

SASA
POLYESTER SAN. A.Ş.

**SASA PTA
PRODUCTION PLANT
PROJECT TCFD REPORT**

FOR A BRIGHT FUTURE WITH AN INSPIRING HISTORY...

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GLOSSARY OF ACRONYMS

BAT	Best Available Techniques
CFO	Chief Financial Officer
COD	Chemical Oxygen Demand
COVID-19	Corona Virus Disease
CBAM	Carbon Border Adjustment Mechanism
CRM	Corporate Risk Management
DMT	Dimethyl Terephthalate
EGSB	Extended Granular Sludge Bed
EIA	Environmental Impact Assessment
ESIA	Environmental & Social Impact Assessment
GHG	Greenhouse Gases
HEPP	Hydroelectric Power Plant
IFC	International Finance Corporation
IPCC	Intergovernmental Panel on Climate Change
ISO	International Organization for Standardization
IUCN	International Union for Conservation of Nature and Natural Resources
KPI	Key Performance Indicator
MBBR	Moving Bed Biofilm Reactor
PTA	Purified Terephthalic Acid
RCP	Representative Concentration Pathway
EDRC	Early Detection of Risk Committee
SPEI	Standardised Precipitation Evapotranspiration Index
TCFD	The Task Force on Climate-related Financial Disclosures
TUIK	Turkish Statistical Institute
VWT	Veolia Water Technologies

About Report

This report presents a 2022 perspective on our climate-related risks and opportunities evaluation for a new SASA Purified Terephthalic Acid Production Plant Project under Task Force on Climate-related Financial Disclosures recommendations and Equator Principles EP4 2020.

The report covers both construction and operational phases of the plant.

ABOUT US

MESSAGE FROM OUR
GENERAL MANAGER

'SASA' AT A GLANCE

OVERVIEW OF PTA
PRODUCTION PLANT



MESSAGE FROM OUR GENERAL MANAGER



**Board Member and General Manager
Dr. Mustafa Kemal Öz**

Climate change poses environmental, social and economic risks to both our daily and corporate life.

As the effects of global warming are felt more intensely today and the increase in climate disasters, the relevant policies and laws are renewed by taking into account the risks of climate change. We evaluate our corporate risks with the awareness of altering conditions of our planet, and required climate change adaptation plans. As in all our business processes, we carry out studies to define climate-related responsibilities and create implementation plans to consider the impacts of climate change in our new investments and procurement processes.

Thanks to our Sustainability Committee, we adopt a sustainable development approach while conducting our business activities, and transparently share our environmental, social and corporate governance performance in accordance with national and international standards.

The Paris Agreement, to which our country is also a party, it is aimed to limit the global average temperature increase. In line with this purpose, the European Union aimed to both make its economy sustainable and become a carbon-free continent with the Green Deal policy package. As SASA, we aim to adapt our risk management plan to mitigate the impacts of climate change against all our business processes, to create a sustainable structure that has a low ecological footprint, uses and recycles resources efficiently, gives priority to efficient and reliable energy technologies, and supports the circular economy approach.

MESSAGE FROM OUR GENERAL MANAGER

The COVID-19 pandemic, which affected the whole world in the first quarter of 2020, turned into a serious crisis and changed all the balances in the world economy. Considering the risks of pandemics and climate change, we develop and implement our preventive and remedial action plans into our work to ensure our business continuity and protect the health of our stakeholders.

We aim to eliminate the risks posed by climate change on logistics and procurement processes by producing our raw materials through the PTA Production Facility and to strengthen our economy by increasing domestic production. By using the Best Available Techniques (BAT) and advanced technologies in the PTA Production Plant, we will step into a more innovative and green industrial cycle that produces energy from waste gas, recycle wastewater and chemicals, and produces its own electrical energy in accordance with national and international regulations and standards.

Within the scope of risk reduction, we ensure the continuity of our company's risk management cycle with our Early Detection of Risk Committee. Our Early Detection of Risk Committee identifies strategic, operational and financial risks that may endanger the development of our company and implements appropriate measures for these risks. However, within the scope of our Corporate Risk Management, we have established a separate working group to analyze risks related to climate change. With the awareness that the measures to be taken against these risks should be integrated into all our business activities, we created our Climate Change Working Group and its working structure, including members from different departments of our facility.

In this direction, we are pleased to present our Climate Change Risk Assessment Report to all of our stakeholders, which includes our physical and transition risks management strategy, and targets considering climate crisis scenarios.

**Board Member and General Manager
Dr. Mustafa Kemal Öz**

'SASA' AT A GLANCE

SASA is among the world's leading companies in polyester, fiber, filament yarn, polyester-based polymers products.

Thanks to the our responsibility, innovation, technical competence, high production capacity and success we have leadership position in the sector.

SASA started polyester production in 1966 and still continues to grow with its investments and Erdemoğlu Holding owns 84,80%.

Our products

Textile: Polyester staple fibre products are fabricated by the production of 100% polyester and/or mixed yarn (cotton, viscose, acrylic, wool, nylon), then by weaving and knitting.

Comfort and Filling Fiber Industry: After the fibers are combed, turned into beads or tied into fibers, pillows, toy filling, quilts, all kinds of coats, furniture fillings, beds, decorative pillows are turned into.

Technical Textile: It is used as the main raw material of hygiene (wet wipes, pads, cosmetic wipes), medical (bandages, surgical drapes, masks) automotive (ceiling, floor and carpet, insulation materials), artificial subcutaneous carriers, filter (liquid-gas), cleaning cloths, all kinds of apparel interlining, plush, geotextile (asphalt stabilizers, drainage, underground, garden), construction (acoustic insulation, roof insulation, floor coverings) and similar products with different fiber bonding methods (mechanical, water needling and chemical).

Engineering Polymers: Polybutylene terephthalate and thermoplastic elastomer polymers are used in the production of automotive parts, electrical-electronic equipment, white goods and various other plastic products by plastic injection method.

Filament: SASA Filament Department produces poy and textured yarns mainly for use in knitting and weaving. Synthetic filament yarns produced from 100% Polyester are produced for the textile sector (Home Textile, Carpet, Underwear and Outerwear, Denim and Socks) and for the packaging, health and automotive sectors fed directly or indirectly from this sector.

"SASA is a leader in polyester fiber production in Turkey, Europe and the Middle East with polyester fiber production for different sectors"



PTA PRODUCTION PLANT PROJECT

PTA investment of SASA will be the largest PTA production plant to be built in Turkey and will help reduce the deficit and imports ratios which has enormous advantages in the production of raw materials. Within the scope of the project, 1,580,000 tons of PTA will be produced annually by using paraxylene and acetic acid as raw materials.

To establish a new PTA (Purified Terephthalic Acid) factory in Adana, SASA signed an agreement with INVISTA, the licensor company. The project is part of a very ambitious investment program that SASA will carry out in the petrochemical sector in Turkey.

PTA Production Plant will operate with INVISTA P8 Technology which include offgas scrubbing, catalyst recovery, water recycle, waste to energy technologies. P8 Technology ensures following environmental advantages compared to conventional PTA technologies:

- 75 % lower wastewater discharge
- 65 % lower GHG emissions
- 95 % lower solids waste generation,

PTA Production Plant is divided into two parts; first part is the main plant producing PTA and second part covers all utilities and offsite facilities. Oxidation and Purification sections are two major sections during production of PTA.

During PTA production processes, wastewater with high organic pollution comes out of main sources such as oxidation and purification processes. SASA has chosen Veolia Water Technologies as a leading water technology company.

PTA Production Plant wastewater is expected to contain high concentrations of COD arising from PTA production. DMT (Dimethyl Terephthalate) process water will be treated separately in Biobed EGSB (Extended Granular Sludge Bed). Treated wastewater, blowdowns, and filter backwash water will be treated in reuse facility. 55-60% of all wastewater will be reused in cooling towers for the production plant. Additionally, catalyst and benzoic acid recovery will be ensured.

The amount of biogas expected to be produced is approximately 29,500 Nm³/day for the PTA anaerobic treatment plant and approximately 10,990 Nm³/day for the DMT anaerobic treatment plant.

With waste to energy, off-gas scrubbing, and steam turbine technologies, the plant will generate its own electricity, thus providing high efficiency.



Best Available Treatment Techniques
 Biobed Extended Granular Sludge Bed
 Energy production from biogas
 MBBR Technology

EQUATOR PRINCIPLES

DEFINITIONS

ENVIRONMENTAL &
SOCIAL ISSUES



EQUATOR PRINCIPLES

Equator principles are defined in the finance sector and Project finance in line with IFC, the private sector arm of the World Bank. It is the standard that includes the requirements for the management of social responsibility and environmental risks of projects. Projects with environmental and social risks on a global scale are grouped under three main categories according to the Project size to be financed. According to their magnitude of environmental risks and impacts, projects are handled under three categories as Project A, B, and C. By categorization, Project A represents high risk, Project B represents medium risk, and Project C represents low risk or no risk projects. Category A is 'applied to projects with an investment cost over 10 million USD. SASA PTA Production Plant has been established within the framework of compliance with the Equator Principles during the installation and operation phase. According to the 2020 Equator Principles guide, it includes 10 principles in total. These principles requirements and the actions taken are presented in the TCFD report that will be demonstrated on the following pages.

According to Equator Principle 7, the SASA PTA Production Plant is inspected by independent organizations. All environmental and social commitments are implemented by the SASA PTA plant. The plant fulfills all national and international environmental and social obligations during the construction and operation phases. For the following years, the project will be audited by the relevant independent institutions and organizations by the Equator Principles. Apart from Principle 5, within the scope of reporting and transparency, the PTA Production Plant will publicly share the online summary of the ESIA report and TCFD report to ensure its transparency.

Environmental and social issues

The SASA PTA plant provides project-specific information on social issues and the evaluation of the financial impacts of climate-related risks and opportunities in the TCFD report to be mentioned. The environmental and social aspects of the project are covered in detail in the ESIA report. In the light of the principles, the following topics are grouped under environmental and social issues.

- ✓ Compliance with national and international requirements
- ✓ Biodiversity
- ✓ Management of hazardous material
- ✓ GHG emissions and intensity
- ✓ Socio-economic impact
- ✓ Water use
- ✓ Cultural heritage and protection
- ✓ Stakeholder engagement and vulnerable groups
- ✓ Grievance
- ✓ Land use
- ✓ Human Resources Management
- ✓ Physical Climate Risks

Compliance with national and international requirements

SASA PTA plant undertakes to comply with all relevant national and international requirements, laws, and rules during the installation and construction phase. The organization has been prepared by Environmental Impact Assessment, Environmental and Social Impact Assessment, ISO standards, local emission limitations, regulations, and IFC rules and standards during the construction phase and operation phase. Detailed legal and international requirements are discussed in Chapter 2 'Institutional and Legal Framework' of the ESIA report.

Biodiversity

Biodiversity Management Plan prepared in the light of IFC standard 6 and ESIA report Adana PTA Production Plant has been prepared specifically for the region. Studies have been carried out on flora, mammal, bird, reptile, and amphibian species. No endemic and rare species were found in the studies carried out on 80 flora, 8 mammals, 21 birds, 4 reptiles, and 3 amphibian species in the project area. At the same time, the species specified in the IUCN hazard category were not found. The project site is not in the national or international protection area.

Management of hazardous material

The management plan of hazardous material prepared by IFC performance standards 1, 4, and legal requirements are included in the ESIA report. Mitigation measures for all hazardous materials used are specified in Chapter 4 within the framework of the Hazardous Material Management Plan. In addition, the measures and methods to be taken by those responsible for the storage of chemicals are clearly described. KPI targets are given on issues such as non-conformities and spills in the management of hazardous materials.

GHG emission and intensity

GHG emissions within the SASA PTA plant have been calculated as Scope 1 and 2, taking into account the construction and operation phases. The calculation is by the GHG Protocol and is mentioned in detail in the Metric and Target section of the TCFD report page 44.

Socio-Economic impact

The socio-economic dimensions of the project are discussed in Chapter 15 of the ESIA report, its impacts on the local economy, in Chapter 5, the evaluation of the project implementation scenarios, and in Chapter 6, stakeholder engagement and consultation. The opinions of all non-governmental organizations (South Adana Women's Cooperatives, and Agricultural Cooperatives etc.), neighborhood mukhtar, private sector, municipality, local government, and media institutions and organizations in the region were collected. The general view of the project is that there are employment opportunities for the people of the region. The economic effects will be advantageous for the country and the region's economy by reducing foreign dependency on raw material production.

Water Use

Detailed water quantities and properties within the scope of the project are mentioned on EIA report table 108. The amount of water planned to be used during the establishment of the PTA plant is 504 m³/day. The water used in the construction phase will be used for personnel potable water, and water supply with sprinklers. Water use will be covered by a total of 13 wells to be drilled in the construction area. Groundwater modeling, precipitation data, regional geology and model results were investigated in the hydrogeological report within the scope of PTA Production Plant. The necessary permits for the operation of the wells were received with the approval of the Turkish Directorate General for State Hydraulic Works. The amount of water usage approved by the institution is 30,000 m³ per day. The amount of water planned to be used during the operation phase is 18,302.8 m³/day in total. During the operation phase, drinking and utility water will be used in the process and cooling phases. Package wastewater treatment plant for 6000 - 6500 people will be installed for the treatment of wastewater to be generated during the construction phase. In addition, it is aimed to reuse 55-60% of the wastewater for the operation phase by using appropriate techniques. Additionally, mitigation of water use, and water saving techniques are studied in order to minimize impact on water resources.

Cultural heritage

In the studies carried out within the scope of IFC Standard 8 and ESIA reports, studies were carried out under the titles of Cultural Heritage and Protection. It has been determined that there is no cultural heritage and archaeological site in the project area. The impact of the project on cultural heritage is 'negligible'.

Stakeholder engagement and vulnerable groups

The Project is subject to IFC's Environmental and Social Policy and Performance Standards, as well as the Specific Objectives of the Equator Principle regarding stakeholder engagement. Stakeholders of the project have been identified and engagement with these stakeholders provided valuable information about the baseline situation in the region. Detailed information is provided in Chapter 6 of the ESIA report. Public Participation Meetings were held to introduce the project to the people of the region and to receive their comments. In order to continuously inform local people about developments of the Project, mukhtar meetings will be arranged quarterly basis according to Stakeholder Engagement Plan. Opinions, concerns, and suggestions from local people, local authorities, non-governmental organizations, media, and other stakeholders are disclosed in the Stakeholder Engagement and Consultation part of the ESIA report. The PTA plant has an opportunity to create employment in the region.

There are Syrian refugees with vulnerable group status in the region. Syrians in Turkey are in "temporary protection" status. Temporary protection refers to the protection provided to foreigners who have been forced to leave their country, cannot return to their country of departure, who come to our borders or cross our borders in mass to find emergency and temporary protection and whose international protection status cannot be determined individually. It is stated in the 6th section of the ESIA report that the living standards and incomes of the Syrian refugees are not in good condition.

Grievance

Internal and external grievance mechanism systems have been established for the construction and operation steps of the PTA project. Stakeholders are defined in the grievance mechanism and any possible grievances are continuously recorded and followed up. Within 5 days after the grievance record, complainant person is contacted and informed that her/his grievance has been received. Grievances also can be submitted anonymously if they do not want to share their personal information. In addition, a communication mechanism for wishes, suggestions, and complaints about PTA Project has been declared by suspending posters in mukhtar's offices. Contact addresses and information are given on pages 20, and 21 of the Grievance Mechanism Procedure.

Land use

Land use is summarized in ESIA report Chapter 16 Information about agriculture, animal husbandry, and other practices in the field are given. The project area and its surroundings are generally public and private land. In the studies carried out, the effect of the construction and operation phases of the plant on agriculture in the region was evaluated as 'negligible'.

Human Resources Management

The Human Resources Management Plan has been created by IFC 2 and 4 performance standards, local occupational health and safety laws, and regulations. Community Health and Safety studies have been presented in the ESIA report Chapter 17. Discrimination among employees is not allowed. Differences in language, religion, race, ethnicity, political views, and sexual orientation are protected within legal limits. Disease-related death rates, crime rates, number of hospitals, health workers per capita, and health problems in the neighborhoods around the project were mentioned. In addition, the effect of the plant on public health has been determined as 'negligible'. In the PTA plant, the construction and operation phase of the workers cannot exceed 11 hours per day and the employees can work overtime within the legal limits. In line with local legal limits, the entire site will be operated by ISO 45001 occupational health and safety standards, and zero lost time occupational accident targets will be implemented. Additionally, a Human Rights Scan study was prepared for "SASA PTA Production Plant Project" to support requirements of EP IV (July 2020) and UN Guidance Principles on Business and Human Rights (UNGPR) as well as the ILO and other international human rights-related conventions.

Physical & Transition Climate Risks

Climate risks are the risks that may affect the SASA PTA Production Plant in the long, short, and medium-term. Evaluation and approaches for the risks are explained in detail in the Strategy section and Risk Management section of the TCFD report.

GOVERNANCE

A modern conference room with a large window and several chairs. The room is brightly lit, and the window looks out onto a green landscape. The chairs are arranged in a row, and the room has a clean, professional appearance.

**GOVERNANCE
STRUCTURE**

**EARLY DETECTION OF
RISK COMMITTEE
TASKS**

**CLIMATE CHANGE
WORKING GROUP
TASKS**

GOVERNANCE STRUCTURE

OUR GOVERNANCE STRUCTURE CONSISTS OF

- Board of Management
- Committees of the Board of Directors
- Internal/external audit
- Senior Management

To meet the corporate goals, senior management, reporting, and information transfer between the board of directors and stakeholders are provided as in our governance structure. Thus, consultation processes are established between stakeholders and the highest governance body on economic, environmental, and social issues.

We have an internal auditor and an independent external auditor within Erdemoğlu Holding



EARLY DETECTION OF RISK COMMITTEE TASKS

Our company's highest level of governance oversees our public activities and commitments to address climate change. Climate change governance is evolving in response to the growing importance of the issue in society and our expanding understanding of its implications for business. Within the framework of the "Sustainability Principles Compliance Framework", published by the amendment, to the Corporate Governance Communiqué of the Capital Markets Board, and the Paris Convention which has also been signed by our country within the scope of the Climate Change Movement; the Sustainability Committee has been established by the decision, dated 2021, of the Board of Directors of SASA Polyester Sanayi A.Ş., based on United Nations Sustainable Developments Objectives.

The Committee has been established by the Board of Directors for the early detection and management of all kinds of strategic, operational, financial and climate related risks that may endanger the existence, development and continuation of SASA. Committee also takes necessary and appropriate measures accordingly. The members of the committee are determined by the Company's Board of Directors and disclosed to the public. The Committee consists of a maximum of three members, including the Chairman appointed by the Company's Board of Directors. The term of the committee members' duty is parallel to the board directors. The Committee is re-formed following the election of the Members of the Board of Directors.

The Committee shall provide information, regarding its activities and outputs, to the Board of Directors, 6 times a year. The Company shall ensure that all stakeholders be informed, in line with the risk policy and objectives determined by the Committee. It shall conduct activities for the internalization of these policies by the employees.

Duties and responsibilities for the Early Detection of Risk Committee



- Committee works to identify risks that may endanger the existence, development and continuity of operations of the company, to establish management systems, to identify risks, and to take necessary precautions.
- It reviews the risk management system at least once a year, works to implement the committee's decisions.
- Invites executives to a meeting when deemed necessary
- Independent expert opinions can be used if needed
- The Committee fulfills other duties and responsibilities given/to be assigned pursuant to the Turkish Commercial Code and the Capital Markets Legislation.
- Committee advises the board of directors in identifying and managing climate-related risks and taking necessary actions within the company.

CLIMATE CHANGE WORKING GROUP TASKS

The Climate Change Working Group: one of the Working Groups under the Early Detection of Risk Committee, carries out studies on adaptation analysis of risks and opportunities of climate change for our company. The Climate Change Working Group organizes meeting at least 2 times a year and presents a report evaluating the climate-related risks and opportunities for the company.

The activities of the Climate Change Working Group are carried out under the leadership of the Early Detection of Risk Committee. The Climate Change Working Group consists of a multidisciplinary structure with members from the Energy, Water, Construction, Finance, Occupational Safety, and Environment departments. The Climate Change Working Group is working in coordination with Environmental Sustainability working Group.

THE TASKS OF THE GROUP ARE:

Leading the identification, assessment and management of climate-related risks and opportunities,

Reporting to the EDRC the climate-related risks and opportunities identified by the management, along with their corresponding potential financial impacts on the Company,

Establishing a process for integrating climate-related risks into the enterprise risk database,

To monitor the management of climate-related risks in relation to the general risks that the company is exposed to,

Provide disclosures on the financial impact of climate-related risks in the Annual Report,

To ensure that the Risk Management & Sustainability Unit Group receives corporate support to establish a structure for the inclusion of climate-related risks in the corporate risk management program.

STRATEGY



TERM DEFINITIONS

**CLIMATE-RELATED
RISK**

**ECONOMICAL AND
SOCIAL ASPECTS &
OPPORTUNITIES OF
PTA PLANT**

**MATERIALITY
ANALYSIS**

**RCP 4,5 & 8,5 CLIMATE
CHANGE SCENARIOS**

TERM DEFINITIONS

Climate-related risks are prioritized by the organization based on their likelihood of occurrence and the projected extent of the financial impact they will have. The priority assessment is performed broadly similar to that applied by the Company for all business risks and opportunities. Our company has developed the following short-, medium-, and long-term and likelihood definitions based on this assessment:

Definitions	Term definitions have been made in accordance with TCFD recommendations for assessing stated physical and transition risks.
Short-term Risks	Risks that may arise during the current reporting year and have an impact on short-term financial results. This time period is defined as one 3 years or less.
Medium-term Risks	These are the risks that can arise within a timeframe of 3 to 10 years. Risks that have a substantial impact on the company's strategy and financial results.
Long-term Risks	Risks that could have a significant impact on the organization's long-term strategy and the feasibility of the new plant (PTA), including those that could more than 10 years.
Likely	The definition given to the events most likely to be encountered in the PTA plant among the risks
Possible	It is used to describe the risks that may be encountered frequently in the organization.
Unlikely	It is used for risks that are expected to occur but occur less frequently.
Rare	Occurs over long periods of time to be encountered in the organization
Very Rare	Identifies risks that are least likely to occur relative to other risks

CLIMATE-RELATED RISK DEFINITIONS

The main cause of the environmental implications can be attributed to the steady rise in global greenhouse gas emissions throughout time. Climatic destructive effects are evaluated not only in terms of extreme temperatures, floods, water scarcity, and biodiversity but also in terms of their social impacts. On a global and regional scale, temperature increases, desertification, and food access issues are among the critical problems influencing social life. The PTA production Plant possible climate change-related risks, which will be established as SASA on climate and social impacts, are analyzed under two headings: transitional and physical.

Physical Risks

Physical risks are examined under two separate headings as emergence times and impact. Physical risks appear as acute or chronic risks. Acute risks are climate-related droughts, floods, storms, sudden heat waves, and sudden temperature changes that show their effects at the time of the climate event. Considering the characteristics of acute risks, extreme weather events might occur at an uncertain timeframe. From a regional perspective, geographical effects are guiding in defining acute risks. Finally, in some circumstances, the elements that influence weather events might be complex and varied. Chronic risks, on the other hand, include climatic events that show their effects over many years. Unlike acute risks, its effects can be felt more gradually.

Transition Risks

Transition risks are the risks associated with actions that follow the organization's societal and economic steps towards a low-carbon and climate-friendly future. These risks may include policy risks, technological risks, market risks, reputational risks, and legal risks. Just like physical risks, transition risks interlink with each other and take into account the financial conditions and operational processes of the organization.

CLIMATE-RELATED RISK DEFINITIONS

TRANSITION RISKS

Climate Related Risks	Detailed Climate Related Risks	Term
Policy and legal	- GHG emission costs expected to increase over the years for the PTA plant	Medium-Long
	- Reducing the pollutant threshold values over the years	
	- Transition to low carbon economy as SASA	
	- ETS will be valid in Turkey after year 2023. Since capacity of SASA is higher than 20 MW, we will be following ETS requirements	
Technology	- After the 2025, CBAM will be in charge in Turkey but SASA won't be in the prioritized sector	Medium-Long
	- Changing the materiality of the product and technology used	
Market	- Replacing the plant equipment with less-emission-producing equipment, for example, switching to IE3 and IE4 efficient power systems, In addition, PTA Production Plant will meet its own electricity with offgas, biogas and solar investments	Short-Medium
	- Change of precipitation regimes in the region negatively, lack of energy source in HEPP might be a problem for PTA facility's electricity supply, and changes in electricity unit price	
	- Decreased production capacity due to disasters that may occur because of climate change	
	- Extreme weather events can cause problems in the supply of raw materials	
	- Increasing priority and demands of credit institutions	
Reputation	- Problems that may occur in the supply of raw materials due to climate change	Long
	- Fluctuations in PTA production and capacity on a global scale	
	- Difficulties in setting Scientific-Based Targets for GHG emissions specific to the PTA plant	

CLIMATE-RELATED RISK DEFINITIONS

PHYSICAL RISKS (ACUTE)

Climate Related Risks	Detailed Climate Related Risks	Term
Flood	- Sudden changes in precipitation regimes and flood risks	Short-Medium
Fire	- Due to the extreme high temperature, facility fires and related incidents might occur in the PTA plant	Short-Medium-Long
Forest Fires	- Occurrence of forest fire in the area where PTA plant is planned to be established	Short-Medium-Long
Extreme Weather Events	- With climate change, the increase in the impact and severity of extreme weather events (storm, hurricane, heavy rains, icing, etc.)	Short-Medium-Long
Overtemp	- Continuous increase in the number of extremely hot days observed in the plant area	Long-Medium

CLIMATE-RELATED RISK DEFINITIONS

PHYSICAL RISKS (CHRONIC)

Climate Related Risks	Detailed Climate Related Risks	Term
Decreasing Groundwater Level	- Groundwater level drop due to excessive water use during construction and operation	Medium-Long
Rising of sea water level	- As a result of the melting of the glaciers, the sea level rises in the Mediterranean region where the plant is located.	Long
Destruction of biodiversity	- In relation to climate risks, the facility's negative impact on the region's flora and fauna	Medium-Long
Overtemp in long-term	- Considering RCP 8,5 scenario over-temperatures in long-term are anticipated	Long
Drought in long-term	- Particularly in Mediterranean region over-temperatures, less precipitation and dependent on them drought is inevitable	Long
Change in precipitation regime	- The impact on groundwater and climate of long-term precipitation regimes, which are generally in a downward trend	Long

ECONOMICAL AND SOCIAL ASPECTS & OPPORTUNITIES OF PTA PLANT

Social Aspects:

As mentioned before, when the scenarios of 'with project' and 'no project' scenarios are examined, the biggest advantage is seen directly or indirectly, employment opportunities. Considering the migration situation of educated people in the region if the project is not implemented, the unemployment problem will increase. According to TUIK data, unemployment in the region has been increasing since 2014, surpassing Turkey's average. The fact that people living in the surrounding neighborhoods and settlements consider the project as a business opportunity can be considered another advantage.

Economic and Financial Aspects:

With the Purified Terephthalic Acid Production Plant Project, SASA Polyester A.Ş. aims to reduce the dependence on imports in the main raw materials in the existing polyester fiber, filament, polyester-based polymers, intermediate products, and specialty products production facilities in Adana Province, Seyhan District and to produce new petrochemical products.

Opportunities:

- ✓ Lower raw material costs
- ✓ Reducing foreign raw material dependency on a sectoral basis
- ✓ Growth market for the company
- ✓ Sub-industry development
- ✓ Job opportunities for the residents

	'No Project" Scenario ¹	"With Project" Scenario ¹
Financial & Economic Impacts	<ul style="list-style-type: none"> - No revenues to national government. - No raw material production and continuation of importing raw materials. - More current account deficit 	<ul style="list-style-type: none"> - Income to the country's economy - Production of petrochemical materials - Less current account deficit
Social Impacts	<ul style="list-style-type: none"> - No direct negative impacts on local communities - Lost opportunity for direct/indirect employment and skills enhancement 	<ul style="list-style-type: none"> - Some minor impacts on local communities in terms of access to grazing land and visual impacts. - Important opportunity for local direct/indirect employment, skills enhancement and diversification of local economy
Environmental Impacts	<ul style="list-style-type: none"> - No Environmental impacts - No consumption of natural resources (e.g., water) 	<ul style="list-style-type: none"> - Minor environmental impacts on habitat loss - Managed consumption of natural resources (e.g., water)

1- PTA ESIA Report Chapter 5 Project Alternatives

MATERIALITY ANALYSIS

After defining the climate risks, the organization determines the severity of the risks. The aim here is to estimate the financial effects. The level of materiality was prepared by a survey conducted within the company and, as indicated in the table below, it was ranked from bottom to top. Then, the following table was created by evaluating the risks together with their likelihood of occurrence. The most prioritized risks in the organization are listed as fire, long-term drought, and technology risk, respectively. When using the prioritization analysis, a 2x2 matrix was used.



SCENARIO DEFINITIONS

When addressing climate-related risks, it is important to choose the most appropriate scenario possible based on TCFD recommendations. Scenarios determine the organization's approach and projections for risks related to climate change. While evaluating the SASA PTA Production Plant risks, IPCC recommendations RCP 4.5 and 8.5 scenarios were used. RCP4.5 and RCP8.5 scenarios are based on global temperature increase 1.5 and 2.5 °C respectively.

RCP 4.5²

RCP 4.5 is a medium stabilization route and assumes that the radiative forcing value will reach 4.5 W/m² and equivalent CO₂ concentrations around 650 ppm in the year 2100 according to this scenario.

RCP 8.5²

RCP 8.5 is the highest radiative forcing and concentration route. RCP 8.5 represents higher greenhouse gas emissions than other scenarios and thus represents the upper limit of RCPs. According to the RCP8.5 scenario, radiative forcing is expected to reach 8.5 W/m² and equivalent CO₂ concentrations while around 1370 ppm in the year 2100.

Multi-Model Ensemble³

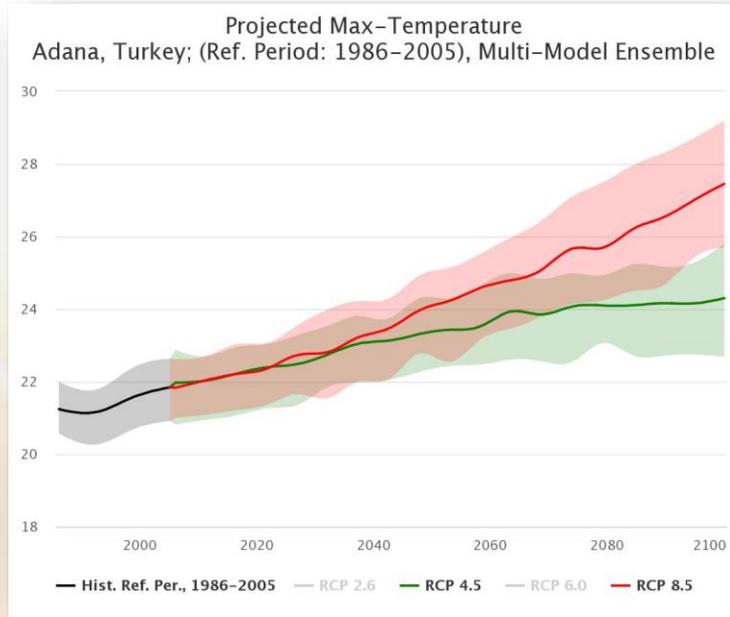
In climate change impact assessment, multi-model climate forecasts can be created by running many global climate models for a common set of experiments. Multiple models produce integrated results with different scenarios, taking into account the differences in climate models.

2- IPCC 2021 Technical Summary

3- World Bank Climate Change Knowledge Portal

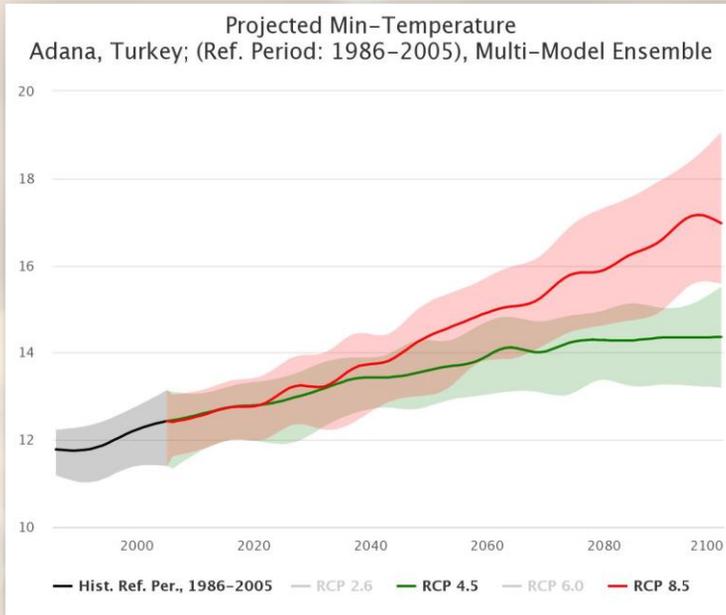
RCP 8,5 & RCP 4,5 - SCENARIOS CLIMATE RELATED RISKS

Max-Temperature °C



The annual maximum temperature tends to increase rapidly, especially in the RCP 8.5 scenario. This pessimistic scenario also jeopardizes water use as it causes drought. Because of the reduction in water resources, both agriculture and economy in Adana region are affected negatively, as well as the operations of the plant and employee health.

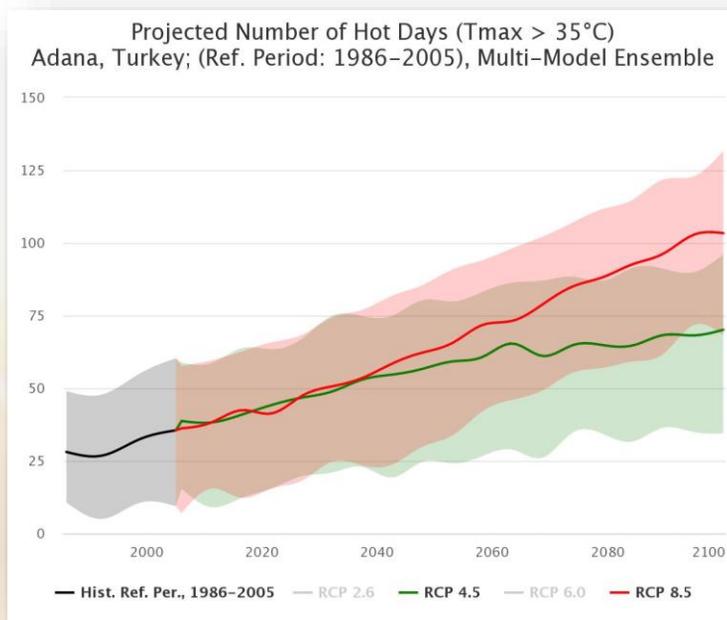
Min-Temperature °C



Although the annual minimum temperature remains much more optimistic compared to the maximum temperature scenario, when the RCP 8.5 scenario is considered, it predicts an increase of about 6°C in 100 years. This creates a risk for the plant in the use of natural resources. with the increase in the usual temperature.

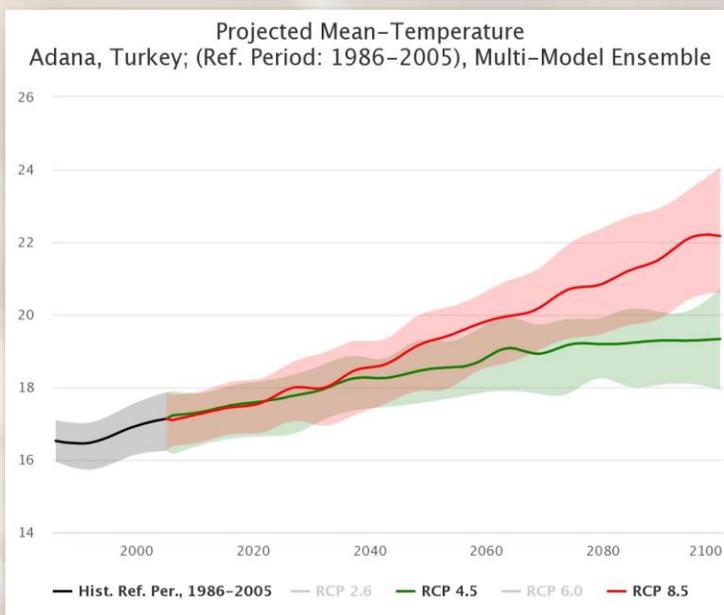
RCP 8,5 & RCP 4,5 - SCENARIOS CLIMATE RELATED RISKS

Number of Hot Days (Tmax >35° C)



Since fires can be expected to increase with hot days, there might be fires in the plant and many disruptions in equipment.

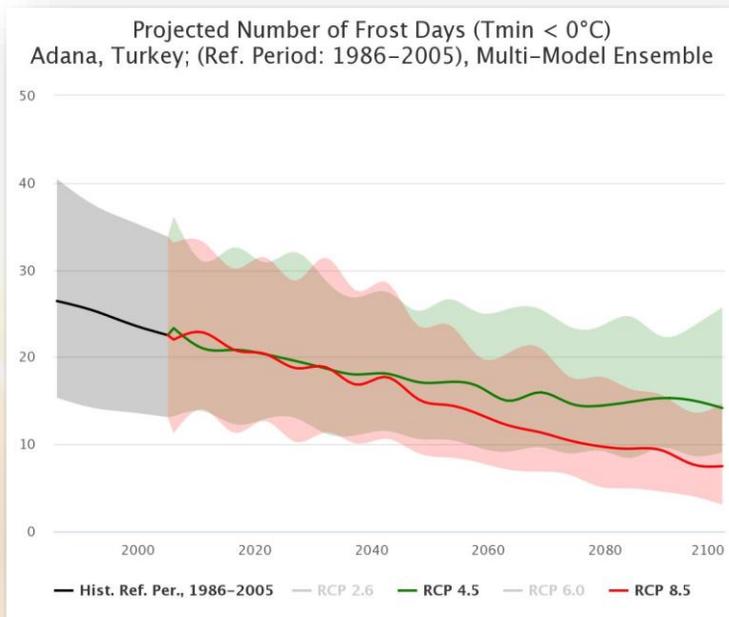
Mean-Temperature °C



According to the RCP 8,5 scenario, it is predicted that the daily maximum temperature will increase by approximately 5°C in the 100-year scenario. Although the temperature increase is expected to be less in the more optimistic RCP 4,5 scenario, it still brings many risks such as the possibility of flooding the province. The risks associated with these issues, such as the use of natural resources and the use of equipment, may also cause long-term problems in the plant.

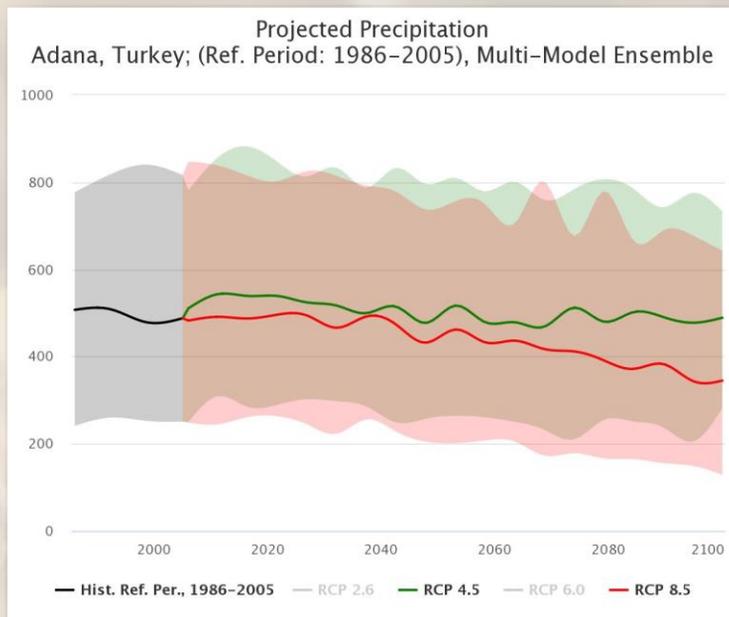
RCP 8,5 & RCP 4,5 - SCENARIOS CLIMATE RELATED RISKS

Number of Frost Days (Tmin < 0° C)



Some cereal seeds require cold stratification to germinate but frost days cover a very small part of the year in Adana, where hot days are the majority. The decreasing trend of frost days may endanger the cultivation of these seed types. At the same time, operating the plant equipment in hotter weather compared to other years will create cooling costs.

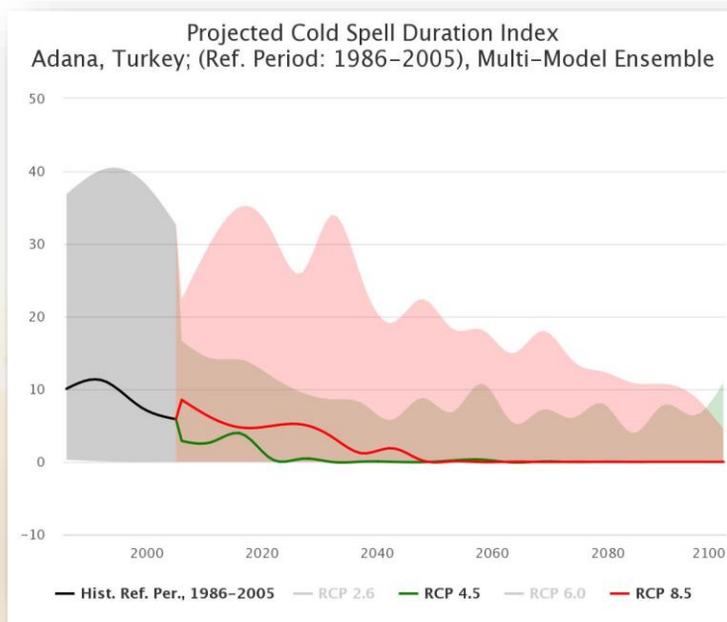
Precipitations (mm)



The decrease in annual precipitation amounts may cause problems in the water use capacity of the plant. Since the water resources to be used by the plant are well water, rainfall amounts are very important. Considering the precipitation projections in the scenarios, the PTA plant targets 55-60% water recycling to keep water use to a minimum.

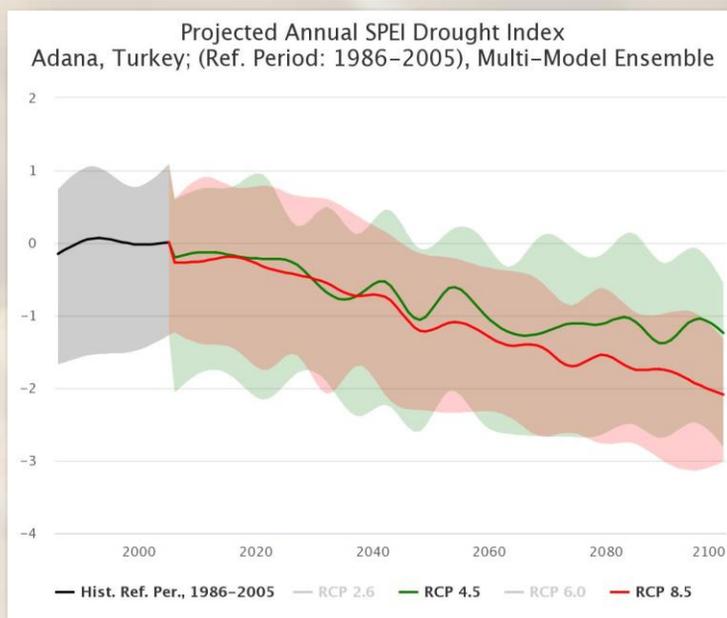
RCP 8,5 & RCP 4,5 - SCENARIOS CLIMATE RELATED RISKS

Cold Spell Duration Index



Cold spells refer to periods of unusually long periods of cold where the temperature drops well below normal conditions. The increase in this situation in Adana, whose temperature is already above the national average, may cause great negative effects on issues such as health, infrastructure, and agriculture.

Annual SPEI Drought Index



0.5 to 1 in reference years represent moderately wet, and values from -2 to -1.5 predicted in future years projection represent severely dry. SPEI Drought Index, which was observed to fall below -3 in the RCP 8.5 scenario, describes extremely dry. Drought, which brings with it water scarcity and many natural disasters, is one of the dangers that should be considered, as it can cause a decrease in vegetation, a decrease in water quality, negative effects on nutrition and even stop production.

RISK MANAGEMENT

**CORPORATE RISK
MANAGEMENT**

**CLIMATE CHANGE
RISK MANAGEMENT**

**TRANSITION RISKS
DEFINITIONS**

RISK EVALUATION

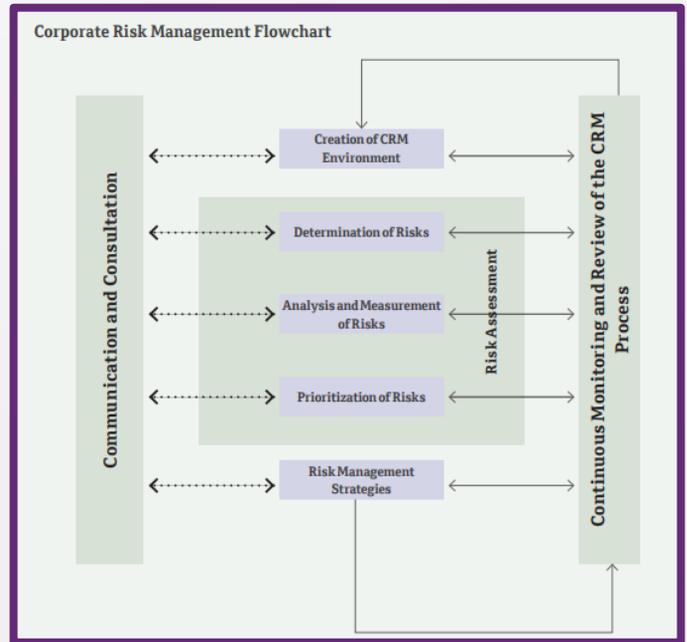


CORPORATE RISK MANAGEMENT

SASA Enterprise Risk Management Flow Chart

We ensure that the relevant activities are carried out in line with the "Corporate Risk Management Procedure" that we have created based on the Corporate Governance Policy.

We create the risk management process according to the risk management flowchart defined in our corporate risk management procedure. The benefits of our enterprise risk management process include:



*CRM: Corporate Risk Management

The benefits of our enterprise risk management process include:

- ✓ Risk awareness is created throughout SASA and surprises are minimized with proactive methods in line with risk appetite
- ✓ Losses and costs that may be encountered due to risks are reduced
- ✓ Sustainable growth and stability are ensured
- ✓ Improves the company's reputation and trust
- ✓ Risks are constantly checked and actions are taken
- ✓ Compliant with legal regulations

CORPORATE RISK MANAGEMENT

Thanks to corporate risk management, the approach to risks across SASA includes the following items.

Corporate Risk Approaches

- ✓ Avoiding Risk
- ✓ Reducing the Likelihood of Risk
- ✓ Reducing the Impact of Risk
- ✓ Transferring / Sharing the Risk
- ✓ Accepting the Risk

At SASA, risk management is primarily the responsibility of all employees.

The board of management, directors, managers, and all other employees are responsible for understanding and monitoring the critical risks in their areas of responsibility, sharing accurate and timely information about these risks, and taking action in line with the decisions taken.

The groups included in the internal risk management are as follows.

- ✓ Board of Management
- ✓ General manager
- ✓ Company Risk Committee
- ✓ Risk Management Officer
- ✓ Risk Function Group
- ✓ Department Managers
- ✓ All Employees



CLIMATE CHANGE RISK MANAGEMENT

In 2020, SASA included the Sustainability committee into its governance structure to operate sustainability governance more effectively. The purpose of this committee is to increase the value created by the company in the field of environmental, social, and corporate governance, to determine the sustainability & climate change strategy, and to execute monitor, and audit sustainable policies, goals, and practices. In line with TCFD reports and recommendations, the Climate Change Working Group was established to deal with climate change risks more effectively within the company. The Climate Change Working Group works with the Early Detection of Risk Committee. At the same time, climate-related risks have been added to enterprise risk management procedures to integrate climate change into the organization.

Members of the Climate Change Working Group

The activities of the Climate Change Working Group are carried out under the leadership of the Environment Department. The Climate Change Working Group consists of a multidisciplinary structure with members from the Energy, Water, Construction, Finance, Occupational Health and Safety, and Environment departments.

Duties and responsibilities of the Climate Change Working Group

The Climate Change Working Group organizes meeting at least 2 (two) times a year and presents a report evaluating the climate-related risks and opportunities for the Company. The tasks of the group are:

- ✓ Leading the identification, assessment, and management of climate-related risks and opportunities,
- ✓ Reporting to the Board of Directors the climate-related risks and opportunities identified by the management, along with their corresponding potential financial impacts on the Company,
- ✓ Establishing a process for integrating climate-related risks into the enterprise risk database,
- ✓ To monitor the management of climate-related risks about the general risks that the company is exposed to,
- ✓ Provide disclosures on the financial impact of climate-related risks in the Annual Sustainability Report,
- ✓ To ensure that the Risk Management & Sustainability Unit Group receives corporate support to establish a structure for the inclusion of climate-related risks in the corporate risk management program.

TRANSITION RISKS DEFINITIONS

General Risk Definitions

Although global climate events have an impact on every part of our environmental life and organization, their economic consequences are another reflection. As SASA, we have divided and defined the transition risks of the new PTA Production Plant, under construction, into climate-based subcategories. Following risk definitions have been made by TCFD recommendations.

Policy and legal

The impact of developing and revising climate-related policies and regulations on SASA can be unpredictable. As a result, precise risk identification is critical. Threshold emission limits and legislative frameworks governing land use should be regularly checked. As an organization, we keep a careful eye on the impact of climate change on policy and legal frameworks.

Market

The planned PTA Production Plant has market risks associated with climate change. These risks can be listed as changes in customer expectations and behaviors, uncertainties in the markets, and finally, the increase in raw material product costs.

Technology

Rapidly developing technology can impact every aspect of the business. Technology-based risks of our new plant; it is the preference for goods and services that produce fewer emissions that they can compete with existing products and systems. On the other side, improper use of new technologies due to a lack of qualified employees in our country can be counted as a technology-based transition risk. It is possible to reduce emissions limitations with national and international measures and technology solutions taken to combat the devastating effects of global climate change. Another risk that should be evaluated at this point is the expenses of the equipment and facilities to be installed.

Reputation

As SASA, one of the transition risks has been determined as reputation. It's the kind of risk that could arise as a result of stakeholders' concerns about the PTA Production Plant and its environmental sensitivity, exposing the company's reputation.

Climate Related Risks	Detailed Climate Related Risks	Term	Likelihood	Possible Financial Impacts	Management Response
Policy and legal	<ul style="list-style-type: none"> - GHG emission costs expected to increase over the years for the PTA plant - Reducing the pollutant threshold values over the years - Transition to low carbon economy as SASA -ETS will be valid in Turkey after year 2023. Since capacity of SASA is higher than 20 MW, we will be following ETS requirements. - After the 2025, CBAM will be in charge in Turkey but SASA won't be in the prioritized sector. 	Medium-Long	Possible	<ul style="list-style-type: none"> -Increasing operating costs -Technological investments to comply with emission limits through policy and legal changes - Penalties - For ETS and CBAM impacts please see policy and legal risk, carbon pricing objectives under Metric & Target table 	<ul style="list-style-type: none"> - Within the scope of integrated management systems, management constantly monitors legal and policy changes using the Follow-up Table of Legal and Other Conditions. It acts in accordance with legislative changes - In accordance with the UN Sustainable Development Goals, to increase the adoption of sustainable policies and actions to eliminate climate-related financial losses and to establish a reputation for the sustainability method of daily work programs - To ensure the appropriate emission report for the ETS, SASA continuously monitors its emissions - As SASA for the effective CBAM in Turkey, Zero Road Map, and emission targets are creating
Technology	<ul style="list-style-type: none"> - Changing the materiality of the product and technology used - Replacing the plant equipment with less-emission-producing equipment, for example, switching to IE3 and IE4 efficient power systems. In addition, PTA production plant will meet its own electricity with offgas, biogas, and solar investments. 	Medium-Long	Likely	<ul style="list-style-type: none"> - Costs arising from the replacement of products whose lifespan is not completed with new ones in line with policy and legal requirements - Need for qualified personnel in new technologies 	<ul style="list-style-type: none"> - The organization constantly follows the changes and requirements in the field of technology and can access appropriately qualified employee with university collaborations, correct human resource management. Additionally, all desings and technological investments are planned according to most strict limits among the IFC, ISO and national standarts. Updates among these international and national standards will be integrated to the Plant by the aid of 3rd party audits of IFC -Catalysis, benzoic acid and CTA residues used in production processes are recovered with Invista R2R technologies.
Reputation	<ul style="list-style-type: none"> - Difficulties in setting Scientific-Based Targets for GHG emissions specific to the PTA plant - Environmental accidents due to the extreme weather events 	Long	Rare	<ul style="list-style-type: none"> - Income and financial losses in line with the negativities that may occur in the production and supply chain - Fines and compensation payments as a result of environmental accidents 	<ul style="list-style-type: none"> - Within 2 years, the organization started roadmap and feasibility studies to reduce greenhouse gas emissions within the body of Scientifically Based Target Setting Organization (SBTi). It also implements the ISO 50001 Energy Management System within the organization -The Climate Change Working Group, which is part of the Early Detection of Risk Committee, constantly reviews and shares with senior management the products, groups, and services will be affected by climate change with its multidisciplinary work team

* BlueWeave Consulting
 ** IMARC

Climate Related Risks	Detailed Climate Related Risks	Term	Likelihood	Possible Financial Impacts	Management Response
Market	<ul style="list-style-type: none"> - Change of precipitation regimes in the region negatively, lack of energy source in HEPP might be a problem for PTA Production Plant electricity supply, and changes in electricity unit price - Decreased production capacity due to disasters that may occur because of climate change - Increasing priority and demands of credit institutions - Problems that may occur in the supply of raw materials due to climate change - Fluctuations in PTA production and capacity on a global scale 	Short-Medium	Unlikely	<ul style="list-style-type: none"> - Increase in electricity consumption share costs originating from HEPP - Increase in water unit prices in parallel with possible water scarcity = - Developing the scope of sustainability in environmental and social governance issues in line with investor demands, resulting in investor interest and loss of value - Raw material supply may be interrupted as a result of the effects of climate change. 	<ul style="list-style-type: none"> - In order to use more efficient electricity, the organization is constructing a renewable biogas plant. - In the operation phase, it is aimed to reuse 55-60% of the water used in the PTA production plant. - To meet investor demands and expectations, the process is managed through the activities of the Early Detection of Risk Committee and the Climate Change Working Group <p>The company annually supplies approximately 711 million USD of raw materials for the PTA plant.</p> <p>Raw materials of PTA to be purchased are listed below;</p> <ul style="list-style-type: none"> - Paraxylene (main chemical) (675,9 million USD) - Acetic acid (main solvent) (19,6 million USD) - Cobalt acetate, manganese acetate, hydrogen bromide (main catalysts) (9,1 million USD) - Sodium formate, caustic, sodium carbonate (process chemicals) (6,6 million USD) - Toluene (process solvent) (186 thousand USD) <p>According to the report* for 2021, PTA market size is 54.8 billion USD on a global scale. PTA, which is used in different sectors and fields in the industry, mostly in textile products manufacturing globally. SASA use it also as a raw material for its products to be used in textile applications. Regarding the demand increase in PTA, the main raw material – paraxylene- a growth of 5%** in market size is expected between 2021-2026 in the short term. Therefore, SASA constantly follows the global trends in its purchasing strategies.</p>

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Risk Evaluation Tables

Physical Risks (Acute)

Climate Related Risks	Detailed Climate Related Risks	Term	Likelihood	Possible Financial Impacts	Management Response
Flood	- The risk of flooding as a result of sudden changes in precipitation regimes or excessive precipitation	Short-Medium	Unlikely	- Financial losses as a result of damage to the equipment and products of the PTA plant as a result of floods	- Considering the Adana Meteorology Stations Long-Year Extreme Incidents included in the EIA and ESIA reports during the construction phase of the PTA plant, the probability of flooding is quite high every year. As a precaution against floods, appropriate project design has been carried out and it has been ensured that the plinth level is sufficiently higher than the natural ground level
Fire	- Due to the extremely high temperature, facility fires and related incidents might occur in the PTA facility	Short-Medium-Long	Likely	- Fires cause air pollution, create potential danger to the machinery and equipment also negative impact on employee health and safety. Penalties in cases where regulations are not applied correctly.	- The organization has been prepared in the Management Plans against fire protection specific to the PTA plant. These are Occupational Health and Safety Management Plan, Environmental Emergency Management Plans. In addition, special fire safety systems are installed in the plant.
Forest fires	- Occurrence of forest fire in the area where PTA plant is planned to be established	Short-Medium-Long	Rare	- Considered to be not affected	- According to Turkish legislation, the region is not within the forest areas and the closest forest distance is 6 km
Extreme weather events	- With climate change, the increase in the impact and severity of extreme weather events (storm, hurricane, heavy rains, icing, etc.)	Short-Medium-Long	Possible	- Negative effects on employee health, disruptions in production and services, loss of value as a result of all these	-The management is making technology investments to minimize possible material damage. Entire project has been designed with temperature, storm and other natural events considerations
Overtemperature	- Continuous increase in the number of extremely hot days observed in the plant area	Long-Medium	Possible	- In the production of PTA raw material, the performance of the air compressor basically depends on the ambient temperature. As the ambient temperature increases, the air flow decreases and the raw material production rate reduces. The hot air effect also applies to cooling towers. The temperature increase in the cooling towers can reduce the production efficiency.	- The PTA production plant has been tested considering the hot days to be experienced in the region. According to the Process Design Criteria and Basic Engineering Design Data (BEDD) in the studies, it is not expected that the production will stop in hot weather.

Risk Evaluation Tables

Physical Risks (Chronic)

Climate Related Risks	Detailed Climate Related Risks	Term	Likelihood	Possible Financial Impacts	Management Response
Groundwater level drop	- Groundwater level drop due to excessive water use during construction and operation	Medium-Long	Unlikely	- The decrease in the groundwater level as a result of potential droughts may lead to the interruption of the processes and financial losses during the operation and construction phase of the plant	- Within the scope of the PTA Water Resources Management Plan, with the SDG 6 and EIA reports, it has been committed not to go down to the groundwater limit in order to protect the resources. The plant aims to significantly reduce water use by recovering 55-60% of 43,200 cubic meters of water per day during the operation phase. At the same time, as a result of 15 years of simulation in the Hydrogeological Report prepared specifically for the area, 16.4 million tons of water will be supplied for the PTA plant. Adana region, which is surrounded by the Taurus Mountains, is fed with a high amount of groundwater. According to the DSI report prepared for the region, 400hm ³ of water can be drawn safely in the region. As stated in the Hydrogeological Report, considering the results of the groundwater flow model, after 15 years of use, the groundwater level will be 25m which is higher than the limit
Rising of sea water level	- As a result of the melting of the glaciers, the sea level rises in the Mediterranean region where the plant is located.	Long	Unlikely	- As a result of the rise in sea water level, a serious increase in temperature is observed in the coastal areas and sudden weather changes are experienced. It has economic risks for marine biodiversity and social life	- Although sea level rise does not have direct physical effects on the plant, economic effects are expected. SASA will comply with all local climate regulations to minimize disruptive effects
Destruction of biodiversity	- In relation to climate risks, the plant's negative impact on the region's flora and fauna	Medium-Long	Unlikely	- Negative impact of plant species and agriculture with polluted air and soil in the region	- According to the studies cited in the EIA report, the aforementioned activity is not expected to have a negative impact on protected areas. There were no endangered living community observed around the plant during the flora and fauna studies conducted for the EIA report
Overtemperature in long-term	- Considering RCP 8,5 scenario over-temperatures in long-term are anticipated	Long	Possible	- Increased risk of fire as a result of high temperatures	- BAT are used in plant equipment to tackle with over temperature
Drought in long-term	- Particularly in Mediterranean region over-temperatures, less precipitation and dependent on them drought is inevitable.	Long	Possible	- Long-term droughts cause disruption of the PTA plant's water needs, equipment and business continuity. The financial effects of all these effects on the plant are inevitable	- One of the most important reason behind the drought risk is because of water use from wells. Since plant will reuse 55-60% of its total wastewater, need of water withdrawal from wells will be decreased accordingly. The water wells to be used in the plant are operated by obtaining the necessary permits
Change in precipitation regime	- The impact on groundwater and climate of long-term precipitation regimes, which are generally in a downward trend	Long	Possible	- Changes in long-term precipitation regimes are in a downward trend and contain the risk of drought. These risks have a financial negative impact on the organization	- The Climate Change Working Group continually examines the organization's potential for precipitation patterns and issues. According to the climate change information portal data, the expected precipitation, especially in winter, is expected to be lower in the next 20-year projection

METRICS & TARGETS

SASA PTA
PRODUCTION PLANT
GHG EMISSION

METRICS & TARGETS



SASA PTA PRODUCTION PLANT GHG EMISSIONS

As SASA PTA, we aim to establish our carbon pricing policy based on GHG emissions with the implementation of the European Border Carbon Adjustment Mechanism and Emissions Trading Systems in Turkey. Scenario approaches involving climate change risks were created with forward-looking approaches. Our GHG emissions have been determined as forward-looking and historically across SASA. All emissions have been calculated in accordance with the GHG Emissions Calculation Protocol. Climate-related risks are described in the Metrics & Targets table. In this table, metrics are determined for the items listed.

A cost assumption has been made for the transition to the ETS and European CBAM, since the ETS system has not been implemented in Turkey yet, the financial cost we will be exposed is uncertain. Risks and explanations are available in the Metrics & Targets Table regarding anticipated cost for transition to ETS and CBAM.

Since the PTA Production Plant is under construction, emission targets have been determined. Operational targets are given according to the SASA Carbon Road Map. The carbon reduction target year has been projected as 2025. When the PTA Production Plant start to operation, it is aimed to water reuse water use by 55-60% in 2023 with the water recovery system. SASA PTA plant will produce its own energy bu the technology investments. Solar energy systems, biogas plant, offgas units are in a position to meet the required energy. When we examine our metrics in terms of climate risks, RCP 8,5 and 4,5 scenarios were used for estimations.

PTA Production Plant has been studied using IFC, ISO and other local standards during the desing.

- ✓ During the construction stage, we proceeded with reference to IFC, ISO and other local standards. While performing scenario analysis, we determined the limitations and assumptions within the scope of these standards,
- ✓ We made a metric calculation with the GHG emissions calculated according to the GHG Protocol methodology. Meanwhile, we took care to ensure the GHG efficiency ratio and defined our calculation methodology,
- ✓ We have explained the performance intended the targets we use while managing climate-related risks and opportunities,
- ✓ We have grouped our targets into reducing GHG emissions and reducing physical intensity.

SASA PTA PRODUCTION PLANT GHG EMISSIONS

Operational Phase Emissions

Scope 1 (direct emissions) and Scope 2 (indirect emissions from energy) are used in the GHG calculation. Scope 3 (GHG emissions throughout the chain, including suppliers) is not included in this report.

When calculating the emissions, it is calculated according to the GHG Emission Protocol. Emissions sources are examined under 4 headings for the operation phase;

- Emissions from vent 104,096.16 t CO₂ eq- scope 1
- Emissions from combustion 64,688.29 t CO₂ eq- scope 1
- Electricity consumption – 37,499.33 t CO₂ eq- scope 2
- Fugitive emissions 822.85 t CO₂ eq - scope 1

Total 132,113.97 t CO₂ eq (Scope 1-2)

The tCO₂eq rate per tonne of PTA produced from SASA's New PTA Production Plant is 0.084.

Construction Phase Emissions

The PTA Production Plant includes the construction and operation phases mentioned in the previous parts of the report. Emissions from construction works have been calculated according to used concrete, insulation, metal, and wood material activities. Combustion emissions come from diesel products used in the construction phase. Transport emissions, on the other hand, are emissions that occur during the transportation of plant equipment. Electricity use is the sum of the uses required during the construction phase. GHG emissions from the construction phase are outlined below.

- Emissions from only construction works 507,737.20 t CO₂ eq
- Emissions from combustion 866.35 t CO₂ eq
- Emissions from electricity consumption 2.8 t CO₂ eq
- Emissions from transportation 3,008.56 t CO₂ eq

Total 511,614.91 t CO₂ eq (Scope 1-2)

Objectives	Explanations	Quantity Unit	Quantity	Base Year	Target Year	Target
PTA plant GHG emissions (Scope 1) operating phase	During operation fugitive, vent, combustion emissions	T of CO2 eq	169,607.31	In operating year	2025	It is included SASA target based on carbon intensity
PTA plant GHG emissions (Scope 2) operating phase	Electricity emissions	T of CO2 eq	-37.5	In operating year	2025	It is included SASA target based on carbon intensity
PTA plant GHG emissions (Scope 1-2) construction phase	Construction, combustion, electricity, transport emissions	T of CO2 eq	511,614.91	2022	-	No forward target can be given for the construction site.
SASA (Including PTA plant) GHG emissions intensity	Total of scope 1 and 2 emissions	T of CO2 eq / T production	0.498	2021	2025	20% reduction
Water use construction phase	Utility water used in the construction phase	m3 / day	504	2022	-	No forward target can be given for the construction site.
Water use operation phase	Cooling, process and utility water use	m3 / day	43,200	2022	2023	55-60% wastewater recovery (18,302.8 m3 / day)
Energy recovery	Renewable energy percentage of the electricity to be used in the PTA production plant	MW %	0 (operational phase not yet started)	2022	2023	45 MW (will supply 100% electricity demand)
Technology investments	Technology investments made within the scope of emission reduction and green investments.	Million €	-	2022	2023	42,8 ⁽⁴⁾
Policy and legal risks	Cost assumption for the transition to the Emissions Trading System and the European Carbon Border Adjustment Mechanism	Million €/year	13,6 milyon €/year ⁽⁵⁾	2022	2023	Will be identified according to the future Turkish ETS and EU CBAM carbon prices
Carbon Pricing	The carbon price today is around € 80 per ton of CO ₂ . It is expected to increase in the next projection.	Euro	80	2022	2023	European Union carbon prices are followed
Industrial fires	The number of hot days per year is expected to increase until 2040.	% percent of hot days per year	10% ⁽⁶⁾	2022	2040	Zero industrial fire
Change in precipitation	According to RCP 8,5 scenario, annual precipitation level is expected to decrease 25%	% annual precipitation level	25% ⁽⁷⁾	2022	2040	100% rainwater collection is ensured by the collecting canals throughout the plant
Flood	The plant was built above the flood level to prevent flooding	% of flooding events in all other extreme weather events	45% ⁽⁸⁾	1975-2018	2040	Zero flooding

4: With solar energy, water recovery, treatment plant investments

5: It has been calculated regarding EU ETS carbon price on the 8th of April 2022

6,7.: The data are based on RCP 8,5 and 4,5 scenarios

8: EIA report Figure 74. Adana Meteorology Station Long-Year Extreme Weather Events

TCFD DISCLOSURES INDEX

Thematic Area	Recommended Disclosures	Page(s)
Governance	a Describe the board's oversight of climate-related risks and opportunities.	16
	b Describe management's role in assessing and managing climate-related risks and opportunities.	17,18
Strategy	a Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term.	20,21
	b Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning.	22-26
	c Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.	27-31
Risk Management	a Describe the organization's processes for identifying and assessing climate-related risks.	33,34,36, 21
	b Describe the organization's processes for managing climate-related risks.	37, 38 ,39, 40
	c Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management.	35, 36
METRICS & TARGETS	a Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process.	42
	b Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks.	43
	c Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets.	44

EQUATOR PRINCIPLES INDEX

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Principle 2	Environmental and Social Assessment	11-14
Principle 3	Applicable Environmental and Social Standards	11
Principle 4	Environmental and Social Management System and Equator Principles Action Plan	11-14
Principle 5	Stakeholder Engagement	13
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Principle 10	Reporting and Transparency	11

SASA

POLYESTER SAN. A.Ş.

FOR INFORMATION ABOUT THE REPORT, YOUR OPINIONS, AND SUGGESTIONS;

sustainability@sasa.com.tr

www.sasa.com.tr

SASA Polyester Sanayi A.Ş – ADANA

Adress: Sarıhamzalı Mah. Turhan Cemal Beriker Bulvarı No:559 Seyhan / Adana

Phone: +90 322 441 00 53

Fax: +90 322 441 01 14

E-Mail: info@sasa.com.tr

SASA Polyester Sanayi A.Ş – İSKENDERUN

Adress: Güzelçay Mahallesi, 616. Sk. No: 6 31200 İskenderun / Hatay

Phone: +90 326 626 21 15

Fax: +90 326 626 21 13

E-Mail: info@sasa.com.tr

REPORTING CONSULTANT & DESIGN

enexion
group

ENEXION TURKEY

Enexion Enerji Danışmanlık ve Risk Yönetimi A.Ş. - İSTANBUL

Adress: Akasyalı Sokak No: 5/21 4. Levent 34330 İstanbul

Phone: +90 212 280 0705

E-Mail: bilgi@enexion.de

Website: www.enexion.com.tr

ENEXION GERMANY

Enexion GmbH - FRANKFURT

Adress: Am Kronberger Hang 2 a 65824 Schwalbach am Taunus Frankfurt Germany

Phone: +49 (0) 61 73 93 59 0

Fax: +49 (0) 61 73 93 59 55

Website: www.enexion.de

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