans to collaborate with insurance providers and risk engineers on climate-related clauses in the upcoming period. This collaboration aims to reduce potential losses, improve policy conditions, and stabilize premium fluctuations-ensuring that the financial impact of insurance cost increases remains measurable and manageable.

Nature-Based Opportunities

Kaptan Demir Çelik has identified its climate-related risks and aims to transform these risks into value-generating opportunities. The opportunity areas outlined in the table below are assessed through the lenses of decarbonization, efficiency technologies, and nature-based solutions (NbS). Through its integrated approach, the company mitigates pressures on ecosystem services, enhances resource security, and reduces environmental and carbon footprint impacts.

The prioritization of opportunities is based on criteria such as risk mitigation potential, contribution to operational continuity, reduction in unit costs (OPEX), capital efficiency (CAPEX/payback), and reputation/financing accessibility. Nature-based applications are positioned as complementary to technological investments and are implemented in collaboration with supply chain partners and local stakeholders, under a governance framework grounded in Monitoring, Reporting, and Verification (MRV). Through these initiatives, Kaptan Demir Çelik is transforming its "green steel" vision into an integrated value proposition that extends from water efficiency and climate adaptation to product differentiation.

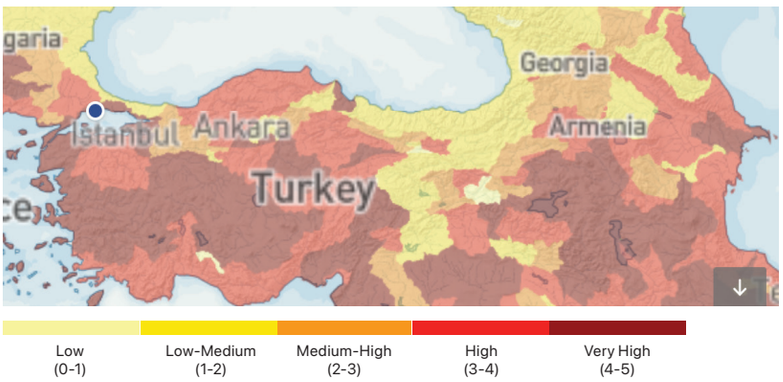
Opportunity Area	Impact on the Company
Green Steel and Low-Carbon Technologies	It reduces tCO_2e intensity, limits CBAM/ETS cost exposure, and lowers unit costs through energy efficiency.
Renewable Energy Investments (Solar Power Plants, PPA/I-REC)	It reduces Scope 2 emissions, provides protection against electricity price volatility, and strengthens long-term cost visibility.
Energy Efficiency Projects	It reduces kWh/t consumption, increases operational efficiency and line stability, and shortens payback periods.
Low-Carbon Product Development (LCA/EPD)	It enhances compliance with green procurement specifications, enables the creation of a green premium, and increases the likelihood of being preferred by strategic customers.
New Market Opportunities	It expands access to the EU and selected markets with low-carbon products and diversifies revenue streams.
Carbon Credits and Certifications	It provides additional revenue and offset options through verified reduction/renewable projects and strengthens sustainability disclosures.
R&D and Technology Development	It enhances capacity in electrification, waste heat recovery, CCUS, and process optimization, supporting medium- to long-term competitiveness.
Increased Customer Interest	It strengthens customer loyalty through transparent traceability and a low-carbon portfolio, providing an advantage in sales cycles.
Establishing a Green Steel Brand	It strengthens brand value and differentiation, while enhancing prequalification and visibility in green building and infrastructure tenders.
Water Efficiency and Climate Adaptation	It reduces m^3/t water consumption and treatment costs, while strengthening production continuity against drought and water allocation risks.
Support for Electric Vehicle Production	It diversifies the product mix with grades suitable for the EV segment and strengthens the company's supplier position in the growing market.

Priority Areas

To manage nature-related issues and maintain operational stability, companies must clearly map out the priority geographies where ecosystem sensitivity is high or where nature-related risks are concentrated. Beyond merely identifying sensitive areas, it is essential to determine where the organization's dependencies on nature, significant impacts, clusters of risks, and opportunity areas are located. This enables resources to be directed toward the right focal points, thereby enhancing the organization's capacity to generate nature-positive outcomes.

In this context, Kaptan Demir Çelik identifies its coastal facility in Tekirdağ/Marmaraereğlisi and its surrounding area of influence as a priority region. The assessment includes a holistic evaluation of water security and quality (groundwater, network/surface water, coastal receiving environments), ecosystem health (coastal–marine and terrestrial patch ecology), biodiversity, and regulatory/reputational dimensions.

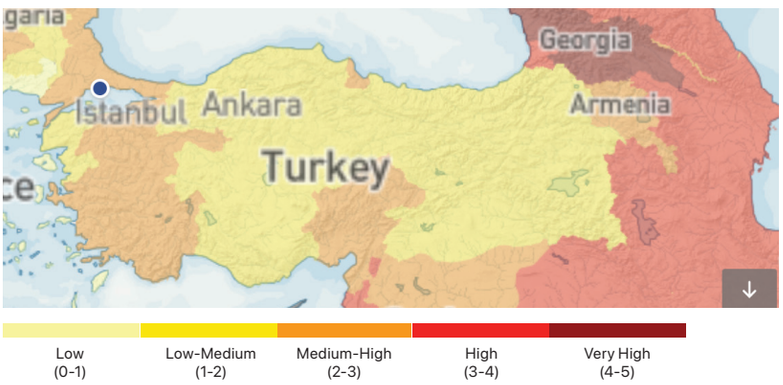
Physical Water Risks – Quantity



Marmaraereğlisi and its surrounding region are classified as areas under high water quantity risk. According to outputs from the WRI Water Risk Atlas, the region exhibits a fragile structure due to drought trends, irregular precipitation patterns, and hydrological fluctuations driven by climate change. These conditions are significant enough to potentially cause restrictions in water availability for production processes.

For Kaptan Demir Çelik, this risk represents a critical dependency area in terms of operational continuity. Water scarcity and irregular supply have the potential to directly affect both production capacity and cost structure.

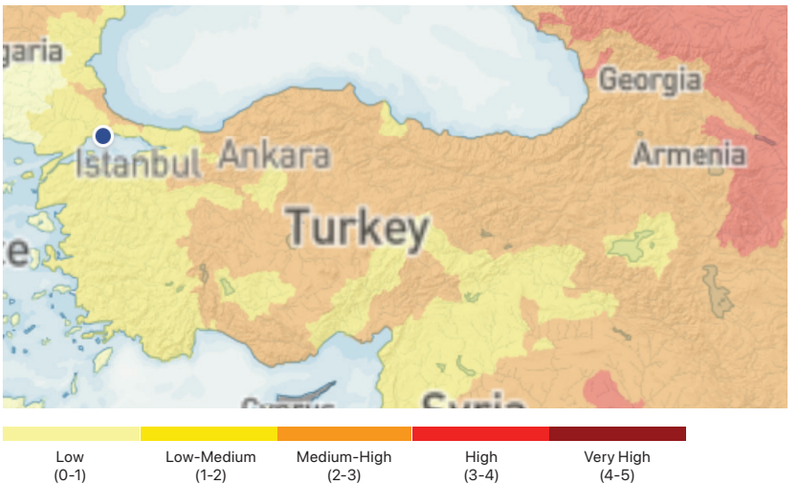
Physical Water Risks – Quality



The Marmaraereğlisi region is classified as being under moderate risk in terms of water quality. According to WRI data, land-based organic loads across the Marmara Sea are showing signs of deterioration in eutrophication indicators, indicating a decline in water quality. This situation reduces the suitability of existing water sources for use.

In connection with the company's operations, the decline in water quality may lead to an increased need for water treatment, higher water management costs, and greater regulatory compliance pressures.

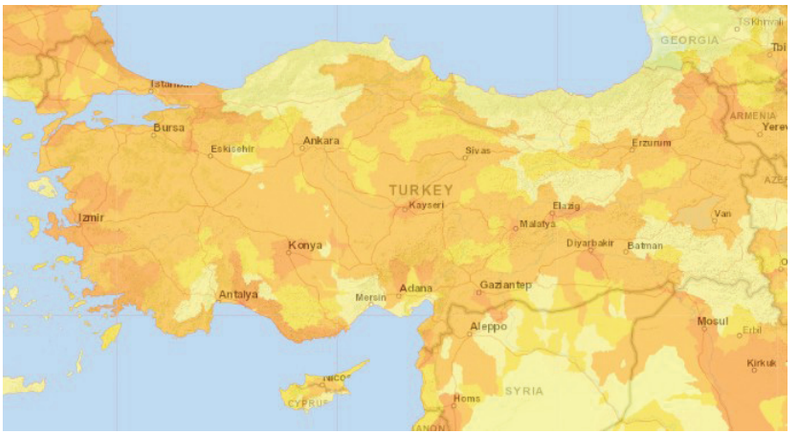
Regulatory and Reputational Risks



According to WRI data, the Marmaraereğlisi region presents a low level of regulatory and reputational risk. Local authorities and communities in the area demonstrate a certain degree of sensitivity regarding water use and environmental impacts.

While direct operational pressure remains limited in the short term, the potential tightening of environmental regulations, stricter management of water resources, and growing public expectations over the long term may lead to additional compliance costs and reputational risks for the company. Therefore, within the TNFD framework, the region is considered a priority area that should be monitored closely for regulatory and reputational sensitivities.

Pressures on Biodiversity



In the Marmaraereğlisi region, both terrestrial and marine ecosystems are under pressure from urbanization and port-related activities. According to data from the WWF Biodiversity Risk Filter, industrial, port, and settlement pressures are altering the coastal line and coastal habitats, thereby weakening the region's overall ecological integrity.

As the sensitivity of coastal and marine receiving environments increases, discharge limits and monitoring requirements tend to become more stringent. This can lead to additional needs for advanced treatment/cooling CAPEX, as well as increases in chemical, energy, and laboratory OPEX, and expanded biological monitoring requirements.

Scenario Analysis and Resilience

Scenario analysis is used as an important tool to understand the potential impacts of different global developments and policy directions on operations, to test the effectiveness of corporate strategies, and to enhance future adaptation capacity. Kaptan Demir Çelik integrates scenario analyses into its strategic planning process to assess key climate- and nature-related risks and opportunities. For the resilience analysis, nature-related scenarios were evaluated. These scenarios encompass four distinct future pathways, structured along two main axes: the rate of degradation in ecosystem services and the level of adaptation by market and policy actors.

Nature Scenarios

Scenario 1 – Ahead of the Game	*Represents a scenario in which strong progress is achieved on carbon and climate issues, and losses in nature remain limited.*
Scenario 2 – Go Fast or Go Home	*This scenario represents a context where the nature crisis has become evident, creating strong pressure for rapid and systemic action, with public and policy attention shifting toward nature.*
Scenario 3 – Sand in the Gears	*It is defined as a scenario in which ecosystems deteriorate rapidly, while policy and financing remain insufficient, leading to acute disruptions and rising costs.*
Scenario 4 – Back of the List	*This scenario describes a context in which nature remains a low priority, short-term mitigation measures and temporary strategies are developed, and long-term planning and investments are required.*

Resilience

Kaptan Demir Çelik will enhance its resilience by testing uncertainties within the nature-related scenarios across three key dimensions: water management, energy transition, and corporate reporting. The company's strategy supports the transition to a low-carbon economy while simultaneously aiming to strengthen resilience against climate- and nature-related physical risks.

"Ahead of the Game" (politikalar ve piyasa hızlı sıkılaşır):

The company's planned renewable energy (solar power) and energy efficiency initiatives will be supported by a roadmap that includes process upgrades and, in the long term, hydrogen/CCU options.

In such a scenario, these investments will provide an advantage in addressing carbon costs and supply chain expectations. On the nature dimension, existing practices such as water consumption monitoring, treatment, and discharge control help reduce ecosystem pressures and support production continuity.

"Go Fast or Go Home" (Regulations and Market Demands Accelerate Rapidly):

In this scenario, transparency and evidence-based reporting become decisive factors. Kaptan Demir Çelik's ISO 14064/GHG Protocol–compliant inventory and scope-based emission reporting form the essential foundation for meeting CBAM and supplier due diligence expectations from customers.

Additionally, climate- and nature-related reports, the public disclosure of the climate transition plan, regular reporting, and stakeholder communication further strengthen the company's accountability toward market and financial actors.

"Sand in the Gears" (Insufficient Policy/Financial Support):

In an environment with weak external incentives, resilience is maintained through operational efficiency and water security. Monitoring water abstraction in cubic meters and implementing controlled discharge practices help reduce the risk of production interruptions during droughts or water quality fluctuations.

"Back of the List" (Nature/Climate Priorities Fall Behind on the Global Agenda):

Even if policy pressure diminishes, the company continues to maintain its environmental performance through ISO 14001/ISO 50001 management systems and TCFD/TNFD frameworks. Its voluntary and proactive approach enables the continuity of reputation and customer contracts. The company's 2030–2040–2053 emission reduction targets and regular roadmap updates ensure that this resilience remains sustainable over time.

Prepare- Corporate Response, Strategy and Governance

Nature-Positive Vision and Targets

Kaptan Demir Çelik aims to establish a nature-positive, regenerative, and resilient business model that reduces its environmental impacts while operating in harmony with nature. The company's 2053 Net-Zero Roadmap and related targets go beyond strategies developed solely to combat the climate crisis — they are built upon a holistic approach that encompasses ecosystem integrity, biodiversity conservation, and the adoption of nature-based solutions (NbS).

Within this framework, the company's climate transition strategy is positioned as a core component of its nature-positive transformation. The strategy includes actions to reduce the carbon footprint, manage emission-related financial risks, transition to climate-aligned production technologies, and integrate sustainability-oriented investment processes into all business operations.

Strategic Goals and Priorities

Emission Reduction and Lowering Carbon Intensity

Kaptan Demir Çelik will implement structured projects aimed at reducing both direct (Scope 1) and indirect (Scope 2) greenhouse gas emissions. The company will enhance energy efficiency in furnace systems, deploy waste heat recovery systems, and evaluate renewable energy sourcing options to further lower its carbon footprint.

TCFD Adapted Risk Analysis and Management

Physical and transition risks related to climate change have been analyzed in line with the TCFD (Task Force on Climate-related Financial Disclosures) framework and integrated into the company's corporate risk management processes. Within this scope, the potential impacts of carbon pricing, regulatory changes, and shifts in market demand will be reflected in the company's financial scenarios.

Green Transformation and Compliance with the EU Green Deal

In line with the European Union's Carbon Border Adjustment Mechanism (CBAM) and Green Deal objectives, the company will implement measures such as environmental compliance reporting, low-carbon production, and product life-cycle management to mitigate risks affecting its export markets.

Sustainability and Traceability in the Supply Chain

It is aimed to strengthen environmental responsibility throughout the entire value chain, from raw material procurement to the final product. In this context, supplier selection criteria will include environmental performance, assessment of indirect impacts on nature, and the establishment of sustainable resource use policies.

Adoption of Nature-Based Approaches

The company evaluates the potential of Nature-based Solutions (NbS) to achieve its nature-positive goals, particularly by planning pilot projects focused on rehabilitation, green infrastructure, and ecosystem service support initiatives.

Corporate Strategy and Roadmap

Kaptan Demir Çelik's corporate strategy and roadmap will be built upon an integrated model that unites climate and nature approaches under a single framework. This model will address decarbonization, water management, biodiversity, and supply chain resilience in a coordinated manner, integrating the "avoid–reduce–restore–compensate" hierarchy with financial resilience and transparent reporting principles. Under the oversight of the Board of Directors, strategic decisions will have clear institutional ownership, and scenarios, thresholds, and performance indicators will be reviewed regularly.

The company will operate in line with its emission reduction targets of 15% by 2030, 50% by 2040, and net zero by 2053. These goals will be supported in the short and medium term through energy efficiency, process optimization, expansion of the renewable energy portfolio, waste heat recovery, and electrification; and in the long term by the gradual deployment of green hydrogen and carbon capture, utilization, and storage (CCUS) technologies.

Within the framework of carbon and energy transition, the share of renewable energy will be increased through on-site solar power plant (PV) projects and/or long-term power purchase agreements (PPAs) to hedge against price volatility. Electric arc furnace efficiency, production line modernization, and waste heat recovery projects will enhance both energy (kWh/ton) and carbon intensity (tCO_2e/ton) indicators. Electrification of processes, the use of green hydrogen, and site-specific CCUS solutions will be progressively evaluated and scaled up.

In circularity and material management, scrap quality and traceability will be improved, while the valorization of slag and by-products will be encouraged. On the product and market side, the development of a "green steel" portfolio supported by LCA and EPD certifications will strengthen competitiveness and differentiation. Supply and logistics resilience will be enhanced through multimodal structures, alternative route/terminal reserves, and climate risk assessments of critical suppliers, ensuring overall sustainability of the value chain.

Kaptan Demir Çelik's low-carbon roadmap includes:

- Short term: Strengthening MRV systems, prioritizing efficiency measures, and preparing for renewable installations/contracts.
- Medium term: Transitioning to renewable generation, implementing waste heat recovery, and scaling up nature-based solutions.
- Long term: Deploying advanced technologies such as green hydrogen and CCUS, aligned with the 2040 interim goal and the 2053 net-zero vision.

Through this comprehensive roadmap, the company will mitigate carbon cost impacts, manage water and biodiversity risks, and establish a resilient, market-aligned value proposition that ensures long-term sustainability and competitiveness.

Monitoring, Reporting and Performance Indicators

In line with the company's sustainability approach, key indicators are defined and monitored at both environmental and governance levels, structured to be directly linked with climate-related risks. The monitoring mechanism is implemented in alignment with the TCFD and TNFD frameworks, ensuring regular analysis of the company's carbon footprint, nature dependencies, and ecosystem impacts.

Category	TNFD/TCFD Indicator	Metric	2024	2023
Climate Change	Greenhouse Gas Emissions	Scope 1(tCO_2e)	148.563	118.778
		Scope 2(tCO_2e)	235.799	201.772
		Scope 3(tCO_2e)	1.120.173	950.959
Tüketim ve Kirlilik Giderme	Water Consumption	Resource Use (m^3)	1.145.474	958.564
	Water discharge	Discharged to Receiving Environment (m^3)	63.266	62.906

Organization-Level Nature and Climate Impacts and Dependencies

Engagement with Relevant Stakeholders and Social

Kaptan Demir Çelik conducts a comprehensive stakeholder engagement strategy aimed at enhancing social welfare, strengthening long-term, trust-based relationships with local stakeholders, and maintaining the social acceptance of its operations. This strategy includes social responsibility projects, partnerships with charities, volunteer work, education programs, support for local initiatives, community forums, and regular communication channels.

In line with this approach, the company allocated a total of 20.37 million TL to social responsibility and philanthropy initiatives over the last four years (2021–2024). These socio-economic contributions encompass education, environment, disaster relief, cultural and artistic activities, local development projects, and social solidarity initiatives.

Kaptan Demir Çelik places great emphasis on understanding the needs and expectations of local stakeholders when planning these activities. Regular stakeholder meetings, collaborations with local authorities, community forums, and voluntary participation mechanisms ensure that the perspectives and requests of local communities are incorporated into decision-making processes. Through these efforts, the company not only enhances public trust but also sustains its "social license to operate" responsibly.

In 2023, 41.88% of total procurement expenditures were made through local suppliers — a notable increase driven by the launch of the Kangal rolling mill project and related local material and service needs. In 2024, the local procurement rate decreased to 34.22%, primarily due to the completion of the investment phase and a rise in the share of imported inputs. These figures reflect the company's strong commitment to local sourcing while also highlighting the need for continuous monitoring and improvement in supply chain sustainability.

Beyond supporting regional economic development, Kaptan Demir Çelik creates holistic value in social and environmental domains. Through transparent and consistent communication, the company identifies local needs accurately and delivers long-term social contributions via its sustainability initiatives. Covering a broad range from education and environment to cultural heritage and disaster relief, these social investments strengthen regional development dynamics. Prioritizing local suppliers further contributes directly to the sustainability of the economic cycle.

Through all these efforts, Kaptan Demir Çelik positions itself not only as a steel producer but also as a trusted partner that creates value for the communities in which it operates and supports social progress.

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