

Task Force on Climate-related Financial Disclosures (TCFD) and Tüpraş

TRANSITION RISKS

TCFD Risk Category	Risks	Opportunities	Definition/Characteristics	Explanation	Tüpraş's Approach-Action	Impact	Probability	Term
Policy and Compliance Risk	Changes in national and international carbon pricing policies and implementation of new legislation	Participating in the carbon market	Legislative changes implemented to the regulatory framework in order to encourage the transition to a low carbon economy in direct operations or in the supply chain are defined as policy and compliance risk.	The effects of the Emissions Trading System (ETS) and the Carbon Border Adjustment Mechanism (CBAM).	In addition to national legislation, the possible impacts of EU regulations and international legal regulations on Tüpraş's activities are evaluated regularly. Work is carried out on alternative action scenarios. Similarly, developments in the ETS and Climate Law and legislative processes are closely monitored. Tüpraş takes internal carbon pricing into account as a metric in its feasibility studies of investment projects. The investments to be carried out in new areas are planned by giving consideration to EU Taxonomy.	High	Likely	Medium Term
		Use of low-emission energy sources and new technologies	The enactment of carbon taxes in a manner that will affect the costs, stakeholder sensitivity regarding fossil fuels (Paris Agreement, Green Deal), commissioning of the emission trading system, changes in the perception and sensitivity of investors and finance providers in terms of sustainability, legislative changes which may impact activities, costs and sales such as reducing greenhouse gas emission limits and introducing a carbon tax and restrictions on the use of vehicles running on fossil fuels in urban environments are evaluated within this scope.					
		Use of incentives in the policies announced regarding compliance						
Market Risk	Major Suppliers' Carbon Pricing Risk		Carbon pricing can cause major suppliers in the market to face cost increases, while at the same time negatively impacting their financial position as a result of fluctuations.	EBITDA at Risk Market risk is calculated by Trucost using the "EBITDA at Risk" metric. The EBITDA at Risk metric enables the calculation of forward-looking projections of the financial risk Tüpraş's suppliers and the potential impact on current earnings of companies if they are required to pay a price for their greenhouse gas emissions in the future. This assessment enables Tüpraş to identify the value chain exposed to carbon pricing risks under the scenario of 2°C warming.	Tüpraş carries out work for a sustainable value chain. In this context, it works to identify ways to reduce exposure to carbon pricing risk over time by influencing and encouraging its suppliers. Tüpraş is also working on Scope 3 emissions. It will prepare action proposals to reduce these emissions.	High	Likely	Medium Term
Market Risk	Increase in raw material prices (or costs) due to climate-related risks.	To turn to alternative raw material sources that may be more cost-effective or efficient.	Climate-related risks may lead to higher costs of crude oil, petroleum intermediates and natural gas procured by Tüpraş.		Prices of procured crude oil and natural gas costs are closely monitored. The Company's focus is on carrying out purchases at optimal cost level.	High	Likely	Medium Term
Market Risk	Changes in customer behavior, reducing demand for petroleum products, which directly affects Tüpraş.	Entering new markets by diversifying Tüpraş's crude oil product portfolio (biofuels, H2, zero-carbon electricity solutions) increasing revenues as a result of diversification in the product portfolio.	Legislative changes may precipitate a decline in consumer demand for Tüpraş's products.		Customer data and sales data is closely monitored. Necessary actions are taken in a timely manner. Tüpraş invests in the addition of new products to its product portfolio.	High	Likely	Medium Term
Market Risk	Any increase in premiums levied against Tüpraş by the financial and insurance market to due to its sector. The financial and insurance market terminates or significantly reduces its services to Tüpraş due to the sector it is operating in.	Diversification of financial markets and instruments due to current climate-related trends and impacts (Green bonds, sustainability-related bonds or insurance products)	Participants providing services to processes involving fossil fuels in the finance and insurance market are demonstrating increasing sensitivity to climate-related issues. This could lead to an increase in credit or insurance costs, or present difficulty in procuring products or services in these markets.		Tüpraş closely monitors new products and services developed within the scope of tackling the climate crisis in the financial and insurance markets. The changes in the approaches and pricing of participants in these markets towards the oil sector, which Tüpraş operates in, are followed closely and trends are observed. In addition, the Strategic Transition Plan at Tüpraş and the steps the Company has taken in this vein are shared with its counterparties. External questions on this subject are responded to, maintaining the Company's high reputation in the sector.	High	Likely	Medium Term
Reputation Risk	Loss of prestige and reputation in the eyes of stakeholder groups such as customers, investors, employees and suppliers as a result of not transitioning to a low carbon economy or delaying the transition. Reduction in competitive clout as a result of loss of reputation, adversely affecting share value.	Announcing plans that will have a positive impact on stakeholders, taking consultancy from companies which are specialists and competent in their fields, carrying out activities, and distinguishing the Company from other institutions in the sector by undertaking pioneering work in carbon studies.	Failure or delay in transitioning to a low carbon economy may lead to loss of prestige and reputation among stakeholder groups. The widespread public perception that operations increase climate-related risks may lead to more questioning of the Company's activities and its effects from stakeholders. A compromised reputation may result in credit and insurance institutions losing confidence in the activities carried out, while also discouraging investors from investing in the Company or leading them to reduce their investment in the Company.		The Company's continuously keeps its finger on the pulse of its stakeholders by following new developments, including on social media, in addition to direct interviews. Necessary actions are taken in a timely manner to resolve any incidents and communications which may affect the Company's reputation before they turn into crises. In order to correctly manage posts about Tüpraş, the Company ensures that the public is informed with qualified and sufficient content transparently, at the right time and at the right intervals.	High	Likely	Medium Term
Reputation Risk	Climate related posts being perceived as "greenwashing" by stakeholders		The situation where posts and explanations made within the scope of the climate crisis and the ESG are not perceived correctly by stakeholders, and are considered as green laundering.		By organizing meetings with its investors, Tüpraş strives to provide timely and accurate information regarding its shares and explanations, and to answer questions from investors. Stakeholder questions directed to Tüpraş are answered by the relevant units, primarily Investor Relations and Corporate Communications departments. Fully complying with legal regulations, stakeholders are informed on the PDP platform of any developments within the scope of the Company's activities, in a timely and detailed manner.	High	Likely	Medium Term
Technology Risk	Technological transformation risk The risk of lagging behind technological developments	Increasing efficiency in processes by switching to new technologies Carrying out technological investments to reduce operational costs Meeting demands within the scope of the legislation with modernization and efficiency projects, ensuring efficiency in operational costs, reducing emissions	Early decommissioning of existing products and technology to mitigate the adverse effects of climate change. Failure to ensure the technological investments and transformation which need to be carried out in the face of climate change.		Tüpraş follows developments in the global refining and energy sector closely and meticulously. Tüpraş strives to reach the required maturity by introducing sustainable products and product technologies. The Company invests in clean technologies. The Tüpraş R&D Center develops new technologies. With modernization projects, investments are undertaken in order to manage existing operations more efficiently.	High	Likely	Medium Term
Technology Risk	Failure to achieve the desired success in new technologies.		Inability to achieve the desired efficiency in big data analysis, agile transformation and robot processes.			High	Likely	Medium Term
Technology Risk	Failure to carry out investments in technology at the right time.		Lagging behind in terms of technology and losing the competitive edge to other companies in the refining sector.			High	Likely	Medium Term
Technology Risk	Failure to adapt to technological developments which may positively affect workforce and process efficiency, or being late to do so.	Increasing the capabilities of the existing workforce and ensuring the workforce is able to handle the demands of the age.				High	Likely	Medium Term

PHYSICAL RISKS

TCFD Risk Category	Risks	Opportunities	Definition/Characteristics	Explanation	Tüpraş's Approach-Action	Impact	Probability	Term
Chronic Risk	Water Stress Heatwaves Cold Weather Drought		The sustainability of Tüpraş's operations, production continuity and financial situation being negatively affected due to chronic adverse water or atmospheric conditions. Incurring additional costs within the scope of combating chronically ongoing adverse events in water/air conditions. The risk of moving a plant or facility due to chronic adverse water or atmospheric conditions. Increases in insurance premiums.	In order to foresee their effects on the Company's activities, physical risk headings, which are considered important for the Company and that are foreseen to occur on a chronic scale are evaluated.	Within the scope of the study on the "Identification of Water Risks", a risk-based assessment of the basins where the refineries are located was conducted using the internationally accepted WRI Aqueduct method. The results obtained were evaluated together with the reports prepared on the subject at the national level. Chronic water and atmospheric risks are monitored. Work is carried out to determine which chronic risks the Company is exposed to. Basin Management Plans are being prepared. Water level monitoring studies are carried out. Waste water is recycled. Efforts are made to reduce raw water consumption. The risks of Tüpraş facilities, especially to adverse changes in climate, are analyzed and action plans are prepared. Technical Standards, which form the basis for equipment design and selection, are evaluated by considering ambient weather conditions.	High	Remote possibility	Medium Term
Acute Risk	Floods Storms Heatwaves		Increase in insurance premiums in parallel with the increase in the frequency of physical risks.	In order to forecast their effects on the Company's activities, physical risk headings, which are considered important for the Company and which are foreseen to occur on an acute scale, are evaluated.	Necessary insurance policies are obtained. Work on acute risks is carried out at the refineries. Infrastructure analysis and necessary investment plans are drawn up in this context. Buildings are reviewed for durability. Drills (flood and fire) are held regularly at the refineries and action is taken based on the findings of these drills.	High	Remote possibility	Medium Term