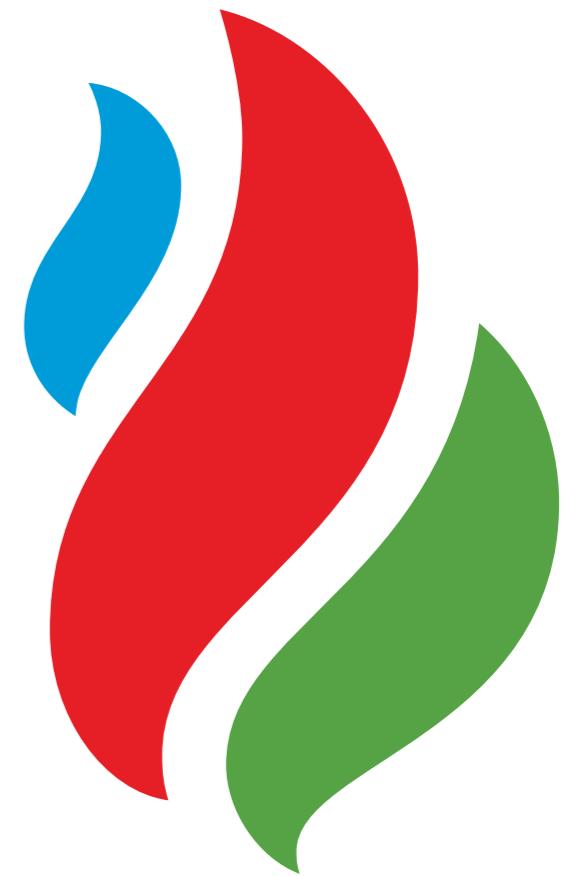




SOCAR TÜRKİYE 2021

**Sustainability
Report**





**Stronger.
Together.**



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About the Report

Maintaining its development with an integrated service approach throughout the value chain extending from the source to the end user, SOCAR Türkiye continues to grow by securing its future with a business strategy that envisages the systematic management of social, economic and environmental impacts arising from its activities, in addition to the financial value it creates.

SOCAR Türkiye Sustainability Report 2021, in which the main policies adopted in managing the social, economic and environmental impacts of SOCAR Türkiye's activities, the company's sustainability priorities, and the results of activities and performance in support of the United Nations Sustainable Development Goals are shared, covers the activities of the parent company SOCAR Türkiye (Corporate Headquarters), Petkim, STAR Refinery, SOCAR Storage, SOCAR Terminal, Petkim WPP, BURSAGAZ, KAYSERİGAZ, SOCAR Energy Trade, Enervis, Millenicom and SOCAR R&D and Innovation in Türkiye between January 1, 2021 and December 31, 2021. Consolidated data of SOCAR Türkiye group companies are included in some information, especially financial data, in order to reflect the integrity of the company. However, unless otherwise stated, all data in the report reflects the data of the companies included in the scope of the report.

This report has been prepared in accordance with the GRI Standards: "Core" option. Material topics, which are the main elements of the report content, have been identified in accordance with the "content identification" principles outlined in the GRI Standards, and the "content quality" principles outlined in the GRI Standards have been taken into consideration while creating the data shared.

The Adobe Acrobat (.pdf) version of the report is available at www.socar.com.tr. You can contact us through the communication channels on the "Contact" page of our website to obtain information about SOCAR Türkiye's activities and the report and to convey your opinions.

You can find the full list of SOCAR Türkiye's group companies, including business units and excluding Refinery and Petrochemicals, and the details of the group companies included in the report, in the GRI Content Index at the end of the report.



Zaur Gahramanov
CEO

SOCAR Türkiye CEO's Message



Dear Stakeholders,

As SOCAR Türkiye, we offer products and solutions for the needs of millions of people in the oil and natural gas sector. In doing so, we aim to be among the world's leading oil and natural gas companies with the strength we derive from the joint synergy of the states of Azerbaijan and Türkiye. In line with this goal, we operate as Türkiye's largest foreign direct investor and industrial holding company with the investment projects we started in Türkiye in 2008 and our investment volume reaching 17.6 billion dollars today. While realizing a wide value chain from raw materials to consumers with the integration of "Refinery-Petrochemistry-Energy-Logistics-Distribution" in our production and operation activities in our main business units, we also prioritize integrating our sustainability approach into our corporate culture and strategy from production to sales, from our employees to our stakeholders.

We intensify our efforts for the requirements of the Paris Climate Agreement and the actions to prepare for the European Green Deal, and within this framework, we shape our business processes according to the global standards set by national and international industry associations. We adopt the United Nations Sustainable Development Goals and act in line with these goals.

As a result of the projection of global trends in the oil and natural gas industry, we at SOCAR Türkiye have built our sustainability strategy on three main components and one supporting mechanism: Decarbonization, Circular Economy, Green Finance and Opportunistic Operation Model.

TOWARDS NET ZERO

Within the scope of the decarbonization strategy, which is the first of SOCAR Türkiye's sustainability strategies, we are taking important steps towards reducing our absolute emissions from our operational activities by 40% by 2035 and reaching the net zero emission target by 2050. Carbon tax practices at the border, which will be implemented due to developments such as the Paris Climate Agreement, which Türkiye is a member of, and the European Green Deal in our close geography, increase the importance of the adaptation efforts carried out in this direction in our country and the key role of the energy sector in preventing climate change. At SOCAR Türkiye, in light of these developments, we aim to implement our decarbonization strategy within the scope of current changes in legal regulations for our 2050 target, closely monitor and evaluate potential projects in critical new areas, establish partnerships, and at the same time expand the scope of our work by implementing carbon offset projects.

ENVIRONMENTAL SENSITIVITY

As part of our sustainability strategy, we also plan to reduce our environmental impact through biodiversity, zero waste and green energy alternatives that respect the universe. In this context, we carried out 10% of our current electricity end-consumer portfolio, which is 231 million kilowatt-hours, as "green energy" sales in 2021 with the sale of green energy certified with the International Renewable Energy Certificate (I-REC). In addition, we added international carbon certification services such as Gold Standard and Verified Carbon Standard (VCS) to the product range offered to our customers.

DIGITALIZATION AND INNOVATION

At SOCAR Türkiye, we act with the vision of becoming one of the world's leading digital companies thanks to our infrastructure investments in recent years. We are reaping the rewards of these efforts on a global scale.

We are proud that Petkim, one of our group companies, was included in 2020 and STAR Refinery in 2021 in the World Economic Forum's (WEF) "Global, Lighthouse Network", the platform of companies that best implement Industry 4.0. In addition, we strive to use digitalization and innovative applications at all stages of our processes; we continue SOCAR Türkiye's digital transformation journey at all stages from production to distribution.

Today, the value of energy in business and daily life is increasing; even as the search for different energy sources gains momentum, International Energy Agency forecasts show that oil and natural gas will meet 48% of final energy demand in 2040. As such, our industry will continue to play an instrumental role in the global supply of affordable, secure energy, which is essential for economic development, quality of life, healthy livelihoods and poverty eradication. As our industry takes on this important role, the transition to a low-carbon future must be supported. Recognizing our responsibilities and impact in this conjuncture, we are adapting our business models and strategies to adapt to the low-carbon energy transition. In line with our sustainability priorities in our business processes, we transparently report the activities of all our group companies and their impacts.

CORPORATE GOVERNANCE

On behalf of the Board of Directors, we established the Corporate Governance and Sustainability Committee, which monitors the strategies, implementation, materialization and declaration of our Group's climate change strategies on behalf of the Board of Directors, in order to make suggestions and recommendations for initiatives that will ensure that SOCAR Türkiye has the highest corporate governance standards and for the development of corporate governance. We develop our sustainability strategies and set our targets for emission reduction and climate change in line with these strategies in order to prevent climate change risks arising from greenhouse gas emissions, adapt our business model to the energy transition and maintain our leading position in the sector by seizing the opportunities brought by this transition. Recognizing that social development and progress in business life can only be achieved through women's empowerment, we are working to strengthen the role of women in business life with a goal beyond increasing women's employment. In this context, in 2021, we became a signatory to the UN Women's Empowerment Principles (WEPs). In support of these principles, we pay attention to diversity, equality and inclusion in our business processes and offer our employees a work environment where they feel good and safe, open to development, participatory and respectful of human rights. In order to increase the awareness and impact of the business world on sustainable development, we aimed to increase our interaction on sustainability by becoming a member of the Sustainable Development Association, the Türkiye representative of the World Business Council for Sustainable Development platform, which also works in line with the United Nations Global Compact Sustainable Development Goals.

We are pleased to share with you our sustainability report, which we prepared with this vision and which is the first report prepared in Türkiye in accordance with the GRI 2021 Oil and Gas Sector Standard 2021. As SOCAR Türkiye, I would like to thank my colleagues for their contributions to our sustainable value creation chain. I would like to extend my respect to our stakeholders for their unwavering support in every field in which we operate.

Zaur Gahramanov
CEO



About SOCAR Global

As an energy company providing integrated solutions, SOCAR continues to develop its international operations and deliver economic, social and environmental benefits globally through strategic partnerships. SOCAR is engaged in exploration, production and processing of oil and natural gas resources; distribution of oil, natural gas and natural gas condensates; national and international marketing of crude oil and petrochemical products; and natural gas supply in Azerbaijan. Founded in 1992, SOCAR, the State Oil Company of Azerbaijan, utilizes the resources of Azerbaijan, one of the world's richest countries in oil and natural gas, for international development and benefit.

SOCAR provides economic, social and environmental benefits on a global scale through strategic collaborations. In this direction, SOCAR has rapidly strengthened its international operations, established representative offices in 13 different countries, established international trade companies in Singapore, Vietnam, Nigeria and Switzerland, and acquired assets in Türkiye, Georgia,

Ukraine, Romania, Switzerland and Greece. SOCAR has realized the most important of its strategic projects carried out on a global scale in Türkiye with an investment of 19.5 billion USD. SOCAR, which plays an important role in the future of two fraternal countries and creates an integrated value chain in the field of energy, draws its strength from friendship, cooperation and trust.

SOCAR Global Activities

Exploration

- Absheron
- Babek
- Bulla Deniz
- Garabagh
- Zafar-Mashal
- Ashrafi-Dan Ulduzu-Aypara
- Shafag-Asiman
- D230



Production

- Azeri-Chirag-Gunashli (ACG)
- Shahdeniz
- Umid
- Bahar Gum Deniz
- Binegedi
- Kurovdagh
- Kursengi and Garabaghli
- Mishovdagh Kelameddin
- Gas Processing Plant
- Heydar Aliyev Oil Refinery
- STAR Refinery
- Muradkhanli, Jafarli ve Zardab
- Neftchala
- Pirsahhat
- Ramany
- Surahany
- South West Gobustan
- Zigh and Hovsan



Refining and Gas Processing

- Gas Processing Plant
- Haydar Aliyev Oil Refinery
- STAR Refinery



Petrochemicals

- Azerikimya Production Union
- Petkim
- SOCAR Carbamide
- Polypropylene Plant
- High Density Polypropylene Plant
- SOCAR Methanol

Transportation

- Baku-Novorossiysk Oil Pipeline
- Baku-Supsa Oil Pipeline
- Baku-Tbilisi-Ceyhan Oil Pipeline (BTC)
- South Caucasus Natural Gas Pipeline (SCP)
- TANAP
- TAP
- Dubendi Terminal
- Kulevi Terminal
- Rail Transportation
- SOCAR Terminal

Services

- Azerigas Production Union
- SOCAR Energy Ukraine
- SOCAR Georgia Gas
- SOCAR Georgia Petroleum
- SOCAR Petroleum
- SOCAR Romania
- SOCAR Trading
- SOCAR Energy Switzerland
- A1 and Pronto Oil in Austria



SOCAR Türkiye

SOCAR Türkiye Enerji A.Ş. (SOCAR Türkiye), the Türkiye subsidiary of Azerbaijan State Oil Company SOCAR, is one of the world's longest-established oil and natural gas companies, it started its operations in 2008 by acquiring 51 percent of Petkim's shares from the Privatization Administration. Operating in the petrochemical, refining, natural gas trade and distribution sectors and realizing the value-added chain starting with crude oil and ending with the final product within the framework of the clustering model, SOCAR Türkiye successfully continues its activities as the largest industrial holding in the country and continuously improves its operations.

SOCAR Türkiye is the first company in Türkiye to receive the title of 'Special Industrial Zone' for its lands in Aliaga, where most of its investments are located.

SOCAR Türkiye, which has become a symbol of the increasing economic cooperation between the two brotherly countries Azerbaijan and Türkiye, supports Türkiye to become an important power in the international energy arena with the investments it realizes. While total SOCAR investments in Türkiye reach 17.6 billion dollars, SOCAR Türkiye's total investment will reach 19.5 billion dollars with its growth-oriented projects in natural gas, refinery and petrochemicals.

Milestones

**2008**

SOCAR started its activities in Türkiye by purchasing Petkim as part of its privatization scope in 2008.

**2011**

The foundation was laid for Star Refinery's construction.

**2014**

The foundation was laid for TANAP construction.

**2015**

13% of SOCAR Türkiye's total capital was purchased by Goldman Sachs under a put option share purchase agreement.

**2016**

The operations began after the first phase of SOCAR Terminal was completed in 2016 and the second phase in 2018.

**2018**

The part of TANAP starting from the Türkiye-Georgia border to Eskişehir was completed and its activities started. SOCAR Türkiye's land in Aliaga has been declared a Special Industrial Zone. STAR Refinery started its operations in the last quarter of 2018.

**2019**

TANAP was completed as of July 2019. It has become able to transport gas to Europe.

**2020**

SOCAR Türkiye R&D and Innovation Center was established.

**2021**

Natural Gas Business Unit Integration was completed.

Affiliate Structure

100%
SOCAR



Within the framework of its \$19.5 billion investment plan, SOCAR Türkiye continues to resolutely implement strategies that will carry the competitiveness of the energy sector to the top.

Having completed the integration process in refining, petrochemicals, energy, logistics, distribution and warehousing, the Group is the largest industrial holding in Türkiye and includes leading companies such as Petkim, TANAP, STAR Refinery, SOCAR Terminal, Petkim WPP, BURSAGAZ, KAYSERİGAZ, ENERVİS, SOCAR Energy Trade, Millenicom, SOCAR Trade and SOCAR Storage.

SOCAR Türkiye Investments

Headquarters

SOCAR TÜRKİYE ENERGY

Headquarters for petrochemical, refining and natural gas operations

SOCAR TÜRKİYE R&D AND INNOVATION

Work on innovative, sustainable, environmentally friendly and market-oriented products and technologies

SCR CONSULTANCY

Real estate construction and consultancy

Refining and Petrochemicals Business Unit

PETKİM

Türkiye's first and only integrated petrochemical producer

STAR REFINERY

Diesel, jet fuel, LPG, reformate and naphtha producer

SOCAR STORAGE

Storage and operation

SOCAR PETROL TİCARET

Wholesale and retail sale of fuel oil, air and marine fuels

PETKİM WWP

Wind power plant

Natural Gas Business Unit

BURSAGAZ

Natural gas distribution company

KAYSERİGAZ

Natural gas distribution company

SOCAR ENERJİ TİCARET

Natural gas and electricity, trading and sales activities

ENERVİS

Energy sector service provider

Portfolio Management Business Unit

SOCAR FİBER

Fiber optic line investment for electronic communication

SOCAR TERMINAL

Aegean Region's largest container terminal

MILLENICOM

Telecommunication service provider

TANAP

The biggest link of the Southern gas corridor that will transport Azerbaijan's natural gas to Europe.



Vision, Mission and Corporate Values

Vision

To be an integrated energy company that adds value to all our stakeholders with the awareness of our economic and social responsibilities.

Mission

To operate and develop our entire value chain from the source to the end user in an efficient and sustainable manner with our experienced, knowledgeable and committed human resources at all levels.



Values

Trust

We gain trust with our honesty, integrity and ethical business practices. Working with standards based on integrity and high business ethics is at the core of our business.

Agility

We anticipate the changing needs of our customers, competitive market trends and opportunities. We embrace change, move forward with resilience and strive to maintain our business focus even in rapidly changing conditions.

Inclusiveness

We are aware that for our company to succeed, we need people with different ideas, different strengths and different experiences. We pursue different perspectives and encourage everyone to collaborate and contribute to achieve common goals.

Passion

We are connected to our work with both heart and mind. We work with strong emotions that give meaning to our daily work. We welcome new opportunities and challenges as quickly as possible, with high energy and enthusiasm.

Efficiency

We hold ourselves accountable to our shareholders, customers, colleagues and society and lead the creation of a safe, reliable and sustainable environment wherever we operate. We focus on continuous improvement, make the best use of our time and resources, and utilize the most effective and efficient processes.

Accountability

We acknowledge the impact of our actions and decisions on the people, environment and society around us. We take ownership of our work, act responsibly and care about results. We keep our promises and fulfill our commitments.

The Economic Value Created

Economic and Administrative Performance *

	2019	2020	2021
Total Sales	31,364	31,315	89,446
Total Assets	46,839	56,155	119,374
Total Net Assets	22,102	24,410	45,173
Incentives and funds received from the government and various international organizations*	2,593	788	3,617

Table 1: SOCAR Türkiye Summary Financial Indicators

*Incentives and Funds are data from Petkim, STAR Refinery, SOCAR Storage, KAYSERİGAZ

The tax amounts paid by SOCAR Türkiye companies according to the years are given below.

SOCAR Türkiye Tax Payments

	2019	2020	2021
TOTAL	4,216,354,251.01	11,488,496,318.59	6,304,584,520.34

Table 2: SOCAR Türkiye Tax Payments

* Regarding the direct and indirect tax types subject to declaration of SOCAR Türkiye Group Companies within the partnership structure of 2022, the tax amounts accrued in the declarations are taken into account.

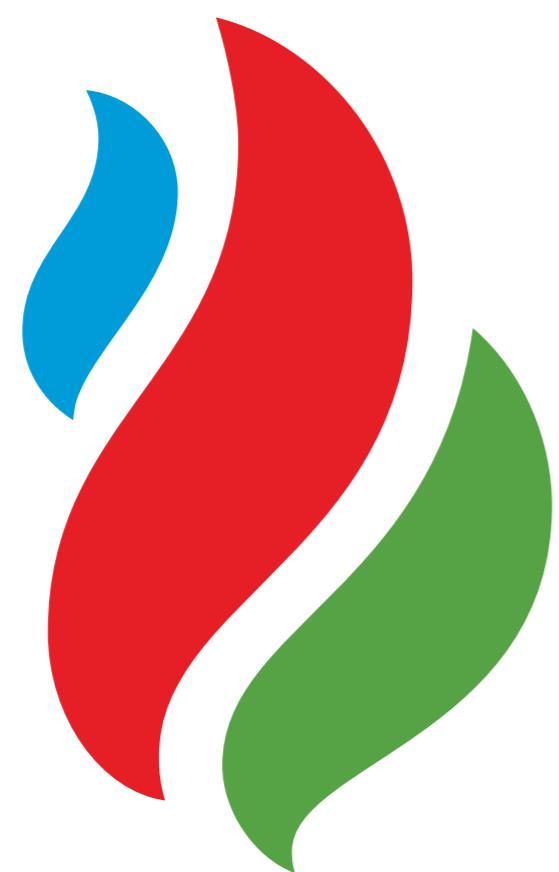
* Even if each declaration is subject to stamp duty, only the amount related to the relevant tax type has been taken into account.

Tax Policy

For SOCAR Türkiye, one of the indicators of being a responsible corporate citizen, is the direct impact it has on the economic development of the country in which it operates.

One of the most basic indicators of this impact is the tax payments created. In line with the legal compliance objective of SOCAR Türkiye and its group companies, the companies act in compliance with all regulations of the tax legislation applicable in Türkiye.

In order to ensure our compliance with tax legislation, the expert organizations we receive services from review company transactions every month and provide full approval reports at the end of the year.



Stronger. Together.



STAR Refinery

Among the World's Most Digital Refining Companies

STAR Refinery, Türkiye's only refinery company with refinery-petrochemical integration, is also the first company in Türkiye to hold a Strategic Investment Incentive Certificate. STAR Refinery, which meets approximately 25% of Türkiye's need for processed crude oil products on its own, saves approximately 1.5 billion dollars annually in reducing Türkiye's imports of petroleum products.

STAR Refinery, one of the world's most digital companies, has been realized by adopting the most advanced technologies available, starting from the engineering design phase, in order to ensure environmental sustainability as a whole. With an investment of 7 billion USD, STAR Refinery is one of Türkiye's largest energy investments and plays an important role in the security of energy supply with its high complexity and transformation capability, technology to process different types of crude oil and annual storage capacity of 1.9 million cubic meters.

• Türkiye's Crude Oil Supply Ratio	5%
• Annual Crude Oil Processing Capacity	11 million tons
• Total Production	10.6 million tons
• Capacity Utilization Rate	101%
• Nelson Refinery Complexity	9.2
• White Product Efficiency	84%
• Medium Distillate and Reformate Efficiency	70,9%
• Total Assets 2021	123.41 billion TL
• Total Number of Employees 2021	1,081

Petkim

Türkiye's Petrochemical Technologies Base

Established as Türkiye's first and only integrated petrochemical plant, Petkim continues its activities as Europe's leading petrochemical complex and production base that incorporates high technology with the investment plan carried out after being included in the SOCAR Türkiye portfolio in 2008. As one of Türkiye's largest industrial enterprises and export leaders, Petkim provides inputs to plastics, chemicals, packaging, pipes, paint, construction, agriculture, automotive, electrical, electronics, textiles, detergents, cosmetics and many other sectors with the high value-added raw materials it produces, primarily ethylene, benzene, orthoxylene, paraxylene, polyvinyl chloride (PVC), plastic surgery products (PSP), polypropylene (PP) and plastic colorants (masterbatch), and gives life to numerous sub-industries. In line with its vision of sustainable development and low carbon economy, Petkim is increasing its R&D and innovation infrastructure and capacity every day in order to respond to the growing need for value-added petrochemical products that require high technology in the hydrocarbon sector.

• Türkiye's Petrochemical Product Supply Ratio	16%
• Annual Crude Oil Processing Capacity	3.6 million tons
• Total Production	3.3 million tons
• Capacity Utilization Rate	92.6%
• Ethylene-Propylene Efficiency	47.0%
• PX, OX and Benzene Efficiency	44.1%
• Total Assets 2021	30.43 billion TL
• Total Number of Employees 2021	2,385





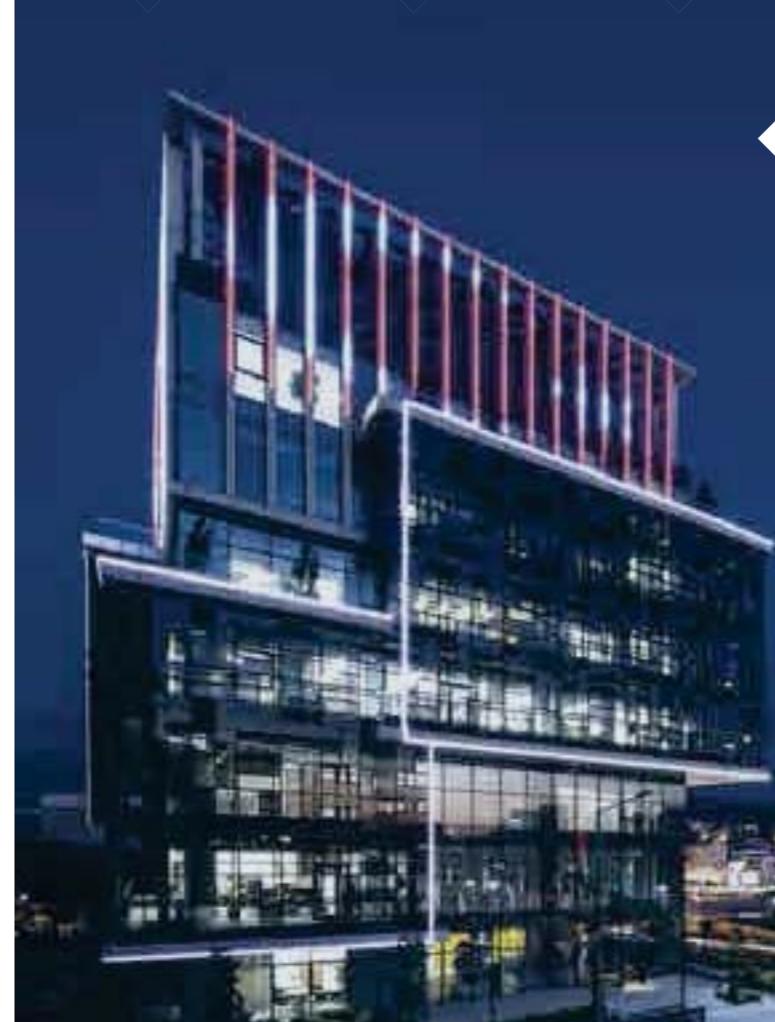
Petkim WPP

Renewable Energy Investment

Petkim WPP, a wind power plant consisting of a total of 17 turbines, is SOCAR Türkiye's most important investment in renewable energy. The plant, which was implemented with a total investment of 55 million EUR, has an installed capacity of 51 MW and is important in meeting the energy needs of SOCAR Türkiye's facilities in Aliaga, especially in increasing Petkim's energy supply security, reducing production costs and environmental impacts.

In 2021, the Energy Market Regulatory Authority (EMRA) approval was obtained for an additional turbine investment of 3.8 MW/h in order to increase the installed WPP capacity. Studies on alternative areas for the installation of floating Solar Power Plants (SPP) are ongoing. Studies are also underway for the installation of hybrid SPPs. In the installed WPP capacity, alternative studies are being carried out for the use of the capacity remaining outside the licensed capacity.

- Total Installed Capacity 51 MW
- Total Number of Turbines 17
- Total Investment 55 Million EUR



BURSAGAZ

Türkiye's Third Largest Natural Gas Distribution Company

BURSAGAZ, Türkiye's Third Largest Natural Gas Distribution Company, was established in 1992 by BOTAS to sell natural gas. As of 2019, BURSAGAZ, which continues its activities under the roof of SOCAR Türkiye, realizes exemplary practices in Türkiye with over 1 million subscribers and a technology-oriented management approach.

The network length of the company, which expands its service area every year and serves 11 districts of Bursa, reaches 7,159 kilometers by the end of 2021. BURSAGAZ, which was awarded the LEED Platinum Certificate at the highest certification level with its environmentally friendly headquarters building, continues to implement company strategies in line with international standards within the existing management systems in accordance with its vision of "becoming a world-class company".

- Investment (2019-2020-2021) 332 Million TL
- Number of Subscribers +1.1 million
- Number of Gas Users (BBS) 1,029,412
- Total Number of Employees 2021 243
- Natural Gas Supply 2021 3.41 Sm³
- Network Size 7,182 km

SOCAR Storage

The Inseparable Link of the Energy Chain

In line with the demands of SOCAR Türkiye group companies and business partners, the storage of petroleum products and natural gas in tanks, filling operations in land and sea tanks and unloading operations from sea tankers to tanks are carried out in accordance with national and international conditions and OHS-Ç policy. The SOCAR storage terminal in Izmir Aliaga is the largest terminal in the Aegean Region with 530,000 cubic meters of fuel product and 45,000 cubic meters of LPG storage capacity. It is also one of Türkiye's 5th largest storage terminals.

The SOCAR storage facility, integrated with pipelines to the STAR refinery, which became operational in 2018, provides operational flexibility to the refinery thanks to its high capacity.

- Number of terminals 5
- Fuel product storage 530,000 m³
- LPG storage capacity 45,000 m³
- Total number of employees 77



KAYSERİGAZ

Energy Market Regulatory Authority (EMRA) First Natural Gas Distribution Tender

Energy Market Regulatory Authority (EMRA) First Natural Gas Distribution Tender Established in 2003 as the first natural gas distribution tender of the Energy Market Regulatory Authority (EMRA), KAYSERİGAZ is one of the most important players in the Türk energy sector, distributing natural gas in Kayseri.

Playing a major role in ensuring the safe and uninterrupted energy supply Kayseri needs, KAYSERİGAZ supplied a total of 751 million cubic meters of natural gas to its subscribers in 2021. With a network of 5,603 kilometers, KAYSERİGAZ has one of the most modern natural gas distribution networks in Türkiye.

- Investment (2019-2020-2021) 141 Million TL
- Number of Subscribers 599,568
- Number of Gas Users (BBS) 586,403
- Total Number of Employees 2021 147
- Natural Gas Supply 2021 750,843,567 Sm³
- Network Size 5,603 km



SOCAR Terminal

Aegean Gateway to the World

The terminal was operated by APM Terminalleri Liman İşletmeciliği A.Ş. and its 100% share was taken over by SOCAR Türkiye on 27.12.2018. SOCAR Terminal was implemented by Petkim to complete the logistics integration step. The port investment reached 400 million USD, including financing costs. SOCAR Terminal was constructed by Türk contractors and all materials, except for special materials, were procured from Türkiye.

When SOCAR Terminal operates at full capacity, up to 600 people can be employed. SOCAR Terminal is the largest integrated terminal in the Aegean Region with a container handling capacity of 1.5 million TEU. It is also the first port in the Aegean Region where ships with a capacity of 18,000 TEU can effectively berth with its 700-meter-long one-piece quay structure. The port, which has a water depth of 16 meters, also has a total of 42 hectares of back service area used for container storage.

Area

• Handling Capacity (TEU/Year)	1.500.000 TEU
• Field Stacking Capacity	25.000 TEU
• Refrigerated Container	850 (380V)
• Total Area	420.000 m ²

Equipment Park / Capacity

• STS	3 / 65 tons
• RTG / Capacity	10 / 41 tons
• Full Container Stacking Equipment (RS)	3 / 45 tons
• Empty Container Stacking Equipment (EH)	3 / 9 tons
• Tow truck	26 / 65 tons

ENERVIS

Expert Service Provider in the Energy and Distribution Sector

ENERVIS, whose mission is to achieve the national target of increasing Türkiye's energy efficiency by 20%, serves Türk industrialists in the areas of efficient use of resources by industrial enterprises and energy production from green energy sources. Founded in 2012, ENERVIS, a specialized service provider in the energy and distribution sector, focuses on three areas: Survey and consultancy services, Energy efficiency applications (EPC), Efficient Facility Design and Implementation (EPC). Among the services ENERVIS offers to its customers and the areas in which it specializes; energy efficiency consultancy and applications in industry and buildings, ISO 50001 Energy Management System Consultancy, renewable energy systems consultancy and applications, technical-vocational training, natural gas infrastructure construction service activities, internal installation control, meter calibration, meter reading, gas cut-off-opening.

• Energy Saving	500,749 MWh
• Profit	58,989,195 TL
• Carbon Emission reduction	154,091 tons
• Number of Trees Saved	394,822
• Total Number of Employees 2021	302



Millenicom

Founded in 2004 with the aim of becoming the leading alternative operator in the liberalized Türkiye telecommunications market, Millenicom started providing services under the umbrella of SOCAR Türkiye in June 2019. Pioneering the alternative telecommunications sector in Türkiye and offering various telecommunications and communication services to more than 260 thousand customers, Millenicom connects its users to the world with affordable, advantageous, trouble-free and high quality internet. Millenicom provides fixed internet and fixed telephone services to its individual customers with ADSL, VDSL, FIBER options, while providing advantages such as attractively priced no-commitment, truly unlimited and quota-free internet, and 24/7 call center support. Millenicom aims to keep customer satisfaction at the highest level by responding to the needs of existing customers in the best way.

In addition to fixed internet and telephone services for corporate customers, Millenicom offers affordable, life-enhancing cloud solutions and IP-based quality voice that improve the quality of work, and expands its products and services in line with the needs of its customers through new product development activities and collaborations. Named "Alternative Operator Service of the Year Category Winner" in the Informatics 500 survey in 2017 and "Third in the Communication Services Sector" in the Türkiye's Top 500 Service Exporters survey in 2018 and 2019, the company has achieved significant success in a short period of time.

• Shareholder Structure	100% SOCAR Türkiye Enerji A.Ş.
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SOCAR Energy Trade

Türkiye's largest private sector natural gas wholesale portfolio

SOCAR Energy Trade carries out SOCAR Türkiye's natural gas and electricity trade and sales activities. With its customer-oriented service approach, experience and professionalism in portfolio management, the company provides natural gas and electricity supply services to its customers from a single source and offers customized solutions in the field of energy. Selling natural gas and electricity to natural gas and electricity distribution companies, organized industrial zones and independent consumers, SOCAR Energy Trade is the largest private sector player in the natural gas wholesale market, where it has been active since 2009. SOCAR Energy Trade is also one of the leading organizations in electricity trade and sales. In 2020, SOCAR Energy Trade's natural gas and electricity trade and sales volume reached 19 TWh and its total turnover reached 5 billion TL.

SOCAR Türkiye is one of the most important natural gas and electricity users with its industrial facilities in the Aliaga region. While the annual natural gas consumption of SOCAR Türkiye facilities has reached approximately 1.5 billion cubic meters, this amount is expected to increase further with the investments to be made in the coming years. In addition, when the consumption of the newly-owned natural gas distribution companies Bursagaz and Kayserigaz is taken into account, approximately 7 percent of the country's consumption is realized at SOCAR Türkiye facilities. With its experienced team, SOCAR Energy Trade aims to continue to contribute to the development of the natural gas and electricity markets, to continue to evaluate opportunities that will bring additional value to the Azerbaijani and Türk economies, and to increase its supply opportunities by taking into account its increasing market share.

• Shareholder Structure
100% SOCAR Türkiye Doğalgaz Yatırım A.Ş.

100% SOCAR Türkiye Doğalgaz Yatırım A.Ş.
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R&D and Innovation

Established in 1969 at Petkim Yarimca facilities and continuing its activities there after the facility was moved to Aliaga, SOCAR TÜRKİYE R&D and Innovation Inc. was established in December 2019 in order to bring the 51 years of experience of the R&D center in the field of petrochemicals to all group companies of SOCAR Türkiye and was entitled to receive the R&D Center certificate issued by the Ministry of Industry and Technology in June 2020. The purpose of the establishment of SOCAR R&D and Innovation Inc. is to develop innovative, sustainable, environmentally friendly and market-oriented products, catalysts and digital technologies for all stakeholders in the value chain and to increase the efficiency of production processes in line with SOCAR Türkiye's vision of becoming an integrated energy company that adds value to all stakeholders with economic and social responsibility. Areas of activity include catalyst research, green chemistry, sustainable, clean and efficient energy, value-added products, developing new application areas, product improvement and new product development, digital transformation and environmental solutions.

Located on the Refinery and Petrochemicals Business Unit campus in Aliaga, the SOCAR R&D Center consists of six laboratories (Rheology, Catalysis, Polymer Characterization, Environment and Biotechnology, Chemical Analysis and Chromatography), a 400 square meter pilot plant (polymer processing, polymerization, chemical process operations and catalyst testing systems) and offices, all on an area of 1,200 square meters.

• Installed Area	1,200 m ²
• Shareholder Structure	100% SOCAR Türkiye Enerji A.Ş.



Corporate Governance

Shaped by SOCAR Global's deep-rooted corporate culture, values and uncompromising code of ethics, SOCAR Türkiye adopts a transparent and accountable business conduct approach that is shaped by compliance with laws and regulations, internalization of modern corporate governance principles, and acts with an identical understanding in all fields of activity and business units. With the integration project implemented in 2019, SOCAR Türkiye aims to maximize the synergy created within the value chain formed by its subsidiaries.

Board of Directors and Senior Management Structure

The Board of Directors, the highest level management body of SOCAR Türkiye, consists of 7 members in total, including the Chairman, Deputy Chairman and 5 members. The duties of the Chairman of the Board of Directors and the CEO are carried out by different individuals and the CEO is not a member of the Board of Directors.

Committees at various levels have been established to ensure that the Board of Directors and executive activities are carried out effectively and with a joint decision. In this context; Audit Committee, Early Detection of Risk Committee, Corporate Governance and Sustainability Committee and Remuneration Committee have been established under the Board of Directors. With the refinery-petrochemicals-energy-logistics-distribution integration, SOCAR Türkiye is able to focus on critical and strategic areas such as evaluating strategic investment opportunities, risk management, talent management and portfolio management, thanks to the synergy arising from the realization of the management operations of group companies, particularly refinery and petrochemical operations, within SOCAR Türkiye.

As the only subsidiary of SOCAR Türkiye whose shares are publicly traded, Petkim's shares are traded on Borsa Istanbul. With its sustainability management efforts, Petkim has been continuously listed in the BIST Sustainability Index, which was launched by Borsa Istanbul in 2014 and determined by evaluating companies every year. SOCAR Türkiye senior management remuneration policy is determined in accordance with the SOCAR Türkiye total earnings procedure.

While determining the salary level, the job size is determined using global job evaluation methods. Using this job size, market data produced by global data providers are used as benchmarks and the salary level is determined. Bonus payments are also made on an annual basis, depending on the decision of the Board of Directors. The amounts to be distributed are decided based on company performance and the budget approved by the Board of Directors.

Committees Reporting to the Board of Director

Audit Committee	On behalf of the Board of Directors, the Audit Committee oversees the effectiveness and adequacy of SOCAR Türkiye's internal control systems, the functioning of these systems and accounting and reporting systems and the integrity of the information produced, the functioning and efficiency of independent audit processes and internal audit mechanisms, and compliance with corporate ethical rules, and makes suggestions and recommendations. These committees meet on a monthly and quarterly basis.	Early Detection of Risks Committee	On behalf of the Board of Directors, the Early Detection of Risks Committee makes suggestions and recommendations on identifying, defining, prioritizing, monitoring and reviewing strategic, financial, operational and other risks and opportunities that may affect SOCAR Türkiye's activities by calculating their impact and probability; managing, reporting and taking into account these risks and opportunities that may be exposed to in parallel with the Company's risk profile in decision-making mechanisms.
Corporate Governance and Sustainability Committee	On behalf of the Board of Directors, the Corporate Governance and Sustainability Committee makes suggestions and recommendations for initiatives that will ensure that SOCAR Türkiye has the highest corporate governance standards and for the development of corporate governance.		
Remuneration Committee	On behalf of the Board of Directors, the Remuneration Committee provides advice and recommendations to the Board of Directors for the purposes of nominating candidates for board members and senior executives and improving corporate governance practices regarding the remuneration of board members and senior executives.		
Executive Committees	The Executive Committee is responsible for evaluating and presenting to the Board of Directors the proposals raised by all committees that support corporate governance activities and report to the CEO. The Committee convenes monthly under the chairmanship of the CEO.		
Others Committee	In addition to the committees reporting to the Board of Directors, the committees that supports corporate management activities and reports directly to the CEO are; Group Risk Committee, Ethics and Corporate Social Responsibility Committee, Sustainability Committee, Investment Subcommittee, Strategic Development Subcommittee, HR and Performance Management Subcommittee, and Crisis Management Subcommittee.		
		SOCAR Türkiye Board of Directors	
		Corporate Governance and Sustainability Committee	Early Risk Detection Committee
		Audit Committee	Reumeneration Committee
		Executive Committee	Group Crisis Management Committee
		Group Risk Management Committee	Group Talent Committee
		Group Ethics and CSR Committee	
		Group Sustainability Committee	
		Business Unit Committees	
		Refinery and Petrochemicals Business Unit Daily Management Committee	Gas Business Unit Committees
		Value Creation Decision Committee	Risk Management Committee
		Strategic Planning and Investment Committee	Supply Management Committee
		Safety Committee	Operation and Maintenance Committee
		Commercial Committee	Contracts Committee
			Technical Committee

Figure 1: SOCAR Türkiye Committees

Risk Management

There are many opportunities that SOCAR Türkiye encounters during its operations, as well as many strategic, financial, operational, legal and similar risks that it may be exposed to. These uncertainties, which may affect the achievement of the Company's strategic goals and sustainable development, as well as the opportunities that may be obtained, need to be identified early and managed systematically. For this purpose, a comprehensive corporate risk management model has been established within SOCAR Türkiye. Risk management processes throughout the company are managed by experts responsible for these processes within the framework of the decisions taken by the Group Risk Committee, which reports to the CEO at the senior management level, under the supervision of the Early Detection of Risk Committee organized at the Board of Directors level.

The risk management function is positioned to support the company in achieving its goals and decision-making processes. During the planning and implementation phases of the strategy, target-based risk assessments are made within the framework of risk management, and it is ensured that the necessary actions are taken in a timely manner to achieve the targets through potential impact analysis and probability calculations and that resources are used based on these criteria. In addition, decision-making processes are supported with a risk perspective by making situation-specific risk assessments at strategic investment requests, critical stages of projects and decision moments that may have a significant impact on operations within the company.

The SOCAR Türkiye Risk Management Unit is positioned under the Board of Directors in a centralized manner within the organization in order to provide support to all group companies on senior management and unit basis in accordance with international standards, particularly ISO 31000 Risk Management. This preference ensures the efficiency, objectivity and independence of the work. The "Risk Appetite Statement", which sets the limits of the risks that can be taken as a basis both in the risk management process and in the company's activities and decision-making areas, was approved by the Board of Directors on December 12, 2020.

In addition to the traditional risk register list, SOCAR Türkiye has created an Environmental, Social and Governance Risk Register List where sustainability risks are analyzed in line with global concepts and sectoral needs such as the Paris Climate Agreement, the European Green Deal and Net Zero Carbon.

While creating this list, the requirements of the ISO 31000 Risk Management System Standard were taken into consideration. In the studies carried out according to this standard; difficult situations that may be encountered in the future are foreseen, time is saved, proactive management is encouraged, loss prevention and case management are improved, compliance with relevant legal and regulatory requirements and international norms is helped, business continuity is ensured and the standard provides guidance on similar issues.

The Environmental, Social and Governance Risk Register List is based on the COSO (Committee of Sponsoring Organizations) guide, an internal control guide, and best practices from around the world. Risk Identification, Risk Definition, Risk Analysis, Risk Assessment and Risk Treatment steps are followed while organizing the aforementioned risk list. The report resulting from these steps is classified in accordance with international reporting (TCFD, PRI, CDP, etc.). As a result of the meetings held, 40 risks are included in the ESG Risk Register List.

The breakdown by Risk Category is as follows:

- 26 Environmental
- 12 Social
- 2 Governance

Distribution by Risk Type is as follows:

- 25 Transition
- 15 Physical Risks

According to the subject matter there are;

- 22 Carbon-related Operations
- 13 Resource Utilization
- 5 Human Capital risks.

The register list is updated periodically.

In response to the pandemic, the frequency of reporting to Senior Management and Board of Directors was increased and weekly reporting was introduced. Senior Management and Board of Directors reports include the definitions of Critical and High risks, updates and actions of the related risks. With the pandemic, it became important to ensure awareness of risk management and resilience throughout the organization, and thus, it was decided to initiate Process Based Risk and Strategic Risk Management studies as risk management sub-processes. SOCAR Türkiye's risk profile includes risks of different nature. While some risks define one of the most important risk expressions of the organization and are managed at the corporate level, others are managed within business units and represent more focused threat elements. SOCAR Türkiye undertakes to implement an organizational philosophy that ensures that risk management is an integral part of corporate goals, plans and management systems. Through proper risk management, SOCAR Türkiye aims to realize its values, strategy and objectives, achieve sustainable competitive advantage, protect/enhance company value, comply with regulations and ethical standards, protect life and the environment, fulfill commitments to stakeholders, and integrate risk management with decision-making and performance management processes. The elements identified as risks are summarized under the following headings;

- Operational Risks
- OHS-E Risks
- Supply Chain Risks
- Regulatory and Compliance Risks
- Commercial Risks
- Information Technology Risks
- Climate-related Transition Risks

In 2021, within the framework of risk management activities, a period of reorganization was entered on a global scale within the scope of the pandemic process. The decline and losses that may be experienced in the workforce due to the pandemic and the factors that may threaten operational continuity have taken their place in 2021. In addition, risks that threaten international trade and

supply activities have also come to the fore due to the rise in global and regional geopolitical risks. On the other hand, global economic developments also have the potential to pose risks to company operations.

Although all possible controls and processes are systematically managed and necessary actions are taken, occupational health, safety and the environment are among the risk registers that should be carefully monitored without being ignored due to the nature of the company's fields of activity. The risk management process and management teams are supported by the realization of reporting, decision-making initiatives, monitoring and measurements related to all these risks. In 2021, a development program was implemented to increase risk management awareness throughout the company. In 2022, SOCAR Türkiye will focus on identifying climate change risks and determining their possible impacts and necessary actions. Based on the 2021 risk management, a specific risk management process was developed to respond in a timely and effective manner to climate change-related risks that may arise triggered by global trends and sectoral needs. With its ethical and honest approach, SOCAR Türkiye and group companies carry out all processes and activities in compliance with the laws and legal regulations in force. In this context, a Competition Law Policy was prepared. SOCAR Türkiye's Competition Law Policy aims to set out the principles for full compliance with competition law legal regulations and to protect healthy competition in the markets in which it operates with all its employees. The policy is designed to provide guidance on competition law and to convey the obligations that SOCAR Türkiye employees must comply with. In this context, awareness-raising activities were carried out, including providing training to SOCAR Türkiye employees.

Code of Business Ethics and Anti-Corruption

SOCAR Türkiye and its affiliated group companies uncompromisingly prioritize compliance with internationally recognized superior code of business ethics rules while conducting their activities.

These rules are regulated in the "SOCAR Türkiye Code of Ethics" and "Anti-Corruption and Trade Controls Policy" documents and published on the company's website to ensure easy access for those concerned. SOCAR Türkiye Code of Ethics and Anti-Corruption and Trade Controls Policy are binding for all managers and employees employed under the roof of SOCAR Türkiye, from the Board of Directors to the employees of subsidiaries, and for the business partners of SOCAR Türkiye and group companies. SOCAR Türkiye Ethics & Corporate Social Responsibility (CSR) Committee, which meets regularly under the chairmanship of the CEO of SOCAR Türkiye, was established in order to ensure that the activities carried out throughout SOCAR Türkiye and group companies are carried out in accordance with the code of ethics.

The internal procedure established for the efficient and systematic execution of the work of the Ethics & CSR Committee is dynamically updated according to changing needs. SOCAR Türkiye Ethics & CSR Committee also carries out governance activities to ensure that corporate social responsibility activities carried out throughout the company are performed out in accordance with the Code of Ethics and SOCAR Türkiye Values. In accordance with the CSR Principles Policy published for this purpose, the Communications Department prepares a CSR Plan for the following calendar year at the end of each calendar year and submits it to the Committee for approval. Compliance with the Code of Ethics and SOCAR Türkiye's internal policies and procedures is the responsibility of all employees and all third parties acting on behalf of SOCAR Türkiye.

Anyone who thinks or suspects that these rules are not being followed or who has questions about the rules should speak up. Those who wish to share in this context should notify the SOCAR Türkiye Ethics Hotline. Although notifications can be made anonymously if desired, SOCAR Türkiye will not tolerate any retaliation or discrimination against anyone who makes a notification in good faith, and those who attempt to do so will be subject to disciplinary action.

The same sanctions apply to those who deliberately make false or misleading notifications. The Ethics Hotline, which is designed to be open to anonymous reporting by SOCAR Türkiye employees and/or third parties via electronic mail, telephone, letter and complaint boxes in facilities, is used for reporting ethical violations and suspicions of bribery and corruption. Ethics Hotline notifications can only be viewed by the Compliance Group Coordinator and Audit, Risk and Compliance Group Director. With this structure, the management of the Ethics Hotline has been entrusted to a function reporting to the Board of Directors rather than to executive functions, thus providing the necessary independence.

The Ethics & CSR Committee and the Audit Board are informed at regular meetings about the number, types and resolution status of Ethics Hotline reports. During the reporting period, all notifications received by the Ethics Hotline were meticulously analyzed, and notifications regarding issues not covered by the Anti-Corruption and Trade Controls Policy were shared with the responsible departments and then followed up. No serious reports were made that would lead to an investigation on issues that fall within the scope of the Anti-Bribery and Anti-Corruption Policy.

SOCAR Türkiye supports the right to engage in democratic political activity granted to employees by the Constitution of the Republic of Türkiye, as with all other constitutional rights. However, SOCAR Türkiye cannot be a party to any political thought and ideology, political organizations, nor can it directly or indirectly support the activities and campaigns of political parties, organizations, politicians and candidates, nor can it allow the use of company resources for such activities. Therefore, while exercising their democratic political rights, SOCAR Türkiye employees must avoid, without exception, any behavior that may cause these activities to be associated with SOCAR Türkiye and group companies.

In line with the understanding of business ethics, the protection of human rights and prevention of violations are also taken seriously. The activities of SOCAR Türkiye and its group companies are carried out in compliance with the United Nations Universal Declaration of Human Rights and the main conventions of the International Labor Organization. Observance of norms to ensure that human rights are valued and respected in all operational decisions and processes is also expected from suppliers, customers and business partners. Within the framework of respect for human rights, employees' freedom of association, unionization and collective bargaining are respected, forced labor, abuse of labor power, child labor are prevented, and no form of discrimination is tolerated.

The Compliance Department provides Code of Ethics Orientation Trainings to new employees, annual KVKK (Personal Data Protection Law) & Compliance Trainings and trainings specially prepared for focus groups. Business ethics and corruption risks were included in the internal audits conducted during the reporting period and no incidents of non-compliance were encountered.

During the reporting period, there were no legal incidents targeting the Company or its employees in relation to these issues. On the other hand, no complaints were received regarding discrimination practices during the reporting period and no incidents were experienced. An internal program was established to achieve success in compliance, which occupies an important place in SOCAR Türkiye Code of Business Ethics.

A 2022 Compliance Plan was prepared and submitted to the Audit Board for approval. The plan approved by the Audit Board covers all compliance activities to be carried out in 2022. The Compliance Group Coordinatorship, which is located within the Audit, Risk and Compliance Group Directorate reporting to the Chairman of the Board of Directors, is responsible for coordinating compliance activities throughout the Company. During the reporting period, there were no significant incidents of legal non-compliance, particularly with respect to regulations regarding the provision of products and services. In 2021, activities such as 2021 inventory update studies, authorization controls, implementation of a new IT infrastructure to control data access, and preparation of the KVKK Compliance Plan for 2022 were carried out for compliance with the Personal Data Protection Law.

SOCAR Türkiye Code of Ethics

COMPLIANCE WITH LAWS AND RULES

For SOCAR Türkiye, the absolute way of doing business is to conduct business with integrity and accuracy while acting in compliance with relevant laws. At SOCAR Türkiye, we establish and implement all necessary policies, procedures and plans in order to comply with laws and rules and to carry out our activities in accordance with internationally generally accepted business ethics standards.

INTEGRITY AND HONESTY

At SOCAR Türkiye, we have a zero-tolerance policy against all forms of corruption, including bribery, money laundering and terrorist financing. In order to ensure that our business ethics standards are met by the commercial parties we do business with, we conduct ethical due diligence on these parties and check and ensure their compliance with our values set out in the Code of Ethics. Since gifts, meals or entertainment offered to public officials or other third parties pose corruption-related risks, we pay particular attention to this issue and, as a principle, we take care not to exchange gifts with public officials and other third parties. We do not misuse company resources. In this context, we manage the budget, expenditures and other funds correctly. We pay attention to security processes and operate the necessary control processes against situations that may lead to loss, theft or misuse of company resources. We never allow the use of company resources by unauthorized persons, including our relatives. In every situation where we act on behalf of SOCAR Türkiye, we observe the interests of our Company and prevent our individual interests from overriding the interests of our Company.

OUR RESPONSIBILITY TO OUR STAKEHOLDERS AND INVESTORS

In all our activities, we act in full awareness of our responsibilities towards our stakeholders and investors. Various rules and restrictions in the form of import and export control rules, economic sanctions regulations and embargoes are implemented by various governments, international organizations and financial institutions around the world to combat corruption. At SOCAR Türkiye, we have an effective financial control environment and system in order to ensure that our financial resources are correctly directed, allocated and utilized within the scope of the principles of honesty, adherence to ethical values and accountability. We always comply with all the rules determined to ensure the effective and correct operation of the said system. Information Security is of vital importance for the protection of our Company's resources. At SOCAR Türkiye, we use the most up-to-date technologies certified according to international standards in the field of information security, which enable us to design, operate, monitor, evaluate, maintain and improve information security, and we manage our processes with these systems. The protection of personal data and respect for the privacy of each individual's personal data are fundamental human rights under the Constitution of the Republic of Türkiye.

OUR RESPONSIBILITY TOWARDS THE ENVIRONMENT AND SOCIETY

As SOCAR Türkiye, while continuing our important activities that contribute to the Türkiye economy, we strive to make a difference at every point we exist, to add value to society, and to be beneficial to our environment and humanity. SOCAR Türkiye carries out its activities as stipulated in the Constitution of the Republic of Türkiye, the United Nations Universal Declaration of Human Rights and the main conventions of the International Labor Organization. In order to achieve excellence in Occupational Health, Safety and Environment (OHS-E), we adopt SOCAR Türkiye's OHS-E vision to create a culture that adopts the best OHS-E practices worldwide and industry-specific. We place occupational health, safety and environmental sensitivity at the center of our business strategy and aim to ensure that our operations are always safe and efficient in every area in which we operate. The Constitution of the Republic of Türkiye allows all individuals to participate in democratic political activities. As SOCAR Türkiye employees, while exercising this right, we strictly refrain from making any reference to SOCAR Türkiye.

Internal Audit and Compliance

Internal audit activities add value to the operations of the Company and its group companies by providing independent, objective assurance and consultancy. The Internal Audit Department reports directly to the Audit Committee, which reports to the Board of Directors.

In line with the annual audit plan approved by the Board of Directors, the Internal Audit Department is responsible for planning, performing and reporting internal audits within the Group in accordance with the generally accepted International Internal Audit Standards published by the International Institute of Internal Auditors (IIA) and relevant local legislation. In addition, the Internal Audit Department is also responsible for ensuring that the senior management takes the necessary measures to eliminate the problems that arise, monitoring the actions taken, coordinating and harmonizing the audit activities.

In 2021, the following activities were carried out within the scope of Internal Audit Activities:

Approximately 28 audits were planned within the scope of the audit plan for 2021, and audit activities were carried out in line with the relevant plan under pandemic conditions during the year. In addition to these, consultancy activities were carried out in line with the requests of senior management.

During the S4 Hana system transition, the internal audit team monitored process designs, observed that standard SAP controls were not deviated from, made recommendations on controls that could be automated, checked data verifications during the transition, and reviewed authorization conflicts.

In 2021, in an environment where control designs were developed on SAP, we examined the movements of users between system controls in detail, generated scenarios, and analyzed big data and brought noteworthy transactions to the attention of managers.



Sustainability Approach

SOCAR Türkiye has an ambitious vision that takes into account all critical sustainability opportunities to integrate the best and scalable sustainability strategy across the entire value chain, to become a pioneer across SOCAR Global and other oil and gas companies by mitigating risks and seizing business opportunities.

In today's global world, sustainability has gained great importance in corporate strategy. It is crucial to act responsibly and build strong partnerships for a sustainable world. It is inevitable for SOCAR Türkiye to address the growing concerns about climate change. Aware of its responsibilities to achieve the United Nations' 17 Sustainable Development Goals, SOCAR Türkiye monitors the social, environmental and economic impacts of all its activities and adopts an effective communication approach based on the principle of transparency with all its stakeholders.

SOCAR Türkiye has an ambitious vision that takes into account all critical sustainability opportunities in order to integrate the best and scalable sustainability strategy into the entire value chain, to become a pioneer across SOCAR Global and other oil and gas companies by mitigating risks and seizing business opportunities.

SOCAR Türkiye develops sustainability strategies to prevent climate change risks arising from greenhouse gas emissions, to adapt its business model to the energy transition and to maintain its leading position in the sector by seizing the opportunities brought by this transition, and sets its emission reduction and climate change targets in line with these strategies. SOCAR Türkiye Sustainability Committee monitors the Group's strategies, implementation, realization and declaration regarding climate change.

SOCAR Türkiye periodically conducts ESG assessment studies with neutral auditing firms in order to understand the Environmental, Social and Corporate Governance (ESG) risks it is exposed to in the geography where it operates, to measure how these risks will be managed and to identify risk management gaps. Continuous improvement activities are carried out with the outputs obtained as a result of the ESG assessment. The progress and realization of these studies and global developments are monitored by the Sustainability Committee.

The areas covered by the Sustainability Committee, which reports to the Executive Committee of SOCAR Türkiye and is chaired by the CEO of SOCAR Türkiye and co-chaired by the Head of Strategy and the Head of Communications and Public Relations, who report directly to the CEO of SOCAR Türkiye, are also monitored and managed by the Corporate Governance and Sustainability Committee, which reports to the Board of Directors of SOCAR Türkiye.

SOCAR Türkiye Sustainability Strategy

SOCAR Türkiye's Sustainability Strategy is built on 3 Components and 1 Supporting Mechanism.

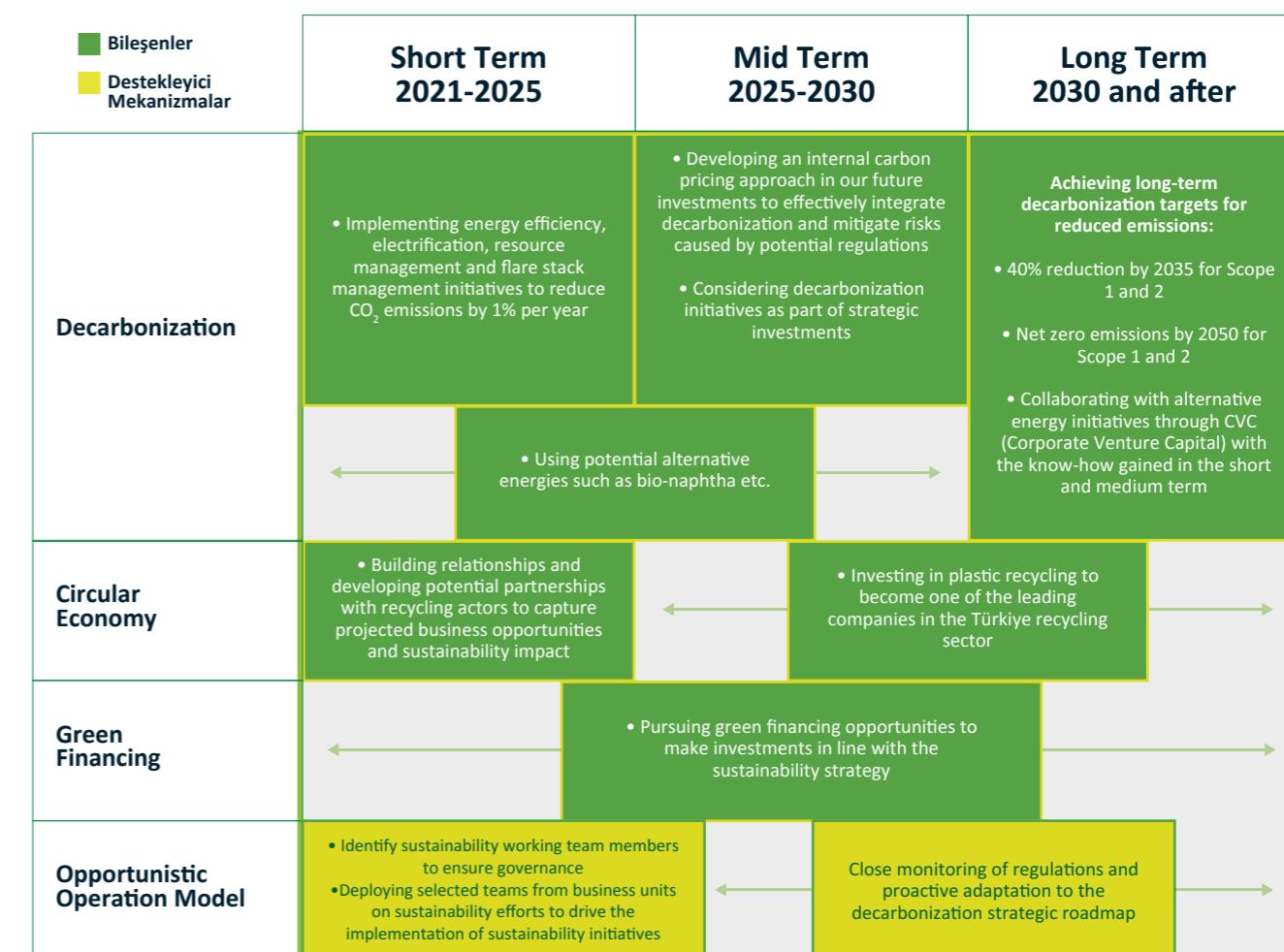
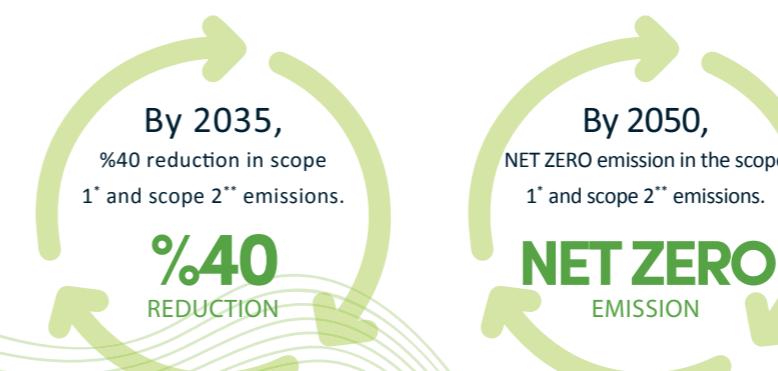


Figure 2: SOCAR Türkiye Sustainability Strategy

SOCAR Türkiye has set its sustainability journey as 40% CO₂ reduction by 2035 and NET ZERO emissions by 2050.

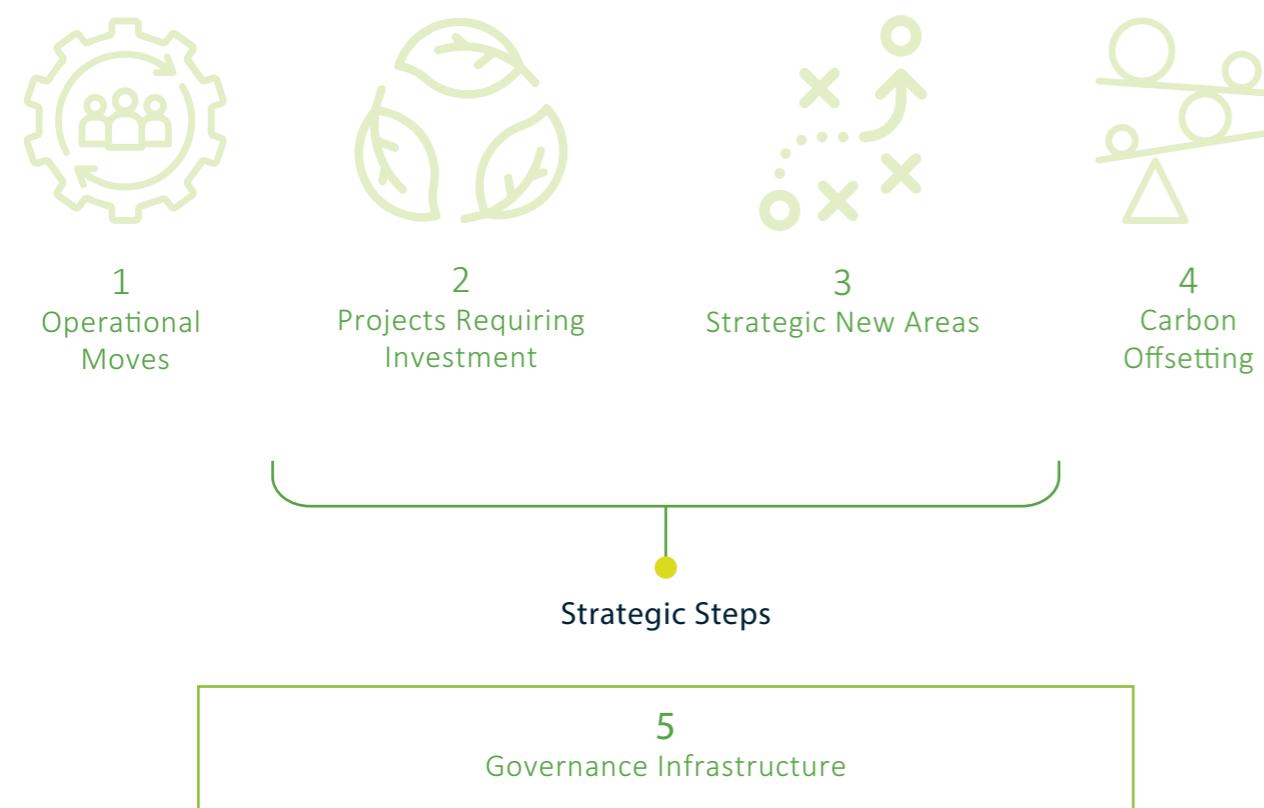
Accordingly, SOCAR Türkiye has set its long-term sustainability goals as follows.



*Scope 1:
**Scope 2:

Direct emissions (e.g. manufacturing processes)
Indirect emissions (eg electricity and heat intake)

SOCAR Türkiye Decarbonization Strategy



- 1 Operational Moves**
Achieving 1% annual emission reduction target by 2025 through energy efficiency, flare combustion management, insulation works in refinery and petrochemical operations.
- 2 Projects Requiring Investment**
Reducing emissions from refinery and petrochemical operations through new investments.
- 3 Strategic New Areas**
Developing new business lines in parallel with energy transformation developments.
- 4 Carbon Offsetting**
Offset emissions through certified carbon offsetting initiatives.
- 5 Corporate Governance Infrastructure**
Establishing the competencies required to realize the transformation, monitoring organizational changes and reporting structures.

Decarbonization Approach

- Monitoring upcoming legal regulations
- Analysis of stakeholder expectations
- Assessing green financing opportunities arising from decarbonization developments
- Monitoring technology opportunities related to decarbonization

Key Principles in Decarbonization

Short Term

Initiating governance infrastructure with a focus on projects with positive net value today.

- Focusing on energy efficiency initiatives
- Adopt a pilot testing methodology for projects that are most suitable in terms of economic and sustainability impact
- Considering the carbon emission assessment perspective for new investments
- Exploring potential decarbonization and carbon offset opportunities

Long Term

Scaling the decarbonization program in line with SOCAR Türkiye's needs.

- Building the foundations for scaling up decarbonization in a strategically transformative and inclusive way
- Close monitoring of partnerships, prioritizing initiatives related to new investment areas and feasibilities that assess carbon price impacts
- Close monitoring of regulations and setting a roadmap for proactive adaptation to strategic decarbonization

SOCAR Türkiye's Decarbonization Strategy Statement

Preparing for upcoming legal regulations and meeting stakeholder expectations while seizing opportunities arising from decarbonization trends constitute the foundations of SOCAR Türkiye's decarbonization strategy;

- In the short term, while focusing on energy efficiency initiatives, pilot implementation options for new technologies will be evaluated and the emission dimension will be taken into consideration in new investment decisions.
- In the long term, the focus will be on scaling up the decarbonization strategy in line with recent developments in legal regulations. Key topics will be closely monitoring and evaluating potential investments in strategic new areas, establishing partnerships for decarbonization investments, as well as implementing carbon offset projects.

Sustainability Corporate Governance Structure

SOCAR Türkiye continues its efforts to improve sustainability management, which is a part of its business culture. In the activities carried out in the light of corporate policies, there is a sharing of responsibility starting from the senior management.

Reporting directly to the CEO of SOCAR Türkiye, the Head of Communications and Public Relations is the highest level executive responsible for the management of sustainability and corporate social responsibility issues. The activities carried out on identified social, economic, governance and environmental issues are monitored by the Presidents responsible for the relevant subject.

The activities carried out by SOCAR Türkiye in the field of sustainability and corporate social responsibility, sustainability performance measurement, monitoring and reporting are carried out by the Corporate Social Responsibility and Sustainability Unit under the umbrella of the Communications and Public Relations Department.

SOCAR Türkiye has established various corporate policies for the management of social, economic and environmental issues. The most comprehensive of these policies, which are also published on the corporate website, are the SOCAR Türkiye Code of Ethics, Anti-Corruption and Trade Sanctions Policy and the SOCAR Türkiye Occupational Health, Safety and Environment Policy. These policies, which are in effect in all SOCAR Türkiye business units, are strictly observed in any activity carried out. On the other hand, SOCAR Türkiye group companies use internationally recognized management system standards in the management of sustainability issues in their lines of business. The "SOCAR Aims for Efficiency" (SAFE) OHS-E Management System, implemented by the SOCAR Türkiye Corporate Headquarters in a stakeholder manner covering all group companies, provides significant added value by creating a healthy, safe and environmentally sensitive working environment in every area from offices to high-hazard activity sites.

As an extension of SOCAR Global's management approach, sustainability has become an integral part of SOCAR Türkiye's management approach along with its mission to "operate and develop the entire value chain from the source to the end user in an efficient and sustainable manner with experienced, knowledgeable and committed human resources at all levels". Attaching importance to the management of social, economic and environmental impacts as part of its business strategy, SOCAR Türkiye continues its efforts to support sustainable development, particularly in the geographies where it operates.



Stakeholder Dialogue

Today, one of the most important indicators of the management quality of companies is their ability to demonstrate a participatory management approach. With this perspective, SOCAR Türkiye aims to establish a permanent communication with all its internal and external stakeholders based on mutual trust, transparency and accountability. The channels used for this purpose vary according to the stakeholder group.

SOCAR Türkiye and its group companies attach special importance to establishing communication channels that will facilitate employees' participation in management and increase mutual information sharing. In this context, SOCAR Türkiye employees are contacted through many communication channels on a continuous, periodic or instant basis depending on their nature. The channels used according to communication needs may also vary according to the subsidiary. Among these communication channels, the most widely used are the integrated corporate intranet, internal surveys, e-mails and e-bulletins, corporate TV, posters and banners, reputation and satisfaction surveys, training practices, performance management system, interviews and debates, working groups and committees, and complaint and suggestion systems. Many communication channels, especially the complaint and suggestion systems, are also accessible to the employees of contractor companies working in the fields of activity.

SOCAR Türkiye and its group companies use various channels to create a participatory, timely, transparent and two-way communication environment with their external stakeholders as well as their employees. Stakeholder communication systematics are also shaped in many of the management systems followed. While it is essential to strengthen communication with all stakeholders, customers, shareholders and investors, public institutions and local governments, trade unions, suppliers and contractors, professional associations and non-governmental organizations, financial institutions, educational institutions, media organizations and local communities are among the stakeholders with whom communication is frequently established. In communication with stakeholders, tools such as the corporate website, communication forms, social media, e-mail communications, annual reports, sustainability reports, press releases and meetings, announcements, mutual meetings, social projects and sponsorships, external trainings, meetings and presentations, corporate films, research and surveys are used systematically.

The reputation survey conducted centrally by SOCAR Türkiye is a fundamental tool used to measure and evaluate the level of satisfaction of stakeholders such as customers, local and national media, professional organizations, non-governmental organizations, financial institutions and public institutions with their relations with SOCAR Türkiye. Ethical whistleblowing channels, suggestion and complaint systems are also accessible to employees as well as contractors, suppliers and the local community. Complaints and suggestions submitted through these channels are carefully handled and finalized. In order to ensure the systematic management of these channels, Petkim has included the ISO 10002 Customer Satisfaction Management System Standard within the scope of its integrated management system.

ORGANIZATION STAKEHOLDER PRIORITIZATION

LEAST Affected/Impacted Stakeholders

- Sector Organizations and Associations
GAZBİR, NATO, KALDER, TÜRKLİM, PETDER, YASED, TKSD-Türkiye Chemical Manufacturers Association
- Insurance Companies

MEDIUM Affected/Impacted Stakeholders

- | | |
|---------------|-----------------------------------|
| ● Society | ● TUBITAK, Horizon 2020 |
| ● Consultants | ● Universities |
| ● Competitors | ● Traditional and Social Media |
| ● NGOs | ● Business Partners Consortia and |
| ● Contractors | Single Agents |

MOST Affected/Impacted Stakeholders

- Regulatory Authorities
EMRA, Ministry of Energy and Natural Resources, Ministry of Industry and Trade, API, CMB, BOTAS..
- Funding Institutions
- Trade Union
- International Regulatory Organizations
ECHA-European Chemical Agency, UKHSE- UK Health & Safety Executive
- Customers
- Policy Makers
Republic of Türkiye, European Countries, Azerbaijan
- Municipalities and Local Authorities
- Local Community
- Value Chain
- Employees
- Investors
- Shareholders
- Suppliers

SOCAR Türkiye

Sustainability Priorities

The focal points of SOCAR Türkiye's sustainability management are shaped in line with the social, economic and environmental impacts arising from its activities and stakeholder expectations.

In order to identify these focal points, SOCAR Türkiye conducts a comprehensive materiality analysis process shaped by various studies and analysis of stakeholder opinions. This process, which is shaped by the materiality principles set out in the GRI Standards, a guide in sustainability management methodology published by the Global Reporting Initiative (GRI) for use in non-financial reporting studies, was repeated in our reporting period and took its most up-to-date form.

In the materiality study carried out during the reporting period, firstly, GRI Standards, Sustainability Accounting Standards Board (SASB) Sector Priorities, Global Mega Risk Trends Survey results, international reporting practices and reader evaluation research, competitor practices and sectoral resources were evaluated and a subject universe consisting of nearly 40 social, economic and environmental impact areas that are likely to be included in the sustainability impact portfolio of SOCAR Türkiye and its group companies was formed.

The screening studies conducted with the participation of more than 300 employees and 25 senior executives working in SOCAR Türkiye and its group companies were tested with risk and opportunity analyses. The United Nations Sustainable Development Goals were also evaluated within the scope of the study.

In parallel, the same subject universe was evaluated in terms of stakeholder expectations with the studies in which more than 250 participants representing many different stakeholder groups, particularly financial institutions, customers, suppliers and business partners, media and non-governmental organizations, and universities expressed their views.

After the results of the internal studies and stakeholder analyses were consolidated by sustainability experts, they were presented to the evaluation of SOCAR Türkiye executives and SOCAR Türkiye Sustainability Priorities were determined. In this context, a total of 11 sustainability-related issues were identified.

The importance of material issues for the success of the organization according to stakeholders



Table 3: Importance Levels of Material Issues for the Success of the Institution by Stakeholders

Contribution to the United Nations Global Compact Sustainable Development Goals

The Sustainable Development Goals (SDGs) are a set of 17 Goals drafted by the United Nations that call for urgent action by all developed and developing countries globally.

The SDGs include strategies in environmental, social and economic areas such as ending poverty, protecting oceans and forests, combating climate change, reducing inequality and promoting economic growth.

Governments are not the only ones responsible for meeting the contents of the SDGs, prioritizing and implementing the goals. These goals must also be understood and implemented as a collective focus for action by all companies, civil society organizations and all humanity. While SOCAR Türkiye supports all SDGs, it has identified 8 priority SDGs based on dialogues with its stakeholders and global standards set by national and international industry associations.

These are Industry, Innovation and Infrastructure (Goal 9), Partnerships for the Goals (Goal 17), Responsible Consumption and Production (Goal 12), Decent Work and Economic Growth (Goal 8), Climate Action (Goal 13), Clean Water and Sanitation (Goal 6), Affordable and Clean Energy (Goal 7), and Gender Equality (Goal 5).

SOCAR Türkiye priorities within the scope of sustainable development goals



SOCAR Türkiye External Stakeholder SDG Analysis

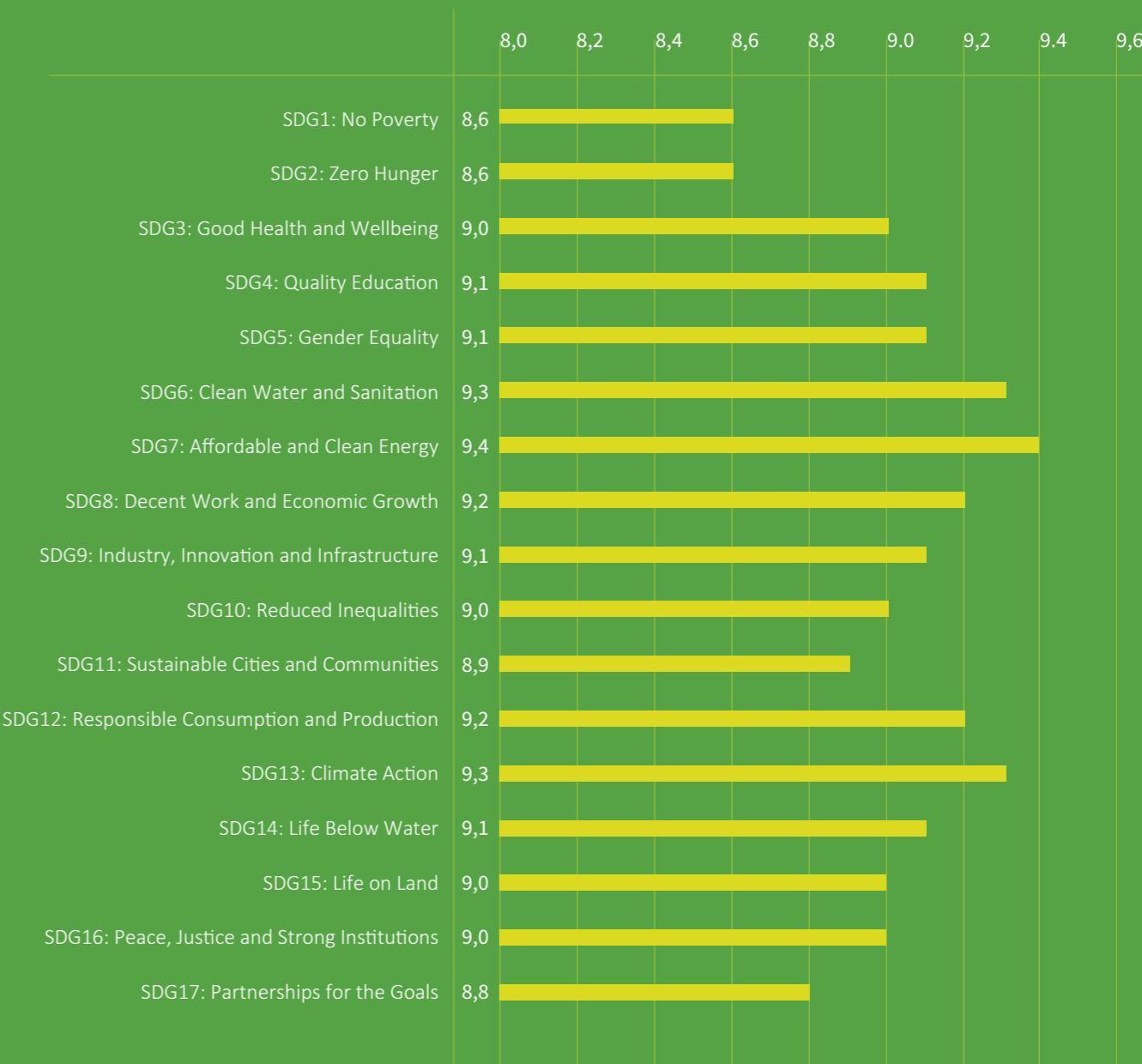


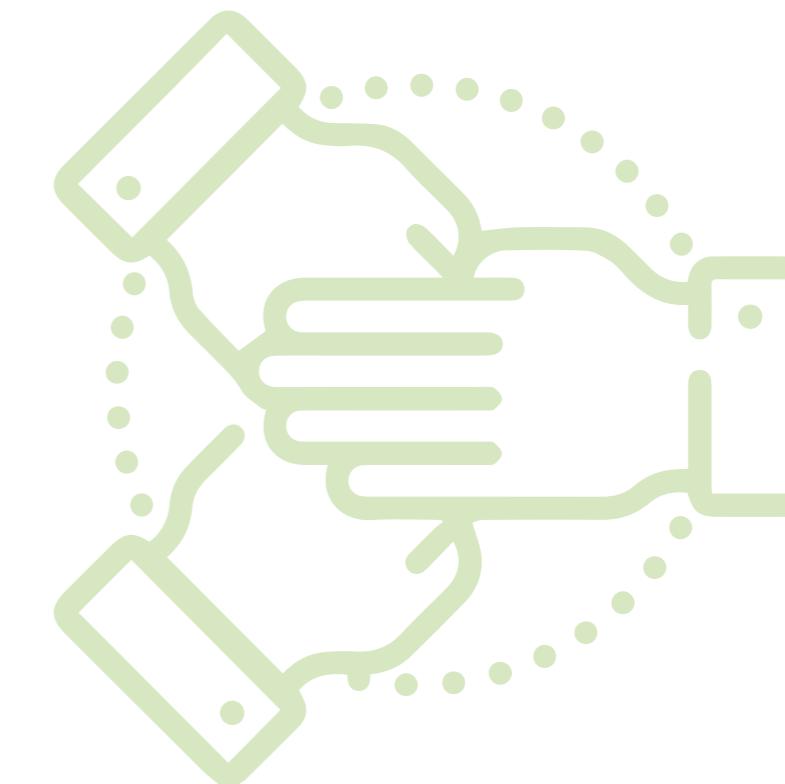
Chart 1: SOCAR Turkiye External Stakeholder SDG Analysis

SOCAR Türkiye Corporate Memberships

ALTO	• Aliaga Chamber of Commerce
ASD	• Packaging Industrialists Association
DEİK	• Foreign Economic Relations Board
EBSO	• Aegean Region Chamber of Industry
EPCA	• European Petrochemical Association
EGE PLASDER	• Aegean Plastic Industrialists Solidarity Association
ESAİD	• Aegean Industrialists and Businessmen Association
ICC TÜRKİYE	• International Chamber of Commerce
İKMB	• Istanbul Chemicals and Products Exporters' Association
İTO	• Istanbul Chamber of Commerce
İMEAK	• Chamber of Shipping
İMMİB	• Istanbul Mining and Metals Exporters' Associations
İZKA	• Izmir Development Agency
İYTE	• Izmir Institute of Technology Foundation
KALDER	• Türkiye Quality Association
KİD	• Corporate Communications Association
KİPLAS	• Türkiye Chemical, Petroleum, Rubber and Plastic Industry Employers' Union
KÜV	• Kocaeli University Foundation
PERYON	• Human Management Association of Türkiye
TEİD	• Ethics and Reputation Association
TÜSİAD	• Türk Industrialists and Businessmen Association
TKSD	• Türkiye Chemical Manufacturers Association
TÜYİD	• Türkiye Investor Relations Association
TİDE	• Türkiye Institute of Internal Auditing
TİM	• Exporters Assembly
TOBB	• Türkiye Union of Chambers and Commodity Exchanges
TURKLAR	• Association of Calibration and Experimental Laboratories
TÜREB	• Türkiye Wind Energy Association
TTGV	• Türkiye Technology Development Foundation
YASED	• International Investors Association
WEC Türkiye	• World Energy Council Türkiye National Committee
	• Aegean Ferrous and Non-Leather Metals Exporters' Association
	• Rubber Association

New Memberships

SKD TÜRKİYE	• Business World and Sustainability Development Association
BMKİS	• United Nations Global Compact (UNG)
UN WEPs	• United Nations Women's Empowerment Principles
DEP	• Türkiye Circular Economy Platform
TÜRKLİM	• Port Operators Association of Turkey
TEDAR	• Türkiye Supply Chain Management
TÜRKOTED	• Türkiye Cogeneration and Clean Energy Technologies Association
KİYED	• Public Communications and Corporate Relations Management Association
PETDER	• Petroleum Industry Association
KRYD	• Corporate Risk Management Association
	• Risk Management Association
	• Chamber of Shipping





Continuity and Future-Oriented Business Strategy

One of SOCAR Türkiye's main sustainability focuses is the creation of a strategy that is resilient to future risks in the entire value chain and ensures business success with a model where continuity is assured.

One of SOCAR Türkiye's sustainability focuses is to secure not only the present but also the future of the company's existence; to manage social, economic and environmental impacts not only in the internal operations section but also in the entire value chain; to achieve excellence in business processes; and to identify with the identity of being a company that develops its technology and continuously feeds its target markets with value-added products produced with the most advanced technologies.

R&D and Innovation

SOCAR Türkiye has a deep-rooted R&D culture inherited from the experience of SOCAR Global and the R&D Center established in 1969 at Petkim Yarımca facilities. SOCAR Türkiye R&D Center was established in December 2019 to transfer Petkim's 51 years of R&D experience in petrochemicals to the entire SOCAR Türkiye value chain. As of June 12, 2020, SOCAR Türkiye Ar-Ge ve İnovasyon A.Ş. was entitled to receive the R&D Center certificate issued by the Republic of Türkiye Ministry of Industry and Technology. Located on a 1,200 m² area on the Refinery and Petrochemical Business Unit campus in Aliağa, Izmir, SOCAR Türkiye R&D and Innovation Center serves with 22 researchers, 6 laboratories, pilot facilities and offices. The goal of the SOCAR R&D Center, which serves all group companies of SOCAR Türkiye, is to develop innovative, sustainable, environmentally friendly and market-oriented products, catalysts and digital technologies for all stakeholders in the value chain and to improve existing production processes. The activities planned to be carried out in this direction include catalyst research, green chemistry, sustainable, clean and efficient energy, value-added products, digital applications and environmental solutions.

The R&D Center, which started its activities within the framework of the order-based R&D model with the Refinery and Petrochemicals Business Unit in 2020, carried out 17 order-based R&D projects with Petkim and 4 order-based R&D projects with STAR Refinery during 2020-2021. The projects implemented focused on energy efficiency in production processes, operational excellence, digitalization, new products and the environment. SOCAR Türkiye R&D and Innovation Center works to create strong university-industry collaborations with the open innovation model it has adopted. The studies carried out within this scope focus on technologies that will increase efficiency and develop cost and competitive advantages for all SOCAR Türkiye group companies as well as the energy sector. Due to their energy-oriented and therefore emission-intensive business lines, special attention is paid to technologies that will reduce the carbon footprint of SOCAR Türkiye companies. To this end, projects are being planned and collaborations are being developed on the production of petrochemical raw materials by utilizing renewable energy in the international arena.

SOCAR Türkiye R&D and Innovation Center aims to take part in R&D and innovation projects within the scope of Horizon 2020 European Green Deal Call, which aims to transition to a carbon-free economy by 2050, in line with the sustainability goals of all group companies operating in the energy, refinery and petrochemical chain. SOCAR Türkiye R&D and Innovation Center is conducting two European Union projects under the Horizon 2020-Carbon Capturing, Stocking and Use (CCSU) Program. The first of these projects, the CARMOF Project, aims to develop innovative absorbers based on Modified Carbon Nanotubes and Metal-Organic Frameworks (MOF), and to develop a hybrid membrane and vacuum absorption process in which these absorbers are included in order to capture carbon dioxide more efficiently.

The CO₂ Fokus Project aims to convert carbon dioxide into dimethyl ether, which is in demand in the market, with the reactor and solid oxide cell technology to be printed with a 3D printer. As a carbon emission-intensive sector, the CARMOF Project aims to capture the carbon dioxide contained in the combustion gases in SOCAR Türkiye facilities using innovative materials and methods. The CO₂ Fokus Project aims to capture carbon dioxide gas in vent gas and convert it into dimethyl ether with innovative catalysts. Thanks to this technology to be developed, it will be possible to transform carbon dioxide, which would otherwise turn into emissions, into chemical products with high added value.

In addition, the NEFERTITI Project, for which SOCAR Türkiye's R&D and Innovation Center applied to the European Union Horizon 2020 Program, was awarded funding as of December 2020. The NEFERTITI Project aims to produce chemicals such as ethanol and isopropanol from carbon dioxide with heterogeneous catalysts by utilizing solar energy.

This project, which aims to convert carbon dioxide and water into chemical substances, significantly enhances SOCAR's R&D experience in diversifying the use of renewable energy sources; projects are developed and implemented by increasing production efficiency and reducing carbon emissions by creating an innovative catalyst cocktail with the development of catalyst cocktail in the LDPE plant, obtaining petrochemical input raw materials through chemical recycling of waste plastics with chemical recycling of waste plastics with process and catalyst development, saving energy and reducing production loss in plastics processing processes with the PPA MB product with the development of Polymer Processing Aid Masterbatch (PPAMB), and with the development of Environmental Bio-technology Products, projects aimed at zero carbon practices and clean energy use by effectively treating wastewater in Petkim and STAR waste treatment units. The Circular Twain Project is the first digital project developed by SOCAR Türkiye R&D to be funded by UFUK AVRUPA. The project, which aims to maximize sustainability and energy efficiency through artificial intelligence and digital solutions, became the fourth project of SOCAR Türkiye R&D and Innovation Co. to be funded by the EU. The LOUISE project, which aims to prepare for the pre-commercial demonstration of an innovative process for the conversion of solid waste-derived fuels, namely Chemical Looping Combustion (CLC), by providing a concentrated CO₂ stream ready for transportation and storage or use, was funded by the UFUK 2020 grant program. Finally, 6 projects are being carried out within the scope of R&D and Innovation within BURSAGAZ in 2021. Among these projects, the Remote Gas Cut-Off Project and the Composite Project have been completed, while the other Smart Internal Installation Project, the Double Sided Service Tee Project, the Project for Investigating the Production of Equipment to be Used in Natural Gas Distribution with 3D Printing Technologies and the Valve Manhole Inspection System Project are still ongoing.

With the Remote Gas Cut-Off Project, it is aimed to replace the meters that cannot be cut off due to physical obstacles in Bursa province with meters suitable for remote gas cut-off and to reduce the health and safety risks of the personnel. At BURSAGAZ, gas cutting cannot be performed in cases such as customer resistance, dog presence/attack, etc. The module and system installed on certain meters were integrated into the existing Polaris Remote Meter Reading system and the project was successfully completed.

Within the scope of the Composite Project, it is aimed to conduct research for the development of polymer-based composite material that can be used instead of steel pipes in Medium Pressure Network (19 bar). If this type of material is developed, it is expected to produce benefits in terms of shortening the procurement time of pipe manufacturing, making manufacturing easier and more reliable in the field, preventing design constraints and corrosion damage in steel pipes. In the project, which progressed in stages; literature research was conducted for the development of high pressure resistant composite material and material technology was examined. In order to obtain the most suitable mixture, material dough trials were carried out in the laboratory environment and mechanical and physical tests were applied. The most suitable wall thickness and inner diameter design for the pipe type was studied. Sample production and tests were carried out with the material mixtures expected to give the best results in the laboratory environment. With the outputs obtained as a result of this research project, a significant gain in terms of knowledge has been achieved.

Within the scope of the Smart Internal Installation Project, it is aimed to remotely or automatically cut off the gas supply, monitor the facility, and ensure safe and continuous gas supply in emergency situations (disaster, earthquake, gas leaks, fire, etc.) at gas delivery stations by using the SCADA system in critical public facilities. In this direction, project activities will be carried out for a single address point.

It is aimed to be able to cut off gas distribution autonomously or remotely by using gas, smoke flame sensor data to be installed at the regional station. Equipment and devices will be powered by internal or external power supply and will use low energy consuming communication protocol among themselves. This will ensure optimum power consumption. The data received from the measuring devices will be interpreted on the central processor and the output devices will be controlled in case the limit values are reached. Communication infrastructure will be included so that the status data of the system can be transferred to the SCADA Center of the distribution company via GSM or ADSL. With the Double Sided Service Tee Project, it is aimed to reduce the number of connection elements in PE networks and the risk of natural gas leakage, reduce labor and material costs and work with domestic producers by using Double Sided Service Tee in new investment areas.

The project will consist of three main stages; in the first stage, "Flow analysis, Mechanical strength analysis, Mechanism operation analysis, Mold designs, Mold filling analysis" will be performed to PE Q 40 and PE Q 63 for service Tees with Q 20 - Q 32 outlets. In the second stage, "Prototype molds and trial production" will be made for PE Q 40 and PE Q 63.

In the third stage, Prototype function tests, Prototype life tests, Revisions and corrections as a result of verification, Final prototype, life and function tests will be performed. In the Project to Investigate the Production of Equipment to be Used in Natural Gas Distribution with 3D Printing Technologies; it is aimed to contribute to the natural gas distribution companies to procure the parts used in the network maintenance and installation process in a cheaper, faster and more flexible way, to make a detailed analysis of the 3D printing option and to offer it to the service of these companies with the software to be developed.

In this context; it is planned to determine the 3D printability of the parts in the inventory of distribution companies, to determine the procurement costs of these parts that can be produced as a result of the research to be carried out on 3D printing technologies, to determine the procurement costs of these parts that can be produced as a result of the research on 3D printing technologies, to turn the data obtained as a result of the research into a product with cloud-based parts procurement recommendation and information system software using multi-criteria decision-making models and to offer it to the service of distribution companies. The Valve Manhole Inspection System Project is of great importance for public safety and public service to inspect and identify damaged, defective or leaking natural gas valve manholes.

Therefore, it is aimed to automate the process to detect any malfunctions and defects in advance, while reducing operational costs and OHS-E risks. With this project, it is aimed to detect damage such as closure, cracks, etc. that may occur in natural gas valve manholes, which are both costly and high-risk, with cameras and sensors with image processing software integrated into gas leakage control vehicles, faster, safer and at low cost. The project of Development of Catalyst for DME Synthesis from Carbon Dioxide, carried out with Izmir Institute of Technology (IYTE) within the scope of University-Industry cooperation, aims to develop a catalyst and process to convert carbon dioxide, which is emitted into the atmosphere in Petkim's production factories, into dimethyl ether (DME), a valuable product.

Within the scope of the project, catalyst development and performance testing of these catalysts are continuing in the SOCAR Türkiye R&D laboratory. As a result, catalyst formulations with high performance indicators have been identified and the installation of the infrastructure for high pressure tests of catalysts has started. In addition, negotiations have been initiated with international companies for the commercialization of these catalysts with high performance indicators. The project, initiated in cooperation with SOCAR Türkiye R&D and Innovation Center and METU, aims to develop a more efficient catalyst and process with high selectivity for the synthesis of raw materials suitable for petrochemical inputs in the chemical recycling of plastic waste.

SOCAR Türkiye R&D and Innovation Center has 3 international and 2 national publications. International and national publications are listed below respectively:

- High expression of ring hydroxylating dioxygenase genes ensure efficient degradation of p toluate, phthalate, and terephthalate by Comamonas testosteroni strain
- Data-driven Modeling of an Industrial Ethylene Oxide Plant: Superstructure-based Optimal Design for Artificial Neural Networks, ESCAPE 31, İstanbul, Türkiye
- Data-driven Modeling of an Industrial Ethylene Oxide Plant: Superstructure-based Optimal Design for Artificial Neural Networks, Computers Aided Chemical Engineering
- Superstructure Optimization of Dimethyl Ether Process, ESCAPE 32, Toulouse, France
- Optimal artificial neural network architecture design for modeling an industrial ethylene oxide plant_ Computers & Chemical Engineering Journal

This project, which aims to transform waste polyolefins into high value-added products under milder conditions accompanied by a catalyst, is important in terms of reducing the negative effects of plastic pollution and developing a circular, sustainable economy. In 2021, SOCAR Türkiye R&D and Innovation Center carried out a total of 40 projects in the fields of energy transition, circular economy, environmental solutions, products and applications, and operational efficiency, which it identified as its main areas of work, and applied for a total of 16 EU projects. In 2021, the LOUISE project, whose main topic is CO₂ capture technologies, and the Circular TWAIN project, whose main topic is digitalization, were awarded EU funding.

Also in 2021, the LOUISE project, whose main topic is CO₂ capture technologies, and the Circular TWAIN project, whose main topic is digitalization, have been awarded EU funding.

In 2021, SOCAR Türkiye R&D and Innovation Center determined its main working areas as; energy transition, circular economy, environmental solution, product and its applications and conducted a total of 40 projects in the field of operational efficiency and applied to a total of 16 EU projects.



Information Technologies

Launched in 2019 with the vision of Digital Transformation, the Information Technologies (IT) Integration Project "Project Earth" aims to support SOCAR Türkiye's integrated working model, manage changes in global and domestic markets, and realize information technology infrastructure improvements that will enable functions to produce maximum efficiency.

SOCAR Türkiye shapes its future strategy in line with the SOCAR 2035 vision created for all group companies at the global level. Digitalization has always been one of the cornerstones of the strategic priorities of both SOCAR and SOCAR Türkiye. Looking at the strategic priorities, it can be clearly stated that digitalization is not only a fundamental change that increases efficiency in all business processes, but also acts as a lever for other strategic building blocks such as Energy Security, Efficiency and Optimization, Sustainability and Energy Transformation, and Business. In light of this strategic approach, the IT transformation, which gained momentum especially as of 2018, is managed with a short, medium and long-term transformation roadmap. Modernization of SOCAR Türkiye's corporate applications is carried out by restructuring the infrastructure architecture and updating the application catalog to meet the needs of all business units. In this context, completing the integration and transformation of SAP applications, switching to the S/4HANA version and implementing very specific process improvements were at the center of the transformation journey.

As part of the integration program roadmap, business process integration, organization integration and IT infrastructure integration were completed by the 4th quarter of 2019. Following this, the strategic focus was on IT application integration and data integration. Project Earth Phase 1 was launched to enable the integration vision, maximize the benefits of the new way of working and replace interim solutions with final solutions while supporting business efficiency and productivity.

Project Earth is more than an IT Project, it is a business transformation project that will form the new backbone of SOCAR Türkiye. Within the scope of Project Earth, significant changes were made in the IT structure. All servers were virtualized and physical server resources started to be managed efficiently, operational efficiency was strengthened, resource management was made easier, server security was increased within the scope of network virtualization, and systems were started to be monitored by being included in the central management and monitoring structure.

Project Earth by the numbers

Design Phase

- 92 business scenario documents
- More than 250 workshops
- Over 1,700 hours of design workshops
- Closing 417 open positions
- Contribution of more than 170 SOCAR employees
- Contribution of more than 100 SAP consultants

Pre-UAT (User Acceptance Testing) phase completed

- SAP and IT team tested all processes before the UAT phase

UAT1 phase completed

- UAT 1-stage 6,845 test scenarios targeted
- 93% of them passed with approval

UAT2 & Regression test phase

- UAT2 targets for testing 7,709 test steps
- Regression targets to test the 638 test step

Stages of transition to the system

- Completed 1,050 steps of transition to the system
- 55 training sessions lasting more than 3 weeks for all end users

Project Earth in its first week of deployment:

- The systems were used by 936 users within the first week.
- With the establishment of a common master data structure, more than 460 Material, Customer and Supplier master data were created in the application where all processes will speak the same language.
- More than 16,000 operations were planned in the field with solutions that enable Maintenance and Repair teams to plan simultaneously.
- Through the mobile application where maintenance activities will be processed instantly, 205 hours of operation information was entered into the system.
- Thanks to the E-Solutions approach gathered under a single roof, more than 2,200 bank transactions were processed through E-Account Summary.
- In the first week, 670 invoices were sent through the system, while the number of incoming invoices exceeded 870.
- With Centralized Customer Credit Risk Management, 1,665 orders/deliveries were realized.
- With the user-friendly central purchasing platform integrated with end systems, 1,306 SAT, 941 SAS and 36 purchasing contracts were created.
- With the common inventory reporting solution for Group companies, more than 27,000 goods movements were realized through the system.
- With the sales and transfer transactions carried out by the trade units, the amount of products moved in the system exceeded 660,000 tons.
- With the systems that singularize the hydrocarbon value chain, 3,200 delivery notes and 5,500 invoices were issued by the trade teams.

Enterprise Resource Planning System (SAP S/4HANA)

With Project Earth, the scope of which was determined with the aim of preparing the necessary infrastructure to combine the operations carried out in different systems and in different ways by the structures whose processes are common with integration into a single system and to operate common processes, financial processes managed in dispersed systems were redesigned and put into use in the central S/4HANA system. With the S/4HANA system, where finance users can operate the operations they carry out in different systems and in different ways in a single system and with common processes, primarily the transition of end users between applications was prevented and it enabled them to operate all their processes by logging into a single system. With Project Earth, the user experience has been improved and a robust master data structure has been created with the singularization of financial master data such as customer, supplier and chart of accounts. In this way, the financial reporting of STAR Refinery, SOCAR Distribution, AZOIL, SOCAR Storage, SOCAR Türkiye and Holding companies can be done from a single location. Basic financial processes such as customer accounting, vendor accounting, fixed asset accounting, banking accounting, etc. were designed, tested and commissioned by utilizing the capabilities of the current version of SAP in order to operate in the same structure for all companies.

Customer Credit Risk Management (SAP FSCM – CR)

The credit risk management structure in the STAR Refinery S4 system was restructured with the "Advanced Credit Management" solution within the scope of Project Earth, and customer credit risk management in the sales processes of STAR Refinery, SOCAR Distribution, AZOIL and SOCAR Storage companies was put into a common structure. With this structure, it was ensured that the credit risk of the customers of STAR Refinery, SOCAR Distribution/AZOIL and SOCAR Storage companies can be managed jointly, credit scores of customers can be calculated and common risk classification can be made. Online integration with the Credit Registration Bureau (Findeks) was provided for data that can be used in customer credit risk classification and score calculation, and a data structure was prepared for manual entry of Credit Reform and D&B data. In addition to this structure, an automatic approval flow was designed and put into use in accordance with the order approval limit table specified in the Corporate Authorization Limits (KYL) of sales orders in the SAP system.

Budget Control (SAP FM)

With Project Earth, the budget control structure for all companies in scope was restructured and the budget control structure was designed according to the needs of the companies in scope (BU, CC). In the S/4HANA system, cockpit and approval flow have been developed for the Supplementary Budget/Budget Transfer transactions to proceed based on the established approval mechanism. In this way, Additional Budget/Budget Transfer requests can be made through the system and approval processes can be operated through the SAP system. Approved Supplementary Budget/Budget Transfer requests are automatically processed and budget records are realized.

Electronic Statement of Account (EHÖ)

The "Electronic Statement of Account" solution, which enables instant reflection of bank transactions to financial systems, was integrated with 24 different banks and put into use. Thanks to the application, speed and efficiency in bank reconciliations, instant updating of customer limits for commercial operations and instant reflection of bank balances on cash flow were ensured. This is implemented for STAR Refinery, SOCAR Distribution/AZOIL, SOCAR Storage, SOCAR Türkiye and other Holding companies.

- Integration with 25 banks was achieved for 19 companies within the scope of Project Earth.

- Automatic accounting records of the account movements in the banks whose integration was completed were instantly created in the SAP system.

- Thanks to the accounting of instant account movements, the credit limits of the customers are also updated instantly, so that customers can make transactions according to the current status of their credit limits during ordering.

- Account balances in banks can be checked at any time from the SAP system, and this instantly accessible data feeds the cash flow report.

Direct Debit System (DBS)

With Project Earth, the DBS structure was reconsidered and the infrastructure was built to meet the needs of STAR Refinery and SOCAR Distribution/AZOIL companies, and integration with 5 different banks was achieved (Akbank, Garanti, Vakıfbank, Denizbank, Yapı Kredi and İşbank).

With DBS processes, customers using DBS limits from banks were provided with the opportunity and infrastructure to work with 5 different banks, and it was enabled to operate a collection-guaranteed sales process at the level of bank limits.

Banking Operations (Payments, CPS Infrastructure)

Payment approval processes, which are operated in different infrastructures in dispersed SAP systems, have been moved to the common approval structure determined in the integration processes within the scope of Project Earth. With the program developed within this framework, the needs of all companies were met, and payment list preparation and approval processes could be operated in a more flexible manner.

In order to advance the end-to-end payment processes, the payment program, instructions and Contactless Payment System (CPS) processes have been designed and put into use in a singular structure for all companies. In this context, CPS communication infrastructure with banks was also deduplicated and communication was established with all banks using the same integration method.

E-Solutions (e-Invoice, e-Archive, e-Ledger and e-Waybill)

SOCAR Distribution and AZOIL companies, which operated e-Solution processes with different providers before Project Earth, were moved to the Detaysoft-NetBT solution used by STAR Refinery, SOCAR Türkiye and Holding companies. In this way, the product of the same supplier has started to be used in all e-Solution applications, including PETKİM.

With the move of SOCAR Distribution and AZOIL companies from Türk Telekom solution to Detaysoft-NetBT solution, an important infrastructure update was also made in signing technology. E-documents currently signed with financial seals have been updated to be signed with HSM. In this way, an infrastructure model that can be supported quickly, effectively and remotely has been adopted. By using the HSM infrastructure used by the Gas Business Unit companies, this transition was realized without incurring any additional hardware costs.

The e-Invoice package currently used by the STAR Refinery company has been updated with the latest version developed by the company within the scope of Project Earth, and all companies within the scope have been made to use the latest version.

In-Group Reflection Processes

Reflection processes between SOCAR Group companies, which have required significant labor and follow-up for a long time, were reconsidered within the scope of Project Earth, and a cockpit was developed for much more effective monitoring and reporting of intra-group reflections and automatic creation of reflection invoices. Starting from the purchasing processes, it has been ensured that the items containing reflections can be entered in a controlled manner, and the reflection traces can be tracked and reported until mutual invoicing. At the end of the period, the details of the reflection invoices issued by the intra-group companies to each other can be tracked in the relevant cockpit for the companies within the scope, and thus, there will be no need for detail request and analysis processes after mutual invoicing.

Procurement & Supply Chain

The procurement processes of the Refinery and Petrochemicals (RP) Business Unit and Corporate Center companies were revisited and the management of the procurement process from the request stage to the recording of the invoice was moved to a single platform with the Central Procurement system. In this way, confusion and duplication of efforts arising from operations carried out in dispersed SAP systems were eliminated. Purchasing approvals, which were carried out on different platforms in dispersed SAP systems in the past, were centralized and centralized on SAPFIORI, and user satisfaction was increased with a user-friendly approval flow system. Thanks to the Master Data Governance (MDG) system, which was positioned to establish a single master data structure on a SOCAR Group basis and to create a common master data dictionary, material, supplier and customer master data were commonized and the same language was spoken systematically on a group basis. With the commonized data and the systems singularized, it was possible to report the stock information of the RP Business Unit companies on a single platform. Integrations with the Enterprise Content Management (ECM) system facilitated the management and accessibility of master data and procurement-related documents.

Hydrocarbon & Trade

Within the scope of the joint hydrocarbon process management of STAR Refinery, SOCAR Storage, and SOCAR Türkiye Petrol Ticaret companies, the value chain from production to storage, from buy-sell operations to shipment to third-party terminals located in many parts of Türkiye, and from stations to delivery to the final customer was designed and put into operation by the end of 2021. Similarly, aviation and maritime operations were unified under the same processes and transformed into common governance structures. SAP's best practices were implemented by adapting to existing processes and designing new processes. The import and export operations of our trade company were also brought under common processes. In the same way, DEP notifications made to the Energy Market Regulatory Authority in accordance with the legislation were moved to a common platform and disorganized systems were eliminated. Integrations with AZOIL station automation systems were ensured and sales information was included in SAP. In addition, integrations were made with the filling automation systems at the SOCAR Storage facility at the point of sending work orders, receiving filling information and making goods movements. Thanks to this integration with filling automation systems, additive fuel blending and sales processes were also put into operation.

Customer Portal

The Customer Portals of STAR Refinery, SOCAR Trade, AZOIL and SOCAR Storage companies were unified under a single roof, and instant, secure and consistent integration was ensured with our business processes running on SAP. In this way, our customers were enabled to place their orders online from any mobile device and view all kinds of commercial activities such as orders, shipments and invoices.

In addition, the Terminal Interface has been commissioned to enable the instant exit of shipments from the terminals of our SOCAR Trade company in many regions of Türkiye and to print delivery notes. With the screens developed on the portal, our customers were enabled to submit their requests, complaints and feedback instantly and to follow up their status afterwards, enabling the systematic calculation of their satisfaction and the improvement of relations.

SAP Work Manager

For STAR Refinery and SOCAR Storage companies, the SAP Work Manager mobile application was commissioned in the Asset Management business unit to enable instant execution of maintenance activities in the field via mobile devices based on maintenance and repair orders. Thanks to this application, all field activity entries, material consumption, control and measurement evaluation forms and communication points between teams have been digitized, paper usage and manual follow-ups were eliminated. In addition, the solution architecture of the project was built with internal resources and project management support was provided. In order for this project, which is a mobile field application, to be managed completely remotely, the necessary infrastructure work was provided for access to mobile devices and support activities. The "The Value is Myself" board calculated a financial benefit of 3.9 million USD for this project.

The Customer Portals of our STAR Refinery, SOCAR Trade, AZOIL and SOCAR Storage companies were unified under a single roof and instant integration was ensured with our business processes running on SAP in a secure and consistent manner.

Multiple Resource Planning

For STAR Refinery and SOCAR Storage companies, the SAP Multi-Resource Planning tool was put into use in order to schedule and schedule all operations of maintenance and repair orders within SAP in the Asset Management business unit. By establishing predecessor and successor relations of operations, besides the scheduling of field activities in SAP with maximum efficiency, it has been ensured that the changes to be made in the maintenance program during the day or week can be followed instantly by both the maintenance and operation teams. In addition, the operations assigned to the mobile devices of the maintenance teams can also be performed through this application. In this project, which was worked entirely remotely with global teams, the project management was undertaken and the solution architecture was also provided.

MİLENİCOM

In the activation process, documents were collected from our customers by cargo in installation or churn (transport from different operator) applications. Since this method prolongs the activation process and is difficult to implement for customers, it has been started to collect documents via e-mail and WhatsApp. Line activation is provided based on the signed documents transmitted in the digital environment, and then documents with wet signatures are requested from the customer. This application, which is not available in other ISPs, was put into use in order to speed up the activation processes and ensure customer satisfaction. By obtaining signed documents via WhatsApp or e-mail, potential customers were facilitated and activation time was minimized.

Millenicom is the first telecom operator to serve its customers via WhatsApp. An alternative channel has been created where customers can easily convey their complaints and requests. Artificial intelligence, which was integrated into WhatsApp for the first time in 2019, was developed with new processes in 2021, and with the creation of processes that started and completed in artificial intelligence, the cost of human resources was reduced. In this context, processes such as fault generation, activation notification, and automatic payment orders were developed with artificial intelligence, aiming at customer satisfaction and reducing human resource costs.

In 2021, many applications were commissioned in order to increase the use of our Call Center Voice Response System (IVR) and Online Transactions Center, which are among the digital channels serving Millenicom customers. In today's conditions where call center costs are reduced and digital usage is increasing, it is aimed to develop channels where customers can make easy and fast transactions. Some existing customer transactions that are not available in our IVR and Online Transactions Center (transfer request, secure internet profile change, tariff change, etc.) were integrated into these channels. Thus, existing customer transactions made on digital channels were diversified and their use was increased. Through the 'Şikayet Var' platform, many companies aim to receive and resolve their own complaints. In 2021, as in 2020, Millenicom was awarded the Customer Satisfaction Gold Award thanks to the quality service provided during the resolution of complaints about Millenicom on the Şikayet Var platform.

The most important reason for internet users to reach the call center is technical complaints. For this reason, it was aimed to reduce call center costs with the fault automation project, which was set out and completed in 2021. In the development, the line values of the customer were automatically checked in the voice response system and according to the result, the relevant fault was solved without the need for human control. The fault automation project played an important role in reducing call center costs as it eliminated the need to meet with the customer representative, eliminated possible representative errors, and was a fast and solution-oriented development.

Millenicom is the first telecom operator to start serving its customers via WhatsApp. An alternative channel has been created where customers can easily communicate complaints and requests.



Other Digitalization Practices

In digitalization, innovation and Internet of Things (IoT) applications and projects; Thanks to SCADA, an application that can remotely manage all network operations within BURSAGAZ and KAYSERİGAZ, many operations that require physical presence, including remote valve opening and closing, remote meter opening and closing, are carried out from SCADA operation centers. In addition, this system operates with Up2Up redundancy between KAYSERİGAZ and BURSAGAZ.

There is also disaster backup for the ERP system, but it is aimed to establish Up2Up system for these systems in the future. More than 92% of the current processes take place on SAP and SAP-compatible systems. Except for legal obligations, the use of paper has reached extremely low levels. Thanks to the Work Force Management (WFM) application, which automates field operations, more than 28 processes in the field can be managed on a map base. Work assignments can be made automatically based on location and region. With the Automatic Meter Reading (AMR) application, many meters can be read remotely. With the SOnline application, the meter reading process can be carried out entirely via smartphones and instant invoices can be generated in the field.

Common policies and practices of the SOCAR Türkiye group have been integrated into the projects in cases where information confidentiality and cyber security are to be enhanced. In addition, SCADA has a much stricter security approach in accordance with the legislation. When it is necessary to share SCADA data with the outside world, relevant data sharing is carried out through a separate middleware called POLARIS, and SCADA systems are carried out in an isolated method since they are critical infrastructure for national security. On the other hand, since SOCAR Terminal is the only business unit in the Group that works for the end consumer (B2C), the SAP KVKK - Personal Data Protection Law (GDPR) module was commissioned last year, earlier than other group companies.

Digitalization, innovation and IoT projects implemented at SOCAR Terminal are as follows;

Pre-Gate Kiosk Solution

Two wall-mounted kiosks were positioned in the Pregate area, integrated with the operation software, and a kiosk application was developed to enable vehicle drivers to see their card (RFID) times and query container door exit status.

Customer Web Portal

Container movements, vehicle registrations, draft invoices in the customers' port area web portal where they can see their details, empty exit requests, ship schedule and operations has been developed.

GuardPointPro Web Interface

A web application has been developed to facilitate the driver card definition by adding, editing, card printing and integrating the driver records in the card pass system used in the automatic door system into the N4 Navis operation application.

Reporting

A web application was developed to provide reporting of instant or retrospective operational data to senior management and users in line with authorizations.

Support Portal

A support portal was launched to provide more organized and faster solutions to the needs and requests of internal customers.

Information Security at SOCAR Türkiye

While ensuring the continuity of the Information Security Management System, which was established to ensure information security policies throughout SOCAR Türkiye within the framework of international standards and in compliance with legal requirements, efforts were also made to commonize information security policies, standards and procedures across the group.

In 2020, as a result of the audits conducted at STAR Refinery, ISO 27001 Information Security Management System was certified for the first time, while Petkim's ISO 27001 certification was renewed. Training and testing activities were carried out throughout SOCAR Türkiye and group companies with the aim of raising employees' awareness of information security. In order to ensure end-to-end information security on business platforms, efforts to expand cyber security solutions across the Group continued in 2020. In order to closely monitor the security vulnerabilities published for today's rapidly increasing cyber threats, automatic and centralized security scans are carried out throughout SOCAR Türkiye and group companies, while the security vulnerabilities identified on information systems are directed to the relevant teams and their status is closely monitored.

In the Refinery and Petrochemicals Business Unit, various projects are carried out on network and system security in order to improve the cyber security infrastructure for industrial control systems and operational technologies. Efforts are underway to acquire cyber security solutions customized for industrial control systems and capable of anomaly detection. In the event of a real cyber-attack, penetration tests are conducted to see how the company would be affected, to test the adequacy of existing security controls and to proactively take precautions. In accordance with the "Security Analysis and Testing Procedures and Principles for Industrial Control Systems Used in the Energy Sector" published by EMRA, security analysis and tests are also carried out on Industrial Control Systems (ECS).

In order to improve the monitoring and response capabilities against cyber-attacks targeting the Company, the Company continues its efforts to include the records of industrial systems within the scope of the central Security Incident Records Management System project, which was implemented to cover SOCAR Türkiye and group companies. In order to increase the security levels of the databases used within the Company, work is also underway to install a database logging and monitoring system. In order to improve the monitoring and response capabilities against cyber-attacks targeting the Company, the Company continues its efforts to include the records of industrial systems within the scope of the central Security Incident Records Management System project, which was implemented to cover SOCAR Türkiye and group companies.

The Company also continues to work on the installation of a database logging and monitoring system to increase the security levels of the databases used within the Company. Within the scope of the security operation center monitoring service, cyber intelligence resources are utilized, while alarms generated for suspicious situations are monitored 24/7, enabling rapid response to cyber incidents. In this context, new generation security technologies that increase visibility and malware detection capabilities on end-user computers have been introduced and dissemination efforts have been completed across the Group.

Asset Management

Refinery and petrochemical facilities, which are managed with an approach based on continuity in production, are categorized as long-term and large-scale investments, while continuous improvement and performance enhancing investments are also taken into consideration. Petkim, Türkiye's only integrated petrochemical facility, and STAR Refinery, which meets approximately 25% of Türkiye's need for processed crude petroleum products, have a large share in asset management with values such as providing the product expectations of the market in which SOCAR Türkiye is active without interruption.

It is aimed to continuously increase the operational performance in the areas of asset management process, OHS-E, operational and mechanical availability, optimization of operating costs and asset life cycle, which are carried out by the Production, Maintenance and OHS-E units under the leadership of the Reliability Directorate. International maintenance standards and information technology infrastructure are utilized in the management of all processes. With the Root Cause Analysis Systematic, Petkim, SOCAR Storage and STAR Refinery, root cause analyses of equipment-related shutdowns occurring in all plants and auxiliary facilities were performed, and action plans were developed and monitored. All RCA performed with Meridium Tool, an international software, was recorded.

Petkim and STAR Refinery created weekly and monthly reports to increase the effectiveness and efficiency of business processes with the Asset Management Reporting Systematic. Petkim has developed predictive maintenance applications with Artesis for critical engines in order to detect malfunctions in advance, while the SmartSignal application is in place at STAR Refinery to detect malfunctions in advance. With the SOCAR Terminal Field Lighting Savings Project and panic button integration, the number of lamps burning on each lighting pole can be seen and controlled by CCTV.

With the panic button system, fast and cost-effective solutions are produced in case of malfunction, and the expected 2-year savings of 330 thousand TL in 2021 amounted to 197 thousand TL. With the Facility Compensation Control SCADA, the manual system has been switched to the SCADA system and the system is controlled by computer and can be intervened without going down to the field.

Thanks to this system, 1 person/hour per day was saved and a value of 8,700 TL was gained from 30 person/hours per month. Another value saved with SCADA is the System for Monitoring the Daily Operation Number of Level Difference Drainage Pumps. Daily operation information of the pumps was added to SCADA. When the daily operating limits defined in the system are exceeded, a warning is generated in the system. In 2021, overoperation of two pumps was detected by the system, preventing the failure of the pumps and saving money. Under the roof of SOCAR Türkiye, Refinery and Petrochemical and Gas Business Units and IT teams contribute to ensuring product and service continuity and continuous improvement of the management system by participating in Business Impact Analysis, Risk Analysis, tests and drills, training and awareness activities conducted by the Risk Group Coordinator every year within the framework of compliance with the "ISO 22301 Business Continuity Management System" standard. The Business Impact Analysis determines the targeted recovery times for interrupted products and services and the resource requirements (human resources, building, equipment, application/system and 3rd party) needed for recovery. With the tests and drills conducted throughout the year, the functionality of the Business Continuity Plans created with the data of the Business Impact Analysis is tested and areas for improvement are identified.

Mechanical Availability

	(%)		
	2019	2020	2021
STAR Refinery	93.4	95.3	94.9
Petkim	91.3	91.7	91.4

Table 4: Mechanical availability

IT teams make the necessary preparations and investments to ensure that the system dependencies of critical products and services remain operational in the event of a crisis. In the short and medium term, it is aimed to expand and improve the asset management system to the entire SOCAR Türkiye Refinery and Petrochemicals Business Unit, and in the long term, to increase production and equipment availability, reduce OHS-E incidents and carry out studies to ensure cost optimization.

Business excellence

Therefore, all activities are carried out in compliance with international standards developed for the relevant process. Management system standards are taken into consideration in business process implementations and used as a guide.

SOCAR Türkiye emphasizes the importance it attaches to its customers and service quality through ISO 9001 Quality Management System, its sensitivity to the environment and its employees through ISO 14001 Environmental Management System and ISO 45001 Occupational Health and Safety, its assurance to its customers that their information is protected through ISO 27001 Information Security Management, its customer-oriented approach through ISO 10002 Customer Satisfaction Management System, the continuity of critical processes through ISO 22301 ISMS Management System, the effective management of risks through ISO 31000 Enterprise Risk Management and the effective and efficient energy saving through ISO 50001 IMS Systems.

The Integrated Management System manages management disciplines in an integrated manner. Periodic independent external audits are carried out for all of the international system standards followed to ensure compliance with the standards.

Management System Standards

As an element of excellence, SOCAR Türkiye also makes a difference in its practices related to management systems, adapting to constant change, and implementing the latest developments in legislation and technical standards.

All elements related to organizational values, activities and objectives are ensured to create a complete harmony within the organization with the applications of the integrated management system.

Management Systems Certificates

	Petkim	STAR Refinery	SOCAR Türk ^y e Fuel Storage	SOCAR Terminal	Bursagaz	Kayserigaz	Enervis
ISO 50001 (Energy Management System)	✓	✓		✓	✓		
ISO 14001 (Environment Management System)	✓	✓	✓	✓	✓	✓	
ISO 45001 (Occupational Health and Safety Management System)	✓	✓	✓	✓	✓	✓	
ISO 9001 (Quality Management System)	✓	✓	✓	✓	✓	✓	
ISO 27001 (Information Security Management System)	✓	✓			✓	✓	
ISO 17025 (Laboratory Quality Management System)	✓	✓					✓
ISO 22301 (Social Security and Labor System)	✓	✓	✓		✓		
TS ISO 10002 (Customer Satisfaction Management System)	✓				✓	✓	
TS ISO 31000 (Risk Management System)	✓					✓	
Green Port Certificate	✓						
TSE Covid-19 Safe Production Certificate	✓	✓	✓				
TSE Covid-19 Safe Service Certificate					✓		

Table 5: Management Certificates

Responsible Supply Chain

The value chain created by SOCAR Türkiye requires a purchasing operation parallel to its size. Therefore, a significant portion of the sustainability impacts within the value chain occur in supplier operations where purchasing operations are carried out. Adopting the principle of impact management throughout the value chain in sustainability management, SOCAR Türkiye prioritizes the management of social (employee conditions, human rights, occupational health and safety, etc.), economic and environmental (environmental management system and requirements, emission management, water management, etc.) risks in its procurement operations and supplier selection, and all procurement transactions are carried out in compliance with SOCAR Türkiye Procurement Values. SOCAR Türkiye also requires its procurement business partners to adopt the same principles of business ethics. Suppliers are also expected to comply with SOCAR Türkiye Code of Business Ethics and Anti-Corruption and Trade Controls Policy. Accordingly, all parties with whom commercial relations are established undergo a compliance process.

SOCAR Türkiye Purchasing Values

Non-discrimination: Offers are evaluated only on the basis of cost and quality criteria and are not subject to any other discrimination.

Fair Competition: A fair competition environment is aimed by providing equal information, opportunity and environment to all suppliers. Business is conducted in full compliance with supplier, monopoly and fair competition laws.

Anti-Corruption: Suppliers and other third parties with whom business is conducted are expected to never tolerate any form of corruption, including but not limited to bribery, and to show every care in this regard. Doing business with contracted organizations and/or supplier candidates known to give bribes are avoided.

Employee Health and Safety: Suppliers are expected to provide a healthy and safe work environment for their employees. Suppliers are required to comply with all relevant legislation on occupational health, safety and environmental issues. .

Protection of Intellectual Property, Confidential Information and Personal Data: Suppliers must not exhibit any behavior contrary to SOCAR Türkiye's intellectual property rights. They must inform SOCAR Türkiye in case they encounter a violation of these rights. In this context, they must cooperate with SOCAR Türkiye to prevent and/or terminate a possible violation. In addition, suppliers must act in accordance with the policies implemented in SOCAR Türkiye regarding the protection of personal data, and must take all measures to protect the personal data they collect while doing business with SOCAR Türkiye.

Respect for Human Rights: We aim to work with suppliers that respect Human Rights, do not discriminate in any way and provide equal opportunities to their employees.

Code of Ethics: SOCAR Türkiye pays attention to prefer the parties that act/can act in accordance with the Code of Ethics when selecting the parties with whom it will do business.

For this reason, potential business partners are invited to read, understand and implement the Code of Ethics to the extent necessary, and are strongly encouraged to work in this area. In line with SOCAR Türkiye Compliance Procedures, all parties with whom commercial relations are established are subjected to the SOCAR Compliance process and approval is obtained from the Compliance Department. Under the heading of Our Responsibility towards the Environment and Society, the Group's views on the following issues were declared:

- Corporate Social Responsibility
- Respect for Human Rights
- Occupational Health and Safety and Environment
- Political Activities

SOCAR Türkiye's activities are carried out in accordance with the Constitution of the Republic of Türkiye, the United Nations Universal Declaration of Human Rights and the main conventions of the International Labor Organization.

In 2021, 717 supplier companies for STAR Refinery, Petkim and SOCAR Storage were subjected to compliance assessments.

In administrative procurement processes, environmental, social and economic assessments are not made in procurement processes, but a much more comprehensive assessment is made and companies with a purchase amount of more than 50 thousand dollars, with a framework contract, with an impact on process safety, production process, human resources, information security, legal and regulatory compliance, and in case of complementary requirements for health and safety, environment, quality assurance and control, legal compliance are included in the assessment process. In this context, SOCAR Türkiye expects its suppliers to comply with human rights rules, to provide a safe and healthy work environment for its employees, to adopt anti-corruption rules and to be sensitive about their environmental impacts. Procurement Unit performance criteria include indicators related to time, cost and operational processes.

During the COVID-19 pandemic, according to the procurement procedures, the printed forms that need to be completed in the relevant purchases are transferred to EBA to continue the processes. Since the beginning of the pandemic process, the option of working with high stocks is preferred, especially for chemical materials purchased from abroad, in order to ensure production continuity by minimizing the risks arising from suppliers and/or logistics.

In addition, it is aimed to minimize supply risks by making longer-term connections especially in spare material purchases and giving the supplier a clearer deadline. Considering SOCAR Türkiye, Petkim and STAR Refinery operations, procurement activities are divided into two groups: crude oil supply operations and non-crude oil product and service purchases. Crude oil supply operations include crude oil as well as semi-product and finished product purchases. Non-crude oil purchases include services, equipment and consumables. Suppliers include large-scale companies as well as small and medium-sized companies.

Supply assurance is ensured through long-term material and service supply agreements and/or having approved alternative suppliers in the supplier portfolio. As of November 2019, in line with integration efforts, STAR Refinery and Petkim purchases have been centralized for integrated procurement. In Petkim, STAR Refinery and SOCAR Storage operations, suppliers are subjected to Performance Evaluation for orders over 100 thousand dollars. On-site Contractor audits by the Procurement Department of the Refinery and Petrochemicals Business Unit 16 audits were conducted in 2021 within the scope of compliance controls.

With the audit question set, which includes detailed and comprehensive questions including employees and environmental issues, contractors that are not at the desired level are directed to complete the deficiencies. For purchases over 500 thousand dollars, a prequalification (PQ) process is applied. In 2021, the integration of the Supplier Portal with the SAP system was completed. As of 2022, suppliers are planned to enter data for registration into the system with their own user passwords. Among the data requested during the registration phase are the main headings of HSE and Quality Management, under which HSE Policy, ISO 45001 Occupational Health and Safety Management System and ISO 14001 Environmental Management System certificates and practices, Risk Assessment, Emergency Response Plan, Number of Accident Notifications, Quality Management practices are evaluated. Similarly, 380 companies are subjected to pre-qualification assessment between November 2019 and December 2021. A policy for Green Procurement has been prepared and approved by the management.

With the policy, it is reported that the issues of resource conservation, energy consumption, pollution prevention and protection of human health will be evaluated during the procurement phase, if there is a possibility of implementation.

Local Supply Development / Indigenization Project

Under the Procurement structure of the Refinery and Petrochemicals Business Unit, the Domestic Manufacturing Service operates in order to prepare technical specifications for spare parts and equipment originally procured from foreign companies and to procure them more economically from domestic manufacturers. In order to increase the localization rate, the Localization Commission was established and started its activities as of September 2020. The Commission examines the requests and determines those suitable for localization and the Purchasing Department collects offers from domestic markets. In this context, no connections were made in 2021.

Supply Rate

(%)

	Local	80	83	79
	International	20	17	21

2019 2020 2021

Table 6: Supply Rate
Procurement rates include consolidated figures for SOCAR Türkiye, Petkim, STAR Refinery, SOCAR Terminal and SOCAR Storage. Data is calculated based on total procurement amounts.

Aktif Tedarikçi Sayısı

(Adet)

	SOCAR Türkiye	316	338	327
	Petkim	1.363	1.179	955
	STAR Refinery	640	684	543
	SOCAR Terminal	295	278	350
	SOCAR Storage	160	177	158

2019 2020 2021

Table 7: Number of Active Suppliers
SOCAR Türkiye prefers local suppliers in its crude oil and non-rare material purchases. In 2021, a total of 5.6 billion TL worth of purchases were made, 80% of which were made from local suppliers.



Safe and Inclusive Workplace

One of the most important criteria for creating a competitive value chain in energy sectors such as refining and petrochemicals, in which SOCAR Türkiye operates, is human resources with high professional knowledge and experience. As a responsible employer, SOCAR Türkiye, in accordance with its corporate values and ethical principles, offers its employees a safe and healthy workplace, a working life where fairness and equal opportunity are ensured, and which facilitates individuals to realize their personal potential.

Occupational Health and Safety and Environmental Management System

In line with Socar Türkiye's work culture, occupational health and safety is seen as an area of continuous improvement, and each goal realized is a prelude to the next. The occupational health, safety and environmental management principles applicable throughout SOCAR Türkiye operations are framed in the OHS-E Policy. With this understanding, efforts such as developing the SAFE OHS-E Management System, designing business processes according to strategic structuring, standardizing work authorization and process safety systems in all operations are ongoing.

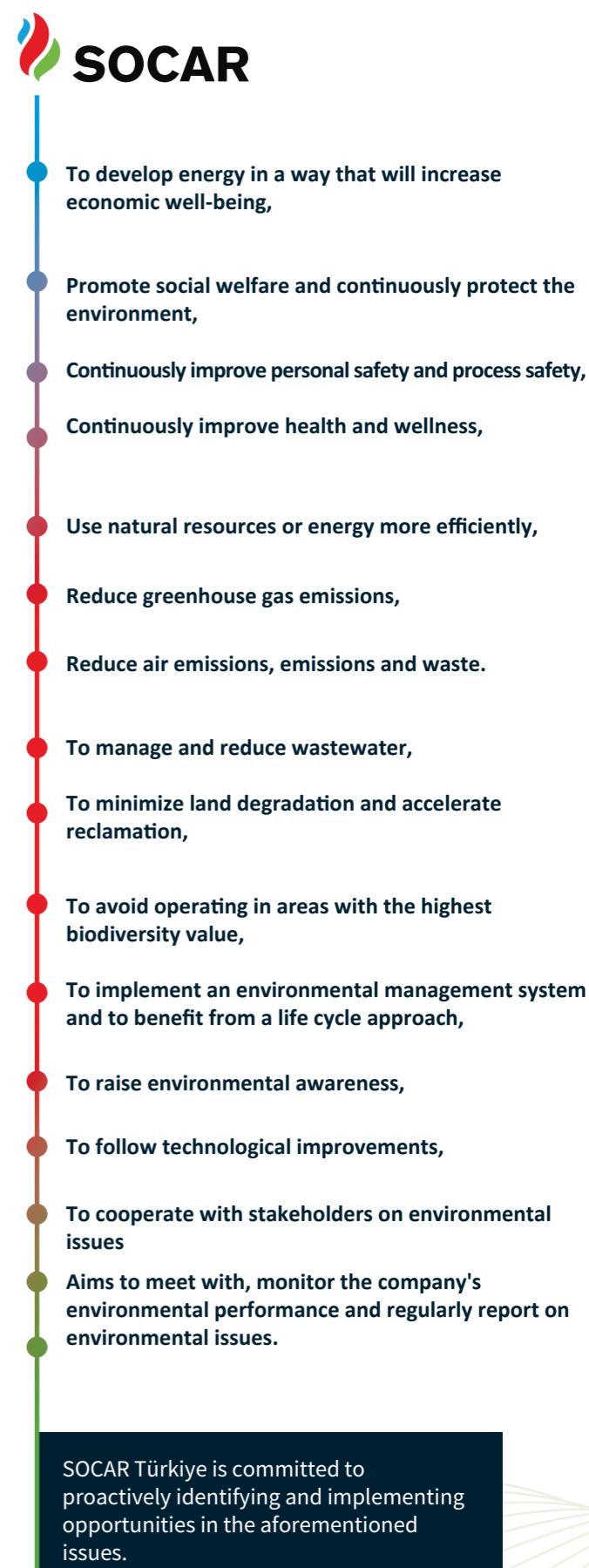
SOCAR Türkiye has a culture that embraces the industry's best OHS-E practices, which form the basis for ensuring occupational health, safety and environmental perfection. At SOCAR Türkiye Enerji A.Ş., we aim to be reliable and efficient in every area in which we operate. In order to achieve this, the "SAFE" (SOCAR Aims for Efficiency) Occupational Health, Safety and Environment Management System was developed and our corporate expectations that our operations and projects must comply with were determined. "SAFE" is based on 4 Principles and 16 Principles that reflect SOCAR Türkiye's corporate OHS-E vision and form the basis for strong OHS-E practices across SOCAR Türkiye group companies. "SAFE" is a tool that provides a structured approach for OHS-E management and realization of OHS-E objectives in the activities of all SOCAR Türkiye subsidiaries within the scope of SOCAR Türkiye's corporate OHS-E policy. The aim is to manage SOCAR Türkiye OHS-E practices in a "systematic and consistent" manner with "SAFE".

16 Basic Principles of the SAFE Management System

- 1 Compliance with Legislation
- 2 Management Leadership and Responsibility
- 3 Risk Assessment and Management
- 4 Operational Responsibility
- 5 Contractor and Supplier Management
- 6 Competence, Training and Behaviors
- 7 Change Management
- 8 Plant Design and Construction
- 9 Environmental Assessment and Management
- 10 Protection of Human Health
- 11 Information and Documentation
- 12 Social Responsibility
- 13 Customers and Products
- 14 Performance Monitoring and Development
- 15 Analysis and Prevention of Incidents
- 16 Emergency Preparedness and Crisis Management

SOCAR Türkiye integrates occupational health, safety and environmental issues into the sustainable development of the company by synchronizing its activities with plant product designs, annual target setting, operational practices and employee development and performance programs. Another condition for keeping the OHS-E performance at the highest level throughout the company is to ensure that the practices to be carried out are decided with a participatory approach, that the incidents that occur are evaluated objectively and necessary measures are determined, and that employees are active participants and have a say in these processes. For this purpose, the OHS Committees established within the scope of the relevant legislation include the relevant company managers as well as employee representatives such as union representatives. In addition to the SAFE OHS-E Management System, business units also comply with different international management system standards in the management of occupational health, safety and environmental processes. Our facilities have ISO 45001 Occupational Health and Safety Management System, ISO 14001 Environmental Management System and Greenport Certificates in port operations.

In the business units in which we operate; as a result of the practices we have adapted to our processes by continuously monitoring the OHS-E performance indicators we have determined and taking the best practices in the industry as reference; the risks related to the effects of our activities on Occupational Health and Safety, Environment, Equipment Damage, Operating Authorization, Reputation have been effectively managed; compliance with the targets has been achieved as a result of a decrease in our accident rates and their effects.



Total Recordable Injury Rate

	SOCAR Employee Accident Frequency Rate		Contractor Accident Frequency Rate		
	2019	2020	2019	2020	
Socar Türkiye Corporate Headquarters	0	0	0	1,86	0
Petkim	1.42	0.89	0.36	0.91	0.64
STAR Refinery	1.25	0.31	0.46	0.19	0.94
SOCAR Storage	0	0	0	0	0
SOCAR Terminal	0.31	1.77	0.35	0.67	0.54
BURSAGAZ	0.61	0.19	0.18	0.77	0.79
KAYSERİGAZ	0.83	1.41	0.76	6.57	0
	2019	2020	2021	2019	2020

Table 8: SOCAR Türkiye Total Recordable Injury Rate

Training activities are carried out throughout SOCAR Türkiye in order to develop occupational health, safety and environmental culture and to keep awareness constantly high. These training activities, which are carried out in all business units, start with orientation trainings given at recruitment and continue continuously throughout the employment period.

Employee OHS-E Trainings

	Number of Employee Participated in OHS-E Training (Person)				Employee OHS-E Trainings (Hours per Person)			
	2017	2018	2019	2020	2021	2019	2020	2021
SOCAR Türkiye Corporate Headquarters	127	126	295	323	211	5.95	9.00	16.15
Petkim	2,446	1,116	2,490	2,396	2,322	6.85	12.75	35.96
STAR Refinery	823	1,077	1,116	1,106	1,092	18.33	34.07	39.89
SOCAR Storage	-	-	300	261	313	12.99	9.43	36.52
SOCAR Terminal	-	-	74	70	74	18.97	27.40	34.20
BURSAGAZ	-	-	46	2,883	7,151	3.59	1.42	1.40
KAYSERİGAZ	-	-	0	2,973	4,881	0	1.13	0.56
	2017	2018	2019	2020	2021	2019	2020	2021

Table 9: SOCAR Türkiye Employee OHS-E Trainings

Employee OHS-E Trainings

	Number of Employee Participated in OHS-E Training (Person)				Total Training Hours (person x hours)			
	2017	2018	2019	2020	2021	2019	2020	2021
SOCAR Türkiye Corporate Headquarters	127	126	295	323	211	1,755	2,907	3,408
Petkim	2,446	2,424	2,490	2,396	2,322	55,239	80,806	83,498.80
STAR Refinery	823	1,077	1,116	1,106	1,092	57,381	38,150	43,564.10
SOCAR Storage	-	-	0	0	74	0	0	2,530.8
SOCAR Terminal	-	-	300	261	313	3,896.5	2,461.5	11,432
BURSAGAZ	-	-	46	2,883	7,151	165	4,087	10,003
KAYSERİGAZ	-	-	0	2,973	4,881	0	3,347	2,716
	2017	2018	2019	2020	2021	2019	2020	2021

Table 10: SOCAR Türkiye Employee OHS-E Trainings

OHS-E Industrial Good Practices at SOCAR Türkiye

The health and safety of all company employees, contractors and neighbors is of vital importance at SOCAR Türkiye facilities and offices. Everyone working for SOCAR Türkiye is responsible for the OHS-E policy, regardless of their level and seniority.

In 2021, in addition to the trainings organized to fulfill OHS-E commitments, to provide employees with a safe working environment and to increase employees' OHS-E awareness; short, medium and long-term goals were set. In line with the targets set within the scope of occupational health, safety and environment performance indicators, Personal Protective Equipment (PPE) Awareness program, Behavior-Oriented Occupational Safety Program, Occupational Health, Safety and Environment Award and Incentive Program, Road Safety Program, Digitalization studies (Synergi-Life OHS-E Reporting Program, E-Training, artificial intelligence (intenseye), E-Permit, ... etc.), On-the-Job Talks, OHS-E Bulletins, Lessons Learned from Incidents, and some OHS-E programs such as the Field Inspection Program (PFI-Periodic Field Inspections), Nutrition Friendly and Physical Activity Supporting Workplace Program, Incident/Incident Root Cause Analysis Training Program, Hazard Recognition Program have also been implemented.

In 2022, continuity in OHS-E programs is aimed with the Road Safety Program, RCA (Root Cause Analysis) Program, All Accidents Can Be Prevented Program and OHS-E Week activities.

Personal Protective Equipment (PPE) Awareness Program

SOCAR Türkiye implemented a personal protective equipment awareness program in 2021 with the slogan "It is Worth Protecting Yourself" chosen by SOCAR employees within the scope of OHS-E Programs. Communication processes carried out to promote and develop OHS-E culture.

During the OHS-E awareness program process, activities such as sharing the program with employees through announcements, evaluation surveys (at the beginning and end of the program), slogan contest, Senior Management video messages, general information videos, awareness questions about the program and awards in competitions were carried out. The program aimed to prevent and/or reduce the severity of potential accidents by increasing the awareness of employees on the use of PPE, and this was observed to be reflected positively in statistics.

Occupational Health, Safety and Environment Reward and Incentive Program

The purpose of this program is to make a positive contribution to the Occupational Health, Safety and Environment culture based on the participation of SOCAR Türkiye employees in OHS-E activities through rewards. The Rewarding Program evaluations cover OHS-E practices such as participation in on-the-job talks, organization of these meetings, recording of behaviors and situations that are incompatible with occupational safety using the OHS-E Observation and Reporting System, active participation in the periodic field audit program, working in accordance with OHS-E rules, and efforts to raise awareness. This program also supports the principle of "Management Leadership and Responsibility", which is the 2nd of the 16 basic principles of the SOCAR SAFE OHS-E Management System. This program, which aims to promote and develop a culture of Occupational Health, Safety and Environment, and in turn reward positive behaviors focused on occupational safety and environmental protection by preventing harm to people, assets and the environment, also aims to encourage employees to take a proactive role in OHS-E engagement activities in the field.

Artificial Intelligence (Intenseye)

SOCAR Türkiye monitors the work area through cameras within the scope of the Intenseye closed circuit camera application in order to guarantee Occupational Health and Safety.

By using unsafe behavior and situation detection scenarios installed on the cameras, it is aimed to record nonconformities, determine and implement actions for improvement. Within the scope of KVKK, the faces of employees are automatically mosaicked by the system. The Intenseye application was launched in two pilot regions within the SOCAR Refinery & Petrochemicals Business Unit and is planned to go live after the test phases.

On-the-Job Talks, OHS-E Bulletins, Lessons Learned from Incidents

Toolbox Talks, which have an important place in the development of Occupational Health, Safety and Environment culture, are regularly implemented in all business units at SOCAR Türkiye. These short-term training meetings, which are organized by bringing together small teams and work groups, make a significant contribution to the creation of an efficient and safe working environment in the workplace. It also serves as an educational tool to learn lessons from events in the industry and sometimes in our workplace, to understand problems, to evaluate opportunities and to create brainstorming among employees to produce solutions under common ideas. These meetings are also a short and practical way for managers to get feedback from employees. Monthly OHS-E bulletins and on-the-job talks ensure that all our colleagues are kept up to date on the hazards and risks in the workplace.

In 2021, the on-the-job speeches, bulletins published in-house and lessons learned from the incidents prepared were compiled into a booklet; it was shared with our colleagues and aimed to support the Occupational Health, Safety and Environment culture.

E-Training Program

E-Training support is provided in order to provide a safe working environment for our employees, to increase employees' OHS-E awareness and to guarantee legal processes. In 2021, E-Training processes continued within the scope of digitalization efforts, which are among our OHS-E commitments. Within the scope of E-Training, trainings required by legal regulations, job-specific trainings and personal development trainings are provided. In addition to the trainings that were used effectively during the pandemic period and that all employees are required to receive as per the legislation, additional trainings were included in the E-Training package and made accessible to all employees.

Behavior-Based Business Safety (BBS) Program

The SOCAR Türkiye Behavior-Based Occupational Safety Program "Harm-Less" (H-L) was developed in-house. Observation and feedback is the main function of the program, with the objectives of identifying and reducing behaviors at risk, increasing safe behaviors and removing barriers to good performance. It is a program to improve the culture of occupational health and safety in the workplace by influencing the thoughts, behaviors and actions of employees through the delivery of Behavior Focused Safety Talks. This program aims to create healthier, safer and more productive working environments by improving the OHS-E awareness level of employees. The behavior and perception levels of employees are as important as having an OHS-E Management System established with appropriate policies, systems and procedures. In order to create the desired level of OHS-E awareness, it is essential to establish a dialog with employees and ask them open-ended questions about OHS-E. With this program, employees will be enabled to be more creative and increase their perception levels, while contributing to the employees' speaking out from the passive listener state, remembering their training and experience.

In 2021, the program was implemented by developing the implementation principles and forms, and it will continue in 2022 with the training of all employees in the target group and the expanded implementation of the program.

Field Inspection Program (PFI-Periodic Field Inspections)

SOCAR Türkiye regularly conducts field audits in order to monitor and improve the OHS-E performance at the facilities operating in all group companies. With the PFI Program, which was also developed throughout the SOCAR Refinery and Petrochemicals Business Unit; effective planning of field audits, regular field tours, risk-based compliance assessment and elimination of nonconformities identified were ensured. The PFI Program aims to comply with the expectations of the SAFE OHS-E Management System "14th Performance Monitoring and Improvement" principle. In this direction, it is aimed to manage the impacts of activities on "Occupational Health and Safety, Environment, Facility / Equipment, Operating Authorization, Reputation" as a result of ensuring safe, efficient and sustainable production with the continuous improvement cycle. The PFI Program is included in the OHS-E performance process in accordance with the "OHS-E Reward and Incentive Procedure". As a result of the evaluations to be made within the scope of compliance with OHS-E requirements in line with the program, teams that perform well are rewarded at regular intervals.

OHS-E Week Activities

OHS-E Week is organized annually with the participation of SOCAR Türkiye employees through various activities as one of the programs supporting OHS-E culture and awareness. Within the framework of OHS-E Week, the main activities are as follows:

- Online activities (OHS-E-oriented competitions and surveys that employees and family members can participate in, etc.)
- OHS-E themed events (vehicle rollover simulator, VR experiences, earthquake simulator, etc.), bulletins published during the OHS-E Week, and messages from senior management on OHS-E, aiming to raise employee awareness, "April 28, World Occupational Health and Safety Day", "May 4-10, Occupational Health and Safety Week" and "June 5, World Environment Day" are celebrated together.

Hazard Recognition Program (HRP)

The first step of the Hazard Recognition Program was implemented to monitor and manage the hazard identification system in all SOCAR Türkiye group companies through a single platform. The program, which provides a unique hazard identification method based on the energy model, aims for a purposeful and systematic approach in the hazard identification steps of the OHS-E risk management process. In 2021, in line with the first step of the program, trainer trainings and orientation workshop were completed. In 2022, the program will be integrated into the existing Work Authorization System and the Hazard Analysis and Risk Management (HARM) process.

Remote Work OHS-E Management

The remote working method, which was tested during the COVID-19 Pandemic, became permanent with the 'classic', 'hybrid' and 'remote' working models launched in August 2021. With the ergonomics support provided within the framework of the fringe benefits determined with the new working model, our employees operating in the 'hybrid' and 'remote' working model were enabled to create a working environment at home with minimum criteria. The content of the "Remote Working OHS-E Training" was created in order to fulfill legal obligations and to guide SOCAR Türkiye employees on the protection of health and safety during remote working. The implementation of the trainings, which provide guidance to the participants on the psycho-social, ergonomic and other risk factors that the remote working method involves and the measures and good practices to be taken to overcome these risks, has started.

Vehicle Tracking System Application

With the SOCAR Türkiye Road Safety Practice, it is aimed to develop a safe driving culture and to carry out activities within this scope in a safe manner. In this direction, the 'Vehicle Tracking System' application was implemented in cooperation with the relevant units. With this application, four parameters were determined in terms of OHS. For vehicles within the scope of the application, compliance with the limits set in the parameters of sudden deceleration, sudden acceleration, speed limit and driving time can be monitored, recorded and reported. This contributes to road safety and the development of a safe driving culture.

Nutrition Friendly and Physical Activity Supporting Workplace Program

It is a program that aims to increase workplace productivity and create a health-promoting workplace environment by encouraging employees to eat healthy and engage in regular physical activity. The 'Employee Support Line' provides nutrition counseling and dietitian services, on-site laboratory services where blood tests can be performed, medical information, counseling and psychological support, activities that support physical activity, live chats and broadcasts with health recommendations on various topics.

Incident/ Accident Root Cause Analysis Training Program

Root Cause Analysis (RCA) is a process designed to identify the systematic root causes of an incident or accident and develop effective solutions to eliminate or reduce the likelihood of recurrence. Using the RCA technique, the investigation team assigned after the incident/accident presents the investigation report by collecting evidence, conducting interviews examining the human factor, determining the visible and systemic causes of the incident/accident, and identifying corrective/improving actions to prevent recurrence. In order to make the methodology systematic and consistent across all SOCAR group companies and to improve the competence of these incident/accident investigation team members, an in-house developed "Root Cause Analysis" training is planned for 2022.

Synergi-Life OHS-E Reporting Program

All incidents related to occupational health and safety at SOCAR Türkiye are reported, recorded and analyzed to identify the source of the incident and trends. Corrective / improving actions are taken to prevent the recurrence of incidents that threaten occupational health and safety, such as work accidents, and risk assessments related to the incident are reviewed. SOCAR Türkiye supports the sharing of the lessons learned from the incidents. In this context, the 'Synergi-Life' software program is used in all SOCAR Türkiye group companies to monitor, manage and report OHS-E data on a single common platform. With the 'Synergi-Life' software, OHS-E processes such as incident/accident management, audit activities, action plans, risk management, OHS-E legal compliance management, reporting on OHS-E key performance indicators (KPIs), data processing, analysis, corrective/improving action creation and follow-up, performance monitoring are recorded with a digital solution.

Process Safety Management

Process safety is concerned with the prevention and control of incidents that have the potential to release hazardous substances or energy, managing proactive measures to ensure the integrity of the business and prevent the release of hazardous materials through good design principles, engineering, maintenance and operational practices. Such incidents may cause toxic effects, fire or explosion and may ultimately result in loss of life, serious injury, property damage, loss of production and environmental impact. SOCAR Türkiye has a culture that adopts the industry's best OHS-E practices, which form the basis for achieving excellence in Occupational Health, Safety and Environmental management. The Process Safety Management System carried out at SOCAR Türkiye, where the vision of being a reliable, life and nature sensitive, innovative company in the sector is adopted, consists of the following topics.

- Process Safety Management and Organization
- Performance Management and Continuous Improvement
- Operational Discipline
- Audits
- Process Safety Leadership Coaching
- Process Safety Culture and Talent Development Program
- Process Safety Information (Process and Equipment Design Information, P&ID - etc.)
- Process Hazard Analysis (What-if Analysis, HAZOP & LOPA etc.)
- Process Safety Change Management (Technology & Facilities)
- Pre-Commissioning Safety Review (PSSR)
- Operating Procedures
- Incident Investigation and Reporting
- Competence Development
- Emergency Response and Planning

The Process Safety Management (PSM) Project, which started in 2018 at STAR Refinery and in 2020 at Petkim and SOCAR Storage, aims to prevent major industrial accidents, reduce their impact and improve OHS-E performance and OHS-E culture. Best practices in the industry regarding process safety are integrated into SOCAR Türkiye processes.

Process hazard analysis studies are carried out by conducting the Process Safety Change Management (MOC) process before field implementations regarding the planned changes in the existing equipment, materials, process control systems, operating systems or application/work management in our sites. The Process Safety Change Management System ensures that the design for the change includes all necessary details, is evaluated in terms of all necessary engineering and administrative disciplines, is technically correct, that the change is processed in all relevant documents and related systems and included in programs and software, and that all planned actions are completed before the change is commissioned or put into use.

After the changes have been implemented in the field, Pre-Commissioning Safety Review (PSSR) processes are coordinated prior to commissioning to ensure that all necessary checks have been performed and that all issues that can be checked for commissioning up to that point are safe. Multidisciplinary on-site review and evaluation of checklists are carried out. In the Refinery and Petrochemicals Business Unit, necessary activities are carried out in accordance with the "Safety Systems Bypass Procedure" and approval processes are implemented in the fields for all activities where process protection systems/safety systems are disabled or partially changed in terms of effectiveness level due to compulsory reasons such as equipment or component failure, protective/preventive maintenance activities, etc.

Work on the digitalization of safety systems by-pass applications continued in 2021 and the digital system is planned to be commissioned in 2022.

Operational HAZOP (Hazard and Operability Analysis) & LOPA (Layers of Protection Analysis) studies are continued in Refinery and Petrochemical facilities, and HAZOP & LOPA studies are carried out for many projects developed within the scope of optimization and flexibility in production for Refinery and for projects developed with the need for integration and modernization for Petrochemicals. In order to investigate the root causes of process safety incidents occurring in the facilities and to determine the actions to be taken to prevent similar incidents, incident classification is carried out in line with SOCAR Türkiye procedures, incident investigation teams are established and incident investigation processes are coordinated. Standards are prepared and developed in line with the principles of the SAFFE OHS-E Management System and industry best practices, and trainings are organized for their implementation.

In order to raise employee awareness and develop a safety culture, Toolbox Talks and bulletins were prepared on Process Safety issues, and trainings were organized on different topics within the scope of the Process Safety Management System. Within the scope of Process Safety Management (PSM), key performance indicators were monitored and reported on a monthly basis. In line with the goal of spreading the OHS-E culture in Refinery, Petrochemical and Storage facilities and ensuring safe and sustainable continuity of operations, periodic field inspections (PFI) were organized to identify the points open to improvement in the field and to ensure that corrective/preventive actions are taken by the relevant disciplines. In addition to all these activities, the Company monitored the requirements for compliance with legal regulations and carried out related activities.

Employee Demographics

Number of Employees by Age Group

Number of newly hired employees (according to age, gender, region)

	<25	25-34	35-49	50+	TOTAL
SOCAR Türkiye Corporate Headquarters	4	175	214	37	430
Petkim	7	644	1,587	147	2,385
STAR Refinery	16	532	414	119	1,081
SOCAR Storage	1	25	45	6	77
SOCAR Terminal	4	130	156	7	297
BURSAGAZ	9	97	159	14	279
KAYSERİGAZ	3	57	76	4	140
SOCAR Enerji Ticaret	0	18	40	3	61
Enervis	20	147	114	19	300
STDGYAŞ	1	30	45	2	78
SETAŞ	0	13	10	0	23
TOTAL	65	1,868	2,860	358	5,151

Table 11: Number of Employees by Age Group

Total Female Employee Turnover Rate

	(%)	<30	30-50	50+	<30	30-50	50+	<30	30-50	50+
SOCAR Türkiye Corporate Headquarters	0	2	0	2	8	1		2	3	0
Petkim	0	0	0	0	0	0		0	0	0
STAR Refinery	0	0	0	0	1	0		0	1	0
SOCAR Storage	0	0	0	0	1	0		0	1	0
SOCAR Terminal	0	0	0	0	0	0		1	1	0
BURSAGAZ	0	4	0	1	2	0		1	1	0
KAYSERİGAZ	1	1	0	1	1	0		1	0	0
SOCAR Enerji Ticaret	0	0	0	0	1	0		0	5	0
Enervis	0	0	0	1	0	0		1	0	0
STDGYAŞ	0	0	0	0	1	0		3	6	0
SETAŞ	0	0	0	0	0	0		4	0	0

2019

2020

2021

Table 12: Total Female Employee Turnover Rate

Total Male Employee Turnover Rate

	(%)	<30	30-50	50+	<30	30-50	50+	<30	30-50	50+
SOCAR Türkiye Corporate Headquarters	0	3	2	2	13	6		0	8	3
Petkim	0	1	4	0	1	3		0	2	0
STAR Refinery	0	1	1	1	1	2		0	4	0
SOCAR Storage	0	3	1	0	1	3		1	0	3
SOCAR Terminal	2	3	0	2	3	0		1	4	1
BURSAGAZ	1	2	1	2	2	2		1	2	0
KAYSERİGAZ	0	1	1	1	1	0		1	6	1
SOCAR Enerji Ticaret	2	12	5	1	4	6		0	8	0
Enervis	0	0	0	8	7	0		7	4	0
STDGYAŞ	0	0	0	0	0	0		0	3	1
SETAŞ	0	0	0	0	0	0		0	4	0

2019

2020

2021

Table 13: Total Male Employee Turnover Rate

With more than 5,100 direct employees, SOCAR Türkiye, together with its contractors, has created employment for more than 10,000 people. 70% of the employees are in the hourly wage category, while 30% are in the monthly wage category. As of 2021, a total of 3,896 employees work at SOCAR Türkiye Corporate Headquarters, Petkim and STAR Refinery operations. Due to operating in sectors where experience and professional experience come to the fore, the proportion of employees working under indefinite-term employment contracts reaches 99.8%.

Human Rights and Gender Equality

Human Rights

SOCAR Türkiye and its group companies create the necessary environment and conditions by supporting their employees to exercise their internationally recognized human rights, especially those set forth in the United Nations Universal Declaration of Human Rights and ILO Conventions, in line with the rules of business ethics and the Human Resources Policy established in the capacity of a responsible employer. With its Human Rights Policy and Guiding Principles ("Policy"), SOCAR Türkiye aims to spread an inclusive and fair approach that protects and promotes human rights within the organization, in production processes, supply chains and among all other stakeholders.

One of the prerequisites for a creative and productive human resource is to enable employees to reach their potential and ensure a variety of ideas. For this reason, it is important to ensure equality of opportunity in the entire human resources process, starting from the recruitment stage, and to prevent any kind of discrimination that may pose a risk to diversity. In this context, SOCAR Türkiye does not treat anyone differently on the basis of language, religion, race, ethnic origin, sexual orientation or any of the qualities that an individual is born with, and does not subject anyone to any behavior that can be considered discrimination. Under no circumstances does it condone pressure, intimidation and similar mobbing of employees and takes the necessary measures to prevent such behaviors.

Gender Equality

Recognizing that social development and progress in business life can only be achieved through women's empowerment, SOCAR Türkiye works to strengthen the role of women in business life, with a goal beyond increasing women's employment.

In this context, in 2021, SOCAR Türkiye became a signatory to the UN Women's Empowerment Principles (WEPs), a joint initiative of UN Women and the UN Global Compact. By supporting these principles, the Company pays attention to diversity, equality and inclusion in its business processes and aims to provide its employees with a work environment where they feel good and safe, open to development, participatory and respectful of human rights. SOCAR Türkiye considers creating a fair, inclusive and diversity-accepting work life and building business cultures with an equality perspective as a brand goal. In this context, SOCAR Türkiye emphasizes the importance of equality, diversity and inclusion within the scope of gender equality and human rights, and continues to work with the awareness that diversity is its wealth.

SOCAR Türkiye believes that each employee is valuable with his/her color, preference, thoughts, talents and beliefs, and aims to spread a culture that respects the diversity and contribution of all employees and accepts diversity. In this context, with the "**Our Energy is Diversity**" project, the Company creates a more equal, fair, transparent and participatory work environment by offering better working conditions to employees with different identities and characteristics, and by including its employees in the process through its diversity and inclusion-based policies and Women's Empowerment Principles.

Our Commitments

- **Equal Participation at Work**
- **Prevention of Discrimination, Harassment and Violence**
- **Responsible Engagement with Society and Stakeholders**
- **Diversity and Equal Opportunity**
- **Supporting Women's Development in Business Life**
- **Open and Transparent Communication**

Our Values

- We recognize that for our company to succeed, we need people with different ideas, different strengths and different experiences. We pursue different perspectives and encourage everyone to collaborate and contribute to achieve common goals.
- We consider diversity, equality and inclusion as a whole, and we see enabling an inclusive and equitable work culture as one of our core values.
- We hold ourselves accountable to our shareholders, customers, colleagues and society and lead the way in creating a safe, reliable and sustainable environment wherever we operate.
- We create a work environment where all our field and office employees feel valued, safe, respected and accepted.
- We consider the attitudes of not only our employees but also our stakeholders towards diversity, equality and inclusion as a determining factor in our decision-making processes.
- We implement new policies and practices to increase cultural diversity and inclusion in our work environments.
- We recognize the impact of our actions and decisions on the people, environment and society around us. We take ownership of our work, act responsibly and care about results.
- We act with an approach to protecting and promoting human rights when determining our working order and internal procedures.
- We gain trust with our honesty, integrity and ethical practices. Working with standards based on high business ethics is at the core of our business.
- We know that diversity, equality and inclusion contribute to the development of our business and we sincerely believe that they will make SOCAR Türkiye even more successful.

Number of Employees by Gender

	MALE		FEMALE		
SOCAR Türkiye Corporate Headquarters	220	277	268	131	179
Petkim	2,389	2,235	2,216	204	147
STAR Refinery	1,004	1,004	998	110	81
SOCAR Storage	71	68	72	6	6
SOCAR Terminal	281	272	268	27	27
BURSAGAZ	196	212	221	68	71
KAYSERİGAZ	117	126	117	30	29
SOCAR Enerji Ticaret	46	43	40	19	24
Enervis	300	317	269	30	32
STDGYAŞ	0	27	42	0	19
SETAŞ	25	15	14	13	5
TOTAL	4,649	4,596	4,525	638	620
	2019	2020	2021	2019	2020
					2021

Table 15: Number of Employees by Age, Gender and Region

Women and men are undoubtedly equal members of society, and SOCAR Türkiye adopts the principle that every individual enjoys all rights equally. On the other hand, access to employment and working in an environment worthy of human dignity are among the fundamental human rights. It is the responsibility of every employer to support women's employment by removing obstacles to the exercise of these rights. With this philosophy, SOCAR Türkiye aims to improve women's employment and implements various facilitating practices in this direction. For example, women employees are given special place in the high potential employee selection program and promotion policies.

Although women's employment in refining and petrochemical business lines has improved from past to present, it is still quite low compared to other sectors.

Protective regulations for high-risk work processes, especially in the category of hourly wage workers, are also very effective in this situation. In the analysis conducted in refining and petrochemical business units, the potential distribution of female and male employees was determined as 22-78%. When Petkim and STAR Refinery are included, SOCAR Türkiye's female employment rate was 7.6% in 2016, decreased to 7.3% in 2020 and increased to 12.3% in 2021.

When senior and mid-level management is evaluated, the rate of female managers increased from 5.8% in 2020 to 9.3% in 2021. As the pandemic risks decrease in the coming periods, it is aimed to increase this ratio again and to work towards the potential values identified.

Executive Data

	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE
Over 50 Years	99	15	83	18	57	9
Between 30-50 Years	368	81	311	67	382	92
Under 30	1	0	9	2	5	1
Total (By gender)	468	96	403	87	444	102
Total		564		490		546

2019 2020 2021

Table 16: Administrator Data

SOCAR Türkiye adopts equal pay for equal work in its remuneration practices. The same remuneration policy is applied to male and female employees performing the same job. Differences between employee remuneration can only be based on seniority and performance. When the average of the 2021 median salary levels of male and female employees working at the same level in SOCAR Türkiye at each level is compared, it is seen that male employees are only 4% higher than female employees. (Executive Committee members are excluded.)

One of the main reasons for female employees' disengagement from employment is the fact that it is difficult to remain employed after having children. For this reason, SOCAR Türkiye implements practices that facilitate working life during pregnancy and facilitate the return of female employees to employment in the postpartum period. One of the most preferred practices in this context is the nursery support service.

51 employees in 2020 and 74 employees in 2021 benefited from the nursery support service. 14 of the 15 female employees who returned from maternity leave in 2019 continued to work at SOCAR Türkiye in 2020. In 2020, 13 female employees went on maternity leave, 12 employees returned to work in 2020 and 1 employee returned to work in 2021. In 2021, 37 female employees took maternity leave, 28 employees started work in 2021 and 7 employees started work in 2022. In addition, maternity coverage is included in private health insurance packages to support female employees.

Maternity Leave Data

	MALE	FEMALE	TOTAL
Total Number of Employees entitled to Maternity Leave			
2021	53	37	90

Table 17: Total Number of Employees Entitled to Maternity Leave

	MALE	FEMALE	Total
Total Number of Employees on Maternity Leave			
2021	53	37	90

Table 20: Total Number of Employees on Maternity Leave

	MALE	FEMALE	TOTAL
Number of Employees Returning to Work after Maternity Leave			
2021	53	37	90

Table 18: Number of Employees Returning to Work After Maternity Leave

	MALE	FEMALE	Total
Number of Employees Who Returned to Work and Still Working After 12 Months			
2021	52	18	70

Table 21: Number of Employees Who Returned to Work and Still Working After 12 Months

	MALE	FEMALE	TOTAL
Rate of Return to Work Among Those Taking Maternity Leave			
2021	100	97,70	98,85

Table 19: Return to Work Rate Among Those Taking Maternity Leave (%)

	MALE	FEMALE	Total
Retention Rate Among Those Taking Maternity Leave (%)			
2021	91,60	89,16	90,38

Table 22: Retention Rate Among Those Taking Maternity Leave (%)

In the coming period, SOCAR Türkiye prioritizes improving performance in the field of gender equality and inclusion. In order to improve women's employment, SOCAR Türkiye prioritizes developing a specific business strategy and establishing a working group responsible for this issue. By developing a salary tracking application, it will be ensured that the variances of the average salaries of men and women at the same level are monitored and necessary actions are taken. On the other hand, it is also aimed to establish a female leader development program where mentoring, training and development practices are designed specifically for female employees.

SOCAR Türkiye supports the rights of its employees to organize, unionize and make collective agreements, and prepares the necessary environment for employees to exercise these rights in a healthy manner and to establish union relations efficiently. The Company aims to establish healthy, beneficial and close relations with trade unions representing its employees. In this context, including Petkim and STAR Refinery employees, a total of 2,452 people, corresponding to 69% of SOCAR Türkiye's total workforce, work under collective bargaining agreements. The rate of collective bargaining agreements reaches 97.4% among hourly paid field employees.



Employee Experience

The Human Resources platform, which offers a single employee experience for SOCAR Türkiye employees, was implemented in line with the best practices in the world.

With this application, in addition to basic functions such as rights, recruitment, job preparation, performance management, training management, career management, which are common to all employees within SOCAR Türkiye, additional fun and educational functions, where success based on corporate values is appreciated and rewarded, are put into use, aiming to increase employee loyalty.

The interface of the career page, where working conditions in the SOCAR Group are detailed and applications for open positions are received, is being renewed by using up-to-date technologies. The agile working model is supported by enabling SOCAR Türkiye employees to use the applications they use in the mobile environment.

Employee Development

The Talent Management System, which was created to be implemented throughout SOCAR Türkiye and group companies, aims to help employees reach their potential, support their personal and career development and transform their talents into high performance. With the Talent Management System, the future potential of employees is first assessed and then efforts are made to develop talents that make a difference. The Talent Management practice aims to evaluate employees with a systematic approach, plan their careers accordingly, and develop and retain success-oriented employees who will maximize the company's performance by creating a solid backup network.

An important aspect of employee development activities is employee training, which is also an important complement to the Talent Management System.

In addition to improving the professional knowledge and experience of employees, employee trainings also play an important role in expanding their personal visions and gaining different perspectives. Accordingly, SOCAR Türkiye organizes professional and personal development trainings that will improve the skills of employees, in addition to training programs arising from sectoral requirements and legal obligations. The training needs of employees are determined as a result of analyzes conducted by taking into account performance evaluation results, corporate and individual goals, career plans, sectoral developments and individual demands. In line with the identified needs, employees participate in internal training programs and professional training programs provided by external experts and academicians.

All new employees are provided with various orientation trainings ranging from online learning programs to field visits in order to accelerate their adaptation to the company and corporate culture.

	Number of Employees Attending Trainings	Total Training Hours (Employee*Hour)	Number of Employees Attending Trainings	Total Training Hours (Employee*Hour)
Türkiye	3,746	154,044	6,319	200,307
Abroad	0	0	0	0
Total	3,746	154,044	6,319	200,307
		2020		2021

Table 23: Number of Employees Attending Trainings by Year and Regions/Total Training Hours (person*hour)

Employee Trainings (Average)

Average hours of training provided per employee.

	MALE	FEMALE		
SOCAR Türkiye Corporate Headquarters	39.86	42.57	45.89	85.2
Petkim	34.24	40.15	50.73	52
STAR Refinery	89.35	48.62	71.31	108
SOCAR Storage	52.73	55.32	90.13	64
SOCAR Terminal	16	12	47	20
BURSAGAZ	14	19	22	17
KAYSERİGAZ	0	31.2	25.26	0
SOCAR Enerji Ticaret	37.93	16.4	36.08	29
Enervis	1	17.3	8.96	1
STDGYAŞ	0	2.56	15.74	0
SETAŞ	25	0.67	5.61	13
	2019	2020	2021	2019
				2020
				2021

Table 24: Employee Trainings (average)

*Monthly paid employees operating within SOCAR Türkiye, Petkim and STAR Refinery are also included in the training figures.

With the opening of new investment areas in all our facilities, we provide an increase in local employment. At the same time, we conduct local recruitment, university-industry collaborations and internship programs in our recruitment processes.

COVID-19 Coronavirus Pandemic Measures

In 2021, after the COVID-19 Coronavirus outbreak, which affected the whole world in 2020, first emerged in all SOCAR Türkiye operations was also managed with seriousness

A detailed risk assessment to ensure uninterrupted operations throughout SOCAR Türkiye, to protect employee health and to increase preventive measures appropriate to the situation analysis was conducted and protection measures were taken according to the specific needs of business units with the "Business Continuity Planning" created.

The Pandemic Management Plan continued to be implemented to minimize the impact of the pandemic. In this context, case algorithms and monitoring methods were implemented, working models were revised, necessary equipment and warning signs were placed in work areas, and the distribution of personal protective equipment to employees continued. In parallel, information bulletins and training programs continued to be provided to company and contractor company employees as part of awareness raising activities. On the other hand, within the scope of the measures taken, the audits carried out by the Türk Standards Institute in business units within the scope of the "Safe Production Certificate" continued. In order to reduce the risk of contamination, remote working opportunities have been created for company employees as far as their duties allow.

An Employee Support Line was established to enable employees to receive support in case of difficulties they may experience during the pandemic. By the end of 2021, 2,347 calls were made to the Employee Support Line. Throughout the process, legal compliance was maintained by following COVID-19 circulars issued by the Presidency of the Republic of Türkiye and relevant ministries. Publications of the World Health Organization and other reliable sources were also followed, and additional protection measures were implemented throughout the course of the pandemic. By evaluating the daily, weekly and monthly statistics, which were seriously monitored throughout the company, the established in the

proactive measures decided through the efficient work of the COVID-19 Commissions established in the business units were successfully reflected on the field. In this way, business continuity throughout the company was maintained throughout the period without any disruption.

COVID-19 Support Program

With the announcement of the COVID-19 pandemic, an integrated crisis management system was put into effect. Under the leadership of the senior management and under the management of the Human Resources, Occupational Health and Safety, Communication and Public Relations departments, internal and external awareness communication and social responsibility activities specific to the COVID-19 period were carried out. In this context, while taking part in social projects by cooperating with public institutions, non-governmental organizations and local governments in line with the needs, we have also implemented awareness-raising actions and internal communication activities planned specifically for this period to ensure the health and safety of our employees. Within the scope of collaborations, it is aimed to contribute to the sustainability of social and economic life throughout the country, especially in the regions where SOCAR Türkiye operates. During the COVID-19 pandemic, SOCAR Türkiye and its group companies Petkim and STAR Refinery supported efforts to provide urgent solutions to social needs in Izmir Aliağa, the region of operation, with their donations. Petkim is providing large-scale support to public institutions and local governments in the region with its donations, which mainly consist of protective health supplies. As a result, protective consumables such as surgical masks, disposable aprons, N95 type masks, overalls, gloves and disinfectants were provided to health institutions and public institutions, as well as those who were restricted from going out on the streets. In addition, material support was provided for the production of masks, transparent face shields, aprons and laryngoscopes and face shields. In addition to material support, Petkim made a donation to renovate the emergency building of Aliağa State Hospital, which plays an important role in the fight against COVID-19 in Aliağa.

Emergency Management

Throughout SOCAR Türkiye operations, systems and tools have been established to respond to an emergency situation that may occur 24/7. Risk assessments carried out in the light of international standards and local legal regulations are transformed into emergency response plans by experts. These plans are prepared according to risk-based operational needs as well as the requirements of national and international standards.

There are many systems and tools for the management of emergencies in the Aliağa Private Industrial Zone area of influence. For example, active warning systems have been established throughout the peninsula, and emergency management systems have been established to immediately detect emergencies and safely shut down all facilities. In addition to facilities, there are systems and marine vessels to ensure coastal safety. A trained and professional team that can serve 24/7 to respond to possible pollution on the sea surface, as well as marine pollution response materials, equipment and marine vessels with the capacity to serve the entire peninsula are available. In addition, an emergency response vessel equipped with special equipment to sweep the sea surface has also been deployed. The response ship is kept ready to intervene at any time against any problem that may occur in the region. The fact that the emergency response ship is constantly in the region and has the capability to be activated in a short time is of great importance for the region against a possible marine pollution. Communication systems have also been established to ensure fast and direct communication with relevant business units, emergency personnel, neighboring organizations, key local stakeholders, and public institutions responsible for emergencies such as AFAD and fire brigades.

Another dimension of preparedness to prevent emergencies before they occur and to take control of the situation with minimum impact when they do occur is the preparation of employees for such situations. Regular drills are conducted for this purpose.

Earthquake Preparedness

Türkⁱe is located in a geography with active faults, most of which are prone to earthquakes. The regions where SOCAR Türkiye operates are also subject to earthquake risks. For this reason, during the investment decision process, an engineering design was adopted in accordance with the most severe earthquake scenarios that may occur in the region. In addition to being ready for an earthquake that may occur in terms of asset design, necessary measures have been taken in many areas such as the earthquake preparedness of the people on site, the management of indirect situations that may occur due to earthquakes, rapid response to earthquake-related leaks and leakages, and the formation of teams to respond to search and rescue needs that may arise in and around the facility. Training programs include activities to be carried out before, during and after earthquakes and earthquake evacuation practices in emergency drill scenarios. In addition, discussions were held with AFAD and disaster search and rescue training was planned for the entire Facility Security Search and Rescue team for 2022.

Disaster Preparedness and Social Support Program

Within the scope of disaster preparedness and social support programs and projects at Petkim and STAR Refinery, earthquake and fire drills were conducted at Petkim Primary School and Gazi Primary School in Aliağa Lodgings area, and drills were conducted with neighboring organizations. In addition, procedures have been shared with AFAD within the scope of disaster preparedness and necessary coordination is ensured, and Oil and Natural Gas Sector Emergency and Crisis Management coordination meetings are held at the Ministry of Energy and Natural Resources. As part of our earthquake risk preparedness efforts, drills were conducted and a training module on earthquakes and emergencies was uploaded to the E Learning system to raise social awareness among employees.

Within the scope of our disaster preparedness and social support programs and projects within BURSAGAZ and KAYSERIGAZ; Bursagaz Search and Rescue Team was established within Bursagaz with emergency procedure and follow-up. Emergency Teams received AFAD Disaster Awareness Training.

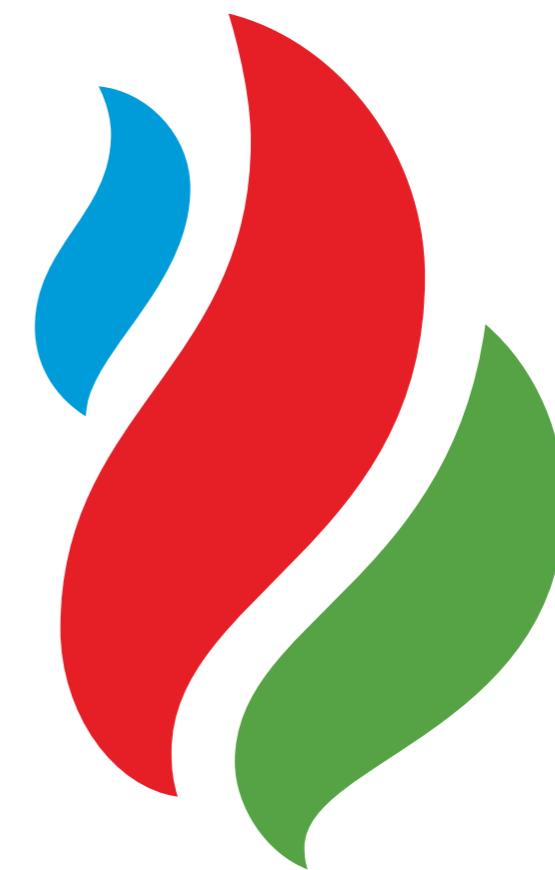
Disaster and Emergency Training

	2017	2018	2019	2020	2021
Total Training Hours (person x hours)					
SOCAR Türkiye Corporate Headquarters	64	396	37	13	0
Petkim	2,043	2,278	1,999	3,638	3,768
STAR Refinery	0	273	5,819	1,636	2,202
BURSAGAZ	-	-	-	-	392
KAYSERİGAZ	-	-	-	-	341
Total Training Hours (person x hours)	2,106.50	2,947	7,855	5,286	6,702

	2017	2018	2019	2020	2021
Training Participation Number (Person)					
SOCAR Türkiye Corporate Headquarters	127	459	36	14	17
Petkim	1,384	1,680	980	2,203	4,189
STAR Refinery	0	182	1,033	987	2,584
BURSAGAZ	-	-	-	-	249
KAYSERİGAZ	-	-	-	-	304
Total Training Hours (person)	1,511	2,321	2,049	3,204	7,343

	2017	2018	2019	2020	2021
Emergency Drills					
SOCAR Türkiye Corporate Headquarters	0	0	2	0	0
Petkim	14	14	11	9	83
STAR Refinery	0	2	12	14	48
BURSAGAZ	-	-	-	-	59
KAYSERİGAZ	-	-	-	-	94
Total Training Hours (person x hours)	14	16	25	23	284

Table 25: Disaster and Emergency Trainings



**Stronger.
Together.**



Climate and Environment Focused Operation

SOCAR Türkiye prioritizes managing the environmental impacts of its operations due to its main business lines. In addition to energy consumption and greenhouse gas emissions, water consumption, wastewater and waste management, and air quality due to the business processes carried out, special attention is paid to combating climate change, which is the common result of many of these impacts.

Environmental Management

Over the last 20 years, the oil and gas industry has made great progress in its approach to environmental management, with the goal of addressing the changing global context and emerging challenges. Damage to biodiversity, inefficient use of resources, degradation of ecosystem services and climate change are putting intense pressure on the natural environment. Environmental legislation is becoming increasingly stringent to meet these pressures and expectations at all levels, while investors, customers and civil society groups are increasingly demanding change.

Environmental impacts arising from the activities of SOCAR Türkiye and its group companies are an integral part of risk management. Environmental management processes were evaluated with various tools developed within the scope of risk management, and the necessary steps to minimize the impacts were identified and implemented by the relevant units. In this context, environmental management was restructured at SOCAR Türkiye Aliağa Private Industrial Zone in line with the integration process initiated at the end of 2019 and realized in 2020. Environmental processes started to be managed by the Environmental Directorate under the roof of the OHS-E Directorate. In its activities carried out within the scope of its environmental management approach, SOCAR Türkiye aims to prevent environmental pollution, reduce waste and emissions generated by production activities, efficiency in resource consumption and minimize the impact of company activities on biodiversity.

With this attitude, necessary actions are taken to limit and control environmental impacts. Regarding the processes for monitoring the quality of the receiving environment, regular measurement, monitoring and analysis are carried out at Petkim, STAR Refinery, SOCAR Storage, SOCAR Terminal, BURSAGAZ and KAYSERİGAZ in order to ensure compliance with both local legislation and international standards.

Emissions from the stack, which are subject to continuous monitoring obligations, are monitored by continuous emission measurement systems, and wastewater discharged after treatment is monitored by continuous wastewater monitoring systems, and the recorded data is sent to the Republic of Türkiye Ministry of Environment, Urbanization and Climate Change via online platforms. Level 2 and Level 3 Quality Assurance System measurements and Annual Validity Tests are carried out for continuous emission measurement systems. In addition, measurements called Integrated Comparison tests are carried out every 3 months within the scope of continuous wastewater monitoring systems and analysis results are shared with official institutions. Furthermore, Scope 1 and Scope 2 greenhouse gas emissions are monitored, reported and greenhouse gas emission reports, which are verified by verification bodies and finalized, are shared with competent authorities.

Within the scope of environmental management activities, a waste management system has been established in line with the zero-waste principle, and all processes from the source of waste generation to temporary storage and delivery to the final waste processing facility are managed using waste management software. Moreover, regular internal audits are conducted and environmental incidents and accidents are monitored through the incident reporting process. Within the scope of improving emergency preparedness and response capability, land spill response and marine pollution response drills are conducted.

Before the loading and unloading activities to be carried out on the ships docking at STAR Refinery piers, the ships are surrounded by barriers and pre-booming process is applied. In this way, any possible spillage that may arise from the ships is limited by the barriers and its spread to the receiving environment is prevented. In case there is a need to refuel the ships docked at SOCAR Terminal piers, it is aimed to limit possible spills by surrounding the ship with barriers (pre-booming) before the process. Online trainings, applied field trainings, OPRC/HNS Trainings, on-the-job safety talks and bulletins are prepared and published at regular intervals in order to increase environmental awareness and consciousness.

Environmental dimension-impact and risk assessment studies conducted within the scope of ISO 14001 Environmental Management System cover all processes and are periodically reviewed and actions are planned by making revisions in cases requiring updates. The probability and impacts of the dimensions are evaluated and risk scores are reduced to an acceptable level with the current measures taken. The activities carried out are based on SOCAR Türkiye's corporate risk logic. All activities carried out are subject to external audits and the frequency of audits. Environmental monitoring activities, audits by official institutions (Ministry, Provincial Directorates), audits by Certification Bodies (Bureau Veritas, etc.) and audits by lender consultants (RINA) regarding environmental management are carried out within the scope of all companies.

On the other hand, as a subsidiary of SOCAR Türkiye, SOCAR Energy Trade, which is the energy solution partner of its customers by selling both natural gas and electricity, started to sell green energy certificates produced from renewable energy sources and certified with the International Renewable Energy Certificate (I-REC) in order to reduce and neutralize the carbon footprint of end consumers. In this context, SOCAR Türkiye Energy Trade sold "green energy" to 10% of our current electricity end-consumer portfolio, i.e. 231 million kilowatt-hours, in 2021 with the sale of green energy certified with the International Renewable Energy Certificate (I-REC). With the vision of being the energy solution partner of its customers, SOCAR Energy Trade offers management of renewable energy power plants, carbon neutralization service Gold Standard and (Verified Carbon Standard) VCS carbon certification and I-REC project development services. In 2022, SOCAR Energy Trade will add brokerage services for solar energy system installations to the product range offered to its customers. In addition to these, SOCAR Türkiye also provides services for the plant management of Renewable Energy Power Plants. At Petkim and STAR Refinery, SOCAR Türkiye monitors, reports and calculates greenhouse gas emissions on a monthly basis to minimize greenhouse gas and pollutant air emissions and improve air quality, and aims to reduce CO2 emissions by 1% per year between 2021 and 2025. While Petkim is transitioning to the use of renewable energy sources in electricity generation with the wind power plant, ISO 14064-1 carbon footprint calculation studies and preparations for Green Port Certification are ongoing at the SOCAR Terminal. During the studies carried out in this context, it was recorded that 53.28% of the equipment in the terminal operates with electric power in terms of total power. Monthly electricity, fuel and water consumption is monitored and fluctuations between months are analyzed.

As a result, if there is a problem, action is taken to solve it. With the Climate Change and Green Deal, SOCAR Türkiye and its stakeholders decided that action should be taken in the shortest term to reduce greenhouse gas emissions. In addition, SOCAR Türkiye offers low-carbon solutions while combating the emissions it produces. While the importance of renewable energy for a sustainable future is increasing day by day, SOCAR Türkiye, Türkiye's largest direct foreign investor, will supply the electricity used at a total of 22 consumption points, including 4 management buildings, 10 stations, 2 warehouses and storage facilities, 3 emergency response unit offices, 2 valve groups and 1 archive building of its headquarters and subsidiaries in Vadi İstanbul, from 'green energy'.

Environmental impacts arising from the activities of SOCAR Türkiye and group companies are managed in a centralized and integrated manner. Within the framework of SOCAR Türkiye OHS-E Policy, management of environmental impacts is carried out within the framework of SOCAR Türkiye SAFE OHS-E Management System, as in OHS issues.

On the other hand, the processes are designed in accordance with ISO 14001 Environmental Management System Standard. Green Port Management System Certification is followed in port operation processes. Compliance with management systems is verified and certified through independent audits conducted every year.

Afforestation and Protection of Forests

STAR Refinery, in cooperation with the Aegean Forest Foundation, carried out afforestation works in Aliağa Güzelhisar Village, which was used as a dump site during the construction period. Within the scope of the afforestation work, a total of 14,150 saplings, including 13,150 Blue and Black Cypress and 1,000 Acacia, were planted and annual maintenance activities are monitored. Afforestation work was carried out in the old forest area within Petkim and 260,000 saplings were planted within the scope of the project. Regular maintenance work is carried out on afforestation areas and the results are reported.

Climate Change

Based on the Carbon Disclosure Project (CDP) Report, the oil and gas industry is among the most intensive emissions, with oil and gas production and use making up more than half of global greenhouse gas emissions associated with energy consumption. Emissions from the use of products by companies in the oil and gas sector account for 90% of global carbon emissions. Oil and gas companies are in the critical process of adapting their business models to accommodate the low-carbon energy transition. The Paris Climate Agreement, followed by the Intergovernmental Panel on Climate Change's recent report detailing the impact of global warming of 1.5°C versus 2°C, provides a clear framework for oil and gas companies' carbon emissions and energy use.

To reach the 1.5°C limit for warming above pre-industrial levels, the median Intergovernmental Panel on Climate Change (IPCC) scenario requires net zero global emissions by 2050. SOCAR Türkiye supports the goal of limiting the global average temperature increase to 1.5°C, which is the objective of the Paris Climate Agreement, and increasing the development and adaptation capability with low greenhouse gas emissions in order to build climate resilience against the negative effects of climate change.

Considering the sectors in which SOCAR Türkiye and its group companies operate, their production operations and product qualities, the activities carried out to reduce greenhouse gas emissions that cause climate change are of critical importance. The results of international regulations such as the Paris Climate Agreement and increasing expectations in parallel with social awareness increase the importance of the issue. In this context, the issue of climate change is systematically managed by SOCAR Türkiye in the context of the risks and opportunities it creates in various disciplines. All developments regarding climate change and reduction of greenhouse gas emissions carried out on national and international platforms are closely monitored, and strategic plans are prepared on the subject.

At SOCAR Türkiye, the management of impacts that may cause climate change is managed directly as part of the business strategy in two different dimensions. The first dimension is the management of risks arising from climate change impacts. As an integrated energy company, the two main focuses of the efforts aimed at reducing greenhouse gas emissions arising from the activities of SOCAR Türkiye are to reduce energy

consumption and to obtain energy needs from renewable sources as much as possible. Energy efficiency and digitalization value creation efforts, which are carried out continuously under the "The Value is Myself Platform", where all improvements are centrally managed, are the prominent efforts in this regard. In accordance with regulatory obligations, greenhouse gas emissions are monitored, reported and finalized greenhouse gas emission reports, which are verified by verification bodies, are shared with the competent authorities. In line with its long-term sustainability goals, SOCAR Türkiye has created a monitoring plan within the Refinery and Petrochemical Integration by classifying the scope 1 greenhouse gas emission sources according to their categories. In line with the prepared plan, greenhouse gas emission sources are calculated on a monthly basis and the percentage of compliance with the targets set is monitored.

Greenhouse Gas Emissions

(Ton CO ₂ e)	2019	2020	2021
SCOPE 1			
STAR Refinery	2,006,906.00	1,914,451.00	2,010,170.00
PETKİM	1,737,560.00	1,877,965.00	1,881,861.00
SOCAR Terminal	-	-	2,287.38
BURSAGAZ	1,134.10	1,083.96	1,665.36
KAYSERİGAZ	-	1,477.43	1,448.37
SCOPE 2			
STAR Refinery	306,516.62	432,560.57	428,453.97
PETKİM	112,022.69	84,744.58	101,690.33
SOCAR Terminal	-	-	4,283.92
BURSAGAZ	734	504.36	662.55
KAYSERİGAZ	-	252	265.26

Table 27: Greenhouse Gas Emissions (scope 1+scope 2)

The activities carried out to reduce greenhouse gas and pollutant air emissions and improve air quality are as follows; monthly calculation of target-based greenhouse gas emissions and reduction of greenhouse gas emissions by 1%, calculation of Scope 2 emissions, use of renewable energy sources in electricity generation (Petkim WPP), Continuous Emission Measurement Systems (CEMS) monitoring and related fuel optimization, publication of 'Procedure for Monitoring and Reporting Greenhouse Gas Emissions', publication of 'Continuous Emission Measurement Systems Procedure'. These include publishing the 'Air and Environmental Noise Management Procedure', examining source-based emission data and creating emission reduction programs, publishing a toolbox on "Let's Reduce Our Carbon Footprint", a toolbox on "Management and Monitoring of VOC Emissions", a bulletin on "Management and Monitoring of Air Emissions" within the scope of training and awareness raising activities, and adding impact analysis on greenhouse gas emissions, air emissions and energy consumption to the investment evaluation system.

In the management of climate change risks, efforts to monitor and calculate greenhouse gas emissions arising from operations gain importance as much as energy efficiency. In this context, greenhouse gas emissions are calculated in compliance with legal regulations, verified by institutions authorized by the Ministry and reported annually to the Ministry of Environment, Urbanization and Climate Change. The second dimension of activities to combat climate change consists of efforts to utilize areas of opportunity. Although the expectations set forth within the framework of the European Green Deal launched by the EU, especially during the reporting period, pose risks for emission-intensive industries and product groups, various opportunities arise for companies that carry out R&D and planning studies in the field of practices that will reduce this intensity. The petrochemical industry in particular stands out in this regard. It is possible to obtain products with added value by capturing the carbon dioxide generated as a result of production activities, storing it and then using it in production processes. The projects initiated by the SOCAR Türkiye R&D and Innovation Center with this goal are promising to provide the company with a competitive advantage in the medium term.

In this context, SOCAR Türkiye aims to expand its portfolio in petrochemicals and gas distribution in line with SOCAR's strategy. The company's forward-looking strategy includes developing the circular economy by making recycling investments on the chemicals side, following developments in the field of hydrogen, which is seen as the energy of the future on the gas and energy side, and investing in green and blue hydrogen.

Market Readiness Project in Türkiye (PMR) with the World Bank: Future Emissions Trading System (ETS)

The Government of the Republic of Türkiye, with the support of the World Bank, launched the Market Readiness Project in Türkiye (PMR) with the aim of replicating in Türkiye an example of emission trading systems that are effectively used to combat climate change. The project seeks to develop a market-based instrument as a facilitator for reducing greenhouse gas emissions. SOCAR Türkiye also takes part in workshops attended by representatives and experts from various sectors.

The Value is Myself Program

On the Value is Myself Platform, which was created for the centralized management of improvement efforts across SOCAR Türkiye as part of the integration project, projects that concern more than one group company are evaluated in the integration category, while projects that can be solved with methodologies such as lean 6 sigma, kaizen, flexible management are evaluated and monitored in the value creation category. In 2021, more than 100 projects were presented in different fields, resulting in an annual added value of over 260 million dollars.

Energy Management

Today, breakthroughs in the oil and gas industry are shaped by rapidly evolving technology, market dynamics, energy policies and social trends. Global energy trends, the Sustainable Development Goals and the implications of the Paris Climate Agreement on the oil and gas sector are driving changing energy management systems. In line with the Paris Climate Agreement, a scenario is drawn in which greenhouse gas emissions, which are the result of activities in the oil and gas sector, are taken under control and a net zero target is achieved in order to ensure energy security while meeting the goals of universal energy access and cleaner air. Energy management policies are being developed at the national institutional level towards net zero emissions in the oil and gas sector and reference is made to clean energy generation and renewable energy. SOCAR Türkiye places low-carbon energy, high efficiency and emission reduction at the center of our energy management system. SOCAR develops projects and provides services for energy management in line with the demands of its customers and the content of its existing portfolio. In this direction, it acts with an approach towards becoming the energy solution partner of its customers. In its strategy for the services it offers as a business concept, SOCAR has adopted the strategy of being the energy solution partner of its customers with a portfolio of various products and services such as electricity, green electricity, and services for products that will provide electricity generation.

SOCAR Türkiye implements energy management system policies in its group companies. The Energy Management Directorate of Petkim, STAR Refinery and SOCAR Storage units aims to manage energy consumption across the Peninsula (STAR Refinery/Petkim/SOCAR Storage) and to make the necessary improvements for long-term, sustainable and safe production paths in the refinery with minimum energy costs.

BURSAGAZ, KAYSERİGAZ and ENERVİS units are based on reducing carbon emissions, efficiency and optimization efforts in line with SOCAR Corporate Strategic Targets. The aforementioned organizations have a strategy for the efficient use of energy needed for continuous and safe natural gas distribution without deviating from the budgets determined in the current situation. In the energy management strategy of BURSAGAZ and KAYSERİGAZ, it is aimed to review the energy management system by setting goals and targets for energy management and to increase the performance of the system by continuous improvement. In addition, risks within the company are determined together with the relevant units according to the SWOT analysis method and the Energy Risk and Opportunity Assessment table risk matrix. In the event of a new risk or opportunity that may affect energy performance, assessments are repeated and the process is reviewed annually. Depending on the internal and external audits to which you are subject regarding energy management, internal and external audits are conducted within the scope of the ISO 50001 Energy Management System.

Petkim and STAR Refinery are subject to external audits once a year by an authorized audit firm. In addition, internal audits are conducted at least once a year by the Business Processes and Quality Management Systems Department. At BURSAGAZ, at least 1 internal and 1 external audit is conducted every year. In addition, flue gas emission tests of RMS boilers, one of the highest energy consumption areas of BURSAGAZ and KAYSERİGAZ, are conducted every two years and reported to the Republic of Türkiye Ministry of Environment, Urbanization and Climate Change.

Optimal procurement of the energy needs of Group companies and customers is realized through the "Supply Planning Function" detailed in the SOCAR Türkiye Procedure. The main purpose of establishing this function is to enable customers and group companies to generate and manage their own electricity through the service provided for the installation of solar energy systems. In addition, Group companies and customers are provided with the market management of their own electricity generation through the Power Plant Management and Market Operations service.

SOCAR Türkiye Energy Consumption (GJ)

	2019 (GJ)	2020	2021
Natural Gas	31,176,827.6	29,540,089.2	31,260,544.50
Ethylene	18,310,687.2	17,801,786.6	17,397,214.99
Ventilation Gas	43,262.25	32,835.25	40,088.10
Hydrogen	543,387.01	568,117.58	323,308.15
Steam Received from Outside the Corporation	1,115,492.2	2,581,045.1	2,126,417.04
Stationary Combustion-Diesel	16,056.12	12,179.66	9,194.09
Total Electricity Consumed	2,316,831.6	2,219,918.5	2,294,495.03
Flammable Gas	10,719,078.2	16,879,289.0	16,443,021.02
General Total	64,241,622.4	69,635,261.1	69,894,282.91

Table 28: SOCAR Türkiye Total Energy Consumption

Renewable Energy (GJ) (GJ)

	2019	2020	2021
Petkim WPP Renewable Energy Consumption	448,578	600,733	598,182

Table 29: Renewable Energy

In order to support the power systems in SOCAR Türkiye Aliağa Private Industrial Zone and reduce greenhouse gas emissions from production by obtaining electricity from renewable sources, Petkim WPP operates a wind power plant with an installed capacity of 51 MW and a production license of 38 MW. The wind power plant, which has rapidly increased its added value over the years, generated a total of 598,182 GJ of energy in 2021.

Energy Efficient Projects 2021

Some of the projects carried out in 2021 contributed to environmental and climate performance, saving 32 thousand MW of electricity, 29 thousand tons of natural gas, 9 thousand tons of fuel gas, 386 thousand tons of steam and 87 thousand tons of water. Some of the projects that ensured energy efficiency are Air Compressor Operation in No-Load Mode in the Air Production Unit, Hydrogen Balance Optimization, Reduction of LS Vapor Used in the Air Heaters of the Steam Production Plant and Chemical Cleaning of the Ethylene F101H Furnace.

No-Load Mode Operation of Air Compressor in STAR Refinery Air Generation Unit

There are 3 compressors producing the instrument air of the refinery in the STAR Refinery instrument air production area. Two of these compressors are powered by electric motor and one of them is a turbine powered by steam.

Under normal conditions, one of these compressors is always kept in reserve. When the refinery instrument air consumption values for 2020 were analyzed with the project team, it was determined that the air produced by the two compressors was above the refinery requirement and the excess was discharged through the atmospheric safety valve. In this context, one of the electric compressors was switched to no-load mode to save electricity. The difference between unloaded and loaded mode is that the electric compressor operating in unloaded mode is in circuit and does not pump any air into the system. In loaded mode, the compressor presses air into the refinery. By switching the electric compressor operating in loaded mode to unloaded mode, 5,154 MW of energy savings were achieved in 2021. In addition, 4 thousand tons of CO₂ emissions were saved with this energy gain.

STAR Refinery Hydrogen Balance Optimization

During refinery unit shutdowns, the excess hydrogen produced was burned and sent to the atmosphere due to the minimum limit (45%) where the hydrogen production unit capacity could drop. A hydrogen balance optimization project was carried out to prevent losses due to hydrogen combustion. Within the scope of the project; optimizations were made in the hydrogen production unit and the hydrogen could be sent to the purge gas. In addition to this, the opening of the control valve on the feed gas drum in the HCU (Hydrocracking) unit was increased and the hydrogen sent to the fuel gas CCR (Continuous Catalyst Regeneration) unit feed was continuously controlled. As a result of these efforts, 942 tons of hydrogen savings and 6 thousand tons of CO₂ emission savings were achieved.

Reduction of LS Vapor Used in Air Heaters of Petkim Steam Generation Plant

Combustion air entering Petkim boilers is heated in air heaters and economizers to reduce the energy consumption of the boilers. The hot gases coming out of the boilers are discharged to the atmosphere through boiler chimneys. In order to prevent sulfuric acid corrosion in the chimneys, the flue temperatures must be operated above the dew point.

The adjustment of the flue gas temperature is made with the LS consumed in the air heaters. Under normal conditions, when natural gas is burned in boilers, the flue gas temperature is around 120oC. In June-October, when the weather is hot, the flue temperature goes at 120oC and the LS vapor in the air heaters is completely turned off. Within the scope of the project, it was tried to reduce the amount of LS in the air heaters during the winter months. The flue gas dew point was calculated and the amount of LS was optimized to go slightly higher than this point. With this savings in LS vapor, 2,195 tons of natural gas was saved per year. However, due to the LS gain, the amount of XHS produced in the boilers decreased and less electricity was generated in the turbines generating electricity. Electricity is purchased from the grid to make up the difference. The project contributes to sustainability by reducing 6 thousand tons of carbon emissions per year.

Chemical Cleaning of Petkim Ethylene F101H Furnace

Chemical cleaning of the convection section of ethylene furnaces increases heat transfer and saves energy. A chemical cleaning was carried out in the F101H furnace at the ethylene plant and after the work, the amount of fuel gas consumed was reduced and 694 tons of CO₂ was reduced.

Energy Efficient 2022 Projects

Recovery of Vapor Discharged to the Atmosphere in STAR Refinery Sulfur Production Unit

The heat exchanger in the chimney of the sulfur production unit heats the fed HP steam. This superheated steam is then fed to the refinery HP header. Due to coil cracks in the heat exchanger, LP steam has started to be passed through it to prevent the cracks from growing. LP steam, which was passed through 34 tons per hour, could not be fed to the HP header and was discharged into the atmosphere.

Within the scope of the project, it was tried to bring this vapor discharged to the atmosphere into the refinery steam balance. Tie-in points were taken so that the steam given to the atmosphere could be fed to the LP and MP headers. By returning 34 tons of LP steam per hour to the refinery steam system, 50 thousand tons of CO₂ emissions will be reduced annually.

Water Management

Water consumption is considered as one of the significant environmental impacts resulting from SOCAR Türkiye's operations. Refinery and petrochemical production processes involve intensive water consumption. Therefore, efficient use of water in operations comes to the forefront. In this context, water consumption amounts are monitored and recorded.

Water Withdrawal by Source

	2019 (m ³)	2020	2021
Surface waters	31,025,611	27,727,598	26,884,077
Groundwater	0	0	0.088
Water from the mains	0	0	7,447
Rain harvest	0	85,999	4,279
Other, please specify:	9,458	37,250	14,594
Total Water Withdrawal	31,035,069	27,850,847	26,906,123

Table 30: Water Withdrawal by Source

Fuel Gas Optimization in STAR Refinery HCU Flares

In order to reduce the amount of fuel gas sent to the flare in the HCU unit, PCV setpoints were reduced from 0.5 kg/cm²g to 0.4 kg/cm²g. As a result, the volumetric flow rate was gained and 130 Nm³ of fuel gas per hour was saved and thousand tons of CO₂ emissions will be reduced annually.

Petkim Aliağa Energy Optimization

Petkim transfers a portion of the HS it produces to STAR Refinery in order to increase reliability and benefit from each other's different cost structures. With the modeling that dynamically changes the amount of HS transferred from Petkim to STAR Refinery, total steam and electricity cost will be minimized and energy optimization will be achieved on the basis of electricity market prices, natural gas prices and boiler efficiencies.

Bluff Optimization

In order to ensure that the SiO₂ and conductivity parameters of the boiler feed water used in steam production are at the desired values, a portion of the boiler feed water is directed to the Waste Water Treatment Plant. With this blowdown process to the Treatment Plant, both the load of the plant is increased and natural resources are consumed.

The blowdown rate for generating steam in the equipment varies between 1-10%. With the work carried out in HCU, CCR, SRU/TGT U, HGU and Steam Generation units, blowdown amounts were optimized and SiO₂ and conductivity parameters were adjusted to the desired values. Within the scope of the project, 7.4 tons of LS steam per hour, 8.5 tons of boiler feed water per hour and 0.07 tons of natural gas per hour will be saved, resulting in annual savings of 1.9 million USD. The project will also reduce CO₂ emissions by 11 ktons per year and save 68 ktons of water.

Waste Management

The basic principle of the waste management system established within the scope of SOCAR Türkiye operations is to take measures to reduce waste before it is generated, to separate it at its source and to recycle it.

All wastes generated within this scope are sorted according to their codes, collected in appropriate equipment and sent to licensed waste processing facilities. There are investment studies to efficiently separate the structure accumulated in the waste removal unit pool with an equipment called Oil Skimmer."

SOCAR Türkiye is implementing a single waste management process in the Aliağa Private Industrial Zone."Waste Management Service", "Supply of Waste Stations" and "Waste Transportation & Handling" service procurement contracts have been signed within the scope of waste management software.

In addition, all processes from the source of waste generation to temporary storage and transportation to the final waste processing facility are managed using waste management software.

Our waste minimization, recycling and circular economy implementation projects include important topics such as zero waste management system practices and monitoring Waste KPI data, sending biodegradable waste to composting facilities.

Within the scope of our waste management activities, a total of 1,681,039 TL was invested in projects such as the Waste Incineration Unit.

Hazardous Waste

	2019		2020		2021	
SOCAR Türkiye Corporate Headquarters	Hazardous Waste	Non-Hazardous Waste	Hazardous Waste	Non-Hazardous Waste	Hazardous Waste	Non-Hazardous Waste
Recycling	-	-	-	-	-	-
Reuse	-	-	-	-	-	-
Disposed	-	-	-	-	0.00003	-
Not Disposed	0.0102	-	0.0102	-	0.0199	0.0085
Combustion	-	-	-	-	-	-
TOTAL	0.0102		0.0102		0.0284	

PETKİM	Hazardous Waste	Non-Hazardous Waste	Hazardous Waste	Non-Hazardous Waste	Hazardous Waste	Non-Hazardous Waste
Recycling	-	-	19.2	7.24	11.26	7.66
Reuse	-	-	-	-	-	-
Disposed	-	-	5.27	13.48	1.73	15.75
Not Disposed	-	-	-	-	-	-
Combustion	-	-	3.94	-	0.56	-
TOTAL	0		49.13		36.96	

STAR Refinery	Hazardous Waste	Non-Hazardous Waste	Hazardous Waste	Non-Hazardous Waste	Hazardous Waste	Non-Hazardous Waste
Recycling	-	-	9.54	0.46	20.97	0.85
Reuse	-	-	-	-	-	-
Disposed	-	-	-	0.19	0.09	0.1
Not Disposed	-	-	2.93	0.07	2.43	1.47
Combustion	-	-	-	-	-	-
TOTAL	0		13.19		25.91	

SOCAR Storage	Hazardous Waste	Non-Hazardous Waste	Hazardous Waste	Non-Hazardous Waste	Hazardous Waste	Non-Hazardous Waste
Recycling	-	-	0.29	0.008	0.188	0.038
Reuse	-	-	-	-	-	-
Disposed	-	-	-	-	-	-
Not Disposed	-	-	-	-	-	-
Combustion	-	-	-	-	-	-
TOTAL	0		0.3		0.23	

SOCAR Terminal	2019		2020		2021	
	Hazardous Waste	Non-Hazardous Waste	Hazardous Waste	Non-Hazardous Waste	Hazardous Waste	Non-Hazardous Waste
Recycling	-	-	0.00658	0.094312	0.01288	0.08
Reuse	-	-	0.013907	-	0.020889	-
Disposed	-	-	0.00124	0.228025	0.001447	0.236552
Not Disposed	-	-	-	-	-	-
Combustion	-	-	-	-	0.000007	-
TOTAL	0		0.344064		0.351778	
BURSAGAZ	Hazardous Waste	Non-Hazardous Waste	Hazardous Waste	Non-Hazardous Waste	Hazardous Waste	Non-Hazardous Waste
Recycling	0.000677	0.089764	0.0022	0.0578	0.00068	0.079112
Reuse	-	-	0.0014	0.01206	-	-
Disposed	-	-	-	-	-	0.00132
Not Disposed	-	-	0.0008	-	-	-
Combustion	0.000682	-	0.004924	-	0.0021	-
TOTAL	0.0911		0.0791		0.0832	
KAYSERİGAZ	Hazardous Waste	Non-Hazardous Waste	Hazardous Waste	Non-Hazardous Waste	Hazardous Waste	Non-Hazardous Waste
Recycling	-	-	-	0.00067	-	0.00136
Reuse	-	-	-	-	-	-
Disposed	-	-	-	-	-	-
Not Disposed	-	-	0.665	-	0.3	-
Combustion	-	-	-	-	-	-
TOTAL	0		0.66567		0.30136	

Zero Waste

Waste generated in SOCAR Türkiye operations is evaluated within the scope of the "waste management hierarchy" consisting of prevention, reuse, reduction, recycling and disposal steps. With the Zero Waste Management System established in this context, it is aimed to prevent or minimize waste generation, prioritize reuse, prevent waste, use resources efficiently, collect waste separately at source, reduce the amount of waste to be disposed of by recycling, and protect the environment, human health and all resources in production, consumption and service processes.

During the stages of establishing the Zero Waste Management System, a working group was formed and focal points were identified, a planning was made by determining the current situation, needs were identified and a timetable was created, training and awareness-raising activities were planned and carried out. In 2021, the basic level Zero Waste Management System certificate was obtained for STAR, Petkim and SOCAR Storage. At SOCAR Terminal, preparations for the Zero Waste Project were completed in 2021 and the Basic Level Certification was completed in January. Zero Waste Implementation studies are ongoing to move to the next level.

Air Emissions

Monitoring and control of all emission sources at refinery and petrochemical facilities is important for the protection of air quality in the region. Annual flue gas emission measurements and air quality measurements are carried out by accredited laboratories at Petkim and STAR Refinery, while emission measurements are carried out every two years at SOCAR Storage.

In accordance with the legislation published by the Republic of Türkiye Ministry of Environment, Urbanization and Climate Change, there are Continuous Emission Measurement Systems (CEMS) in the chimneys. With the Continuous Emission Measurement Systems, the compliance of the emissions arising from the activities of the units with the limit values determined according to the legislation is monitored online by the official institution.

Petkim and STAR Refinery Refinery Air Emissions per Charge

(tons/year)

Petkim			STAR Refinery			
	2019	2020	2019	2020	2021	
NOx	3,919.58	1,830.82	2,227.16	521.45	671.12	597.86
SOx	1,106.10	1,341.19	1,040.96	179.51	259.39	299.13
Particulate Matter	26.22	25.2	10.64	22.32	5.37	5.2

Table 33: Air Emissions

Waste Water Management

The second important dimension of water consumption is waste water management processes. The water used in SOCAR Türkiye operations is treated in wastewater treatment plants and discharged after being reduced to the receiving environment discharge limits. In order to control the discharge quality, Continuous Waste Water Monitoring Systems (CWMS) have been installed at waste water discharge points.

With this system, the compliance of the discharged wastewater with the legislative limits is continuously monitored and discharged in accordance with these limits. In 2021, within the scope of SOCAR Terminal, separate meters were installed on the fire water line, the line to the administrative buildings and the water lines to the fields in order to determine the cause of the usage amount fluctuations in the network water.

Treated Water Discharge

(m³)

	2019	2020	2021
Treated Water Discharge	8,299,073.64	11,308,249.68	10,482,348.95
Total Water Discharge	8,299,073.64	11,308,249.68	10,482,348.95

Table 34: Treated Water Discharge

* Calculated according to Petkim, STAR Refinery and SOCAR Storage data.

Environmental Projects

With its OHS-E vision, SOCAR Türkiye aims to create a culture that adopts the industry's best environmental practices in order to achieve excellence in occupational health, safety and environment. For this reason, the best industry OHS-E practices are implemented throughout the operations, ensuring that high-risk activities are carried out safely.

Coastal facility risk assessment and emergency response plan is commonized across the peninsula:

Within the scope of Emergency Response to Marine Pollution within the scope of SOCAR Türkiye Refinery and Petrochemicals Business Unit, emergency response service to marine pollution is received to be ready on site 24 hours a day, 7 days a week. In addition, there are emergency response equipment in number and capacity to intervene in all 1st, 2nd and 3rd level spills. Marine Pollution response activities have been jointly carried out within the scope of SOCAR Aliaga subsidiaries, and a Joint Coastal Facility Risk Assessment and Emergency Response Plan has been prepared and approved by the official institution.

Intervention in marine pollution capacity building investments:

- STAR Sea Discharge Point Improvement Project
- Pier 4 and Discharge to the Sea Lighting Project
- Marine type barrier supply project

Waste management system Development Projects:

- Waste Incinerator General Improvement Investments
- STAR Temporary Storage Area investment

Wastewater Treatment Plant Capacity investments

- Balancing for Petkim with a volume of 15,000 m³ pool project

Biodiversity

Biodiversity refers to the variety of life on Earth, including the diversity of ecosystems, genes and species, and the ecological practices that support them. There is growing concern about the loss of biodiversity and ecosystem services in many parts of the world, including impacts associated with human health and economic development.

Natural diversity in ecosystems provides human society with essential economic benefits and services such as food, clothing, shelter, fuel and medicine, as well as ecological, recreational, cultural and aesthetic values, and therefore plays an important role in sustainable development. As an integrated energy company, SOCAR Türkiye recognizes the importance of protecting biodiversity and believes that this is an important shared responsibility.

At SOCAR Türkiye, we are committed to protecting the communities and natural environments where we live and work. We recognize that our activities may impact local ecosystems and biodiversity. We work to avoid and mitigate the significant impacts of our projects and operations on sensitive species, habitats and ecosystems.

This means that we:

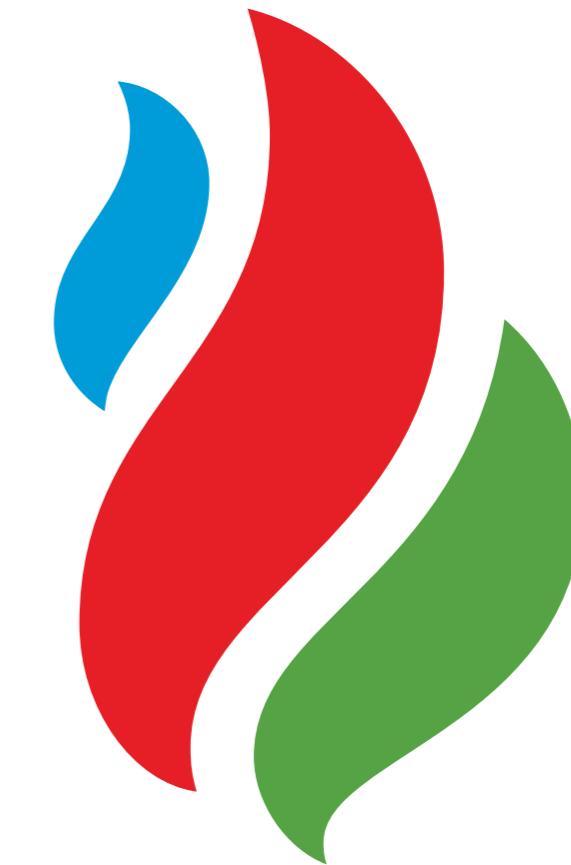
Integrate biodiversity into our business decision-making and management.

Assess and manage our performance in relation to biodiversity through SAFE OHS-E Management System principles, expectations, relevant operational processes and business processes.

Carefully decide whether and how we will work in a protected or sensitive area, taking into account the specific conditions of the site and operation.

Operate in such areas where we are confident that we will comply with all legal requirements and have put in place protective operational practices, with government legal authorization where necessary.

Conduct a biodiversity assessment and develop a biodiversity action plan at all our sites where there are significant potential impacts on local ecosystems and biodiversity



**Stronger.
Together.**



Corporate Social Responsibility

SOCAR Türkiye supports social development in the regions where it operates and nationally through its corporate responsibility projects, donations and sponsorships, as well as the employment and economic value it creates with its activities and products.

SOCAR Türkiye carries out corporate responsibility projects that support social and economic development with a multifaceted approach and create added value for society. Long-term efforts in this direction aim to support development in the fields of environment, sports, education and culture and arts.

SOCAR Türkiye and its subsidiaries use various channels to create a participatory, timely, transparent and two-way communication environment with its external stakeholders as well as its employees. Stakeholder communication systematics are also shaped in many of the management systems followed. While it is essential to strengthen communication with all stakeholders, customers, shareholders and investors, public institutions and local governments, trade unions, suppliers and contractors, professional associations and non-governmental organizations, financial institutions, educational institutions, media organizations and local communities are among the stakeholders with whom communication is frequently established. In communication with stakeholders, tools such as the corporate website, communication forms, social media, e-mail communications, annual reports, sustainability reports, press releases and meetings, announcements, mutual meetings, social projects and sponsorships, external trainings, meetings and presentations, corporate films, research and surveys are used systematically. Ethical whistleblowing channels, suggestion and complaint systems are accessible to employees as well as contractors, suppliers and the local community. Complaints and suggestions communicated through these channels are carefully handled and finalized.

SOCAR Türkiye and its subsidiaries generate benefits by developing studies/projects aimed at providing urgent solutions to social needs and local contributions in the provinces of Izmir, Istanbul, Bursa and Kayseri, which are their operating

regions. In addition to the employment and economic values created by its activities and products, as well as the corporate responsibility projects, donations and sponsorship activities it carries out, SOCAR Türkiye launched the SOCAR Volunteers platform, a volunteering program initiated by the will of SOCAR Türkiye employees in 2021. SOCAR Volunteers was established in order to realize projects and collaborations that provide social benefits to the society with the voluntary participation and support of employees, in addition to the economic contributions provided to our country. Designed as a volunteering movement in which employees embrace their own suggestions and ideas, SOCAR Volunteers contributes to the development of employees' awareness of social responsibility and their internalization by actively participating in the work. With the voluntary participation of nearly 500 SOCAR employees, SOCAR Volunteers, which consists of 6 teams in total, including education, environment, health, sports, animal protection and social issues, aims to create value in society by implementing social responsibility activities and projects. Defining itself as a "community" that contributes to social awareness and development based on the "United Nations (UN) Sustainable Development Goals (SDGs)", SOCAR Volunteers' vision and roadmap are integrated into the UN's global efforts through the adoption of 17 sustainable goals.

Supporting economic development with a multifaceted approach and carrying out corporate responsibility projects that create added value for society, SOCAR Türkiye aims to support development in the fields of environment, sports, education, health and disaster/emergency in its long-term efforts. In order to contribute to the sustainability of social and economic life throughout the country, especially in the regions where it operates, it carried out cooperation activities and supported efforts to provide urgent solutions to social needs by donating a total of 1,302,427 in 2021.

The amounts of support provided by focus topics are presented below:

Health	214,257 dollar
Education	51,097 dollar
Environment	408,893 dollar
Disaster / Emergency	100,596 dollar
Social	527,585 dollar
Total	1,302,427 dollar

SOCAR Volunteers

SOCAR Volunteers received 2 awards in 2021 within the scope of social responsibility projects beneficial to society.



Leadership in Community Service and Corporate Social Responsibility Award

Communitas Awards, which recognizes social responsibility projects that benefit society on a global scale, awarded the Company in the category of "Leadership in Community Service and Corporate Social Responsibility" for its comprehensive approach touching all segments of society.



Outstanding Community Initiative Award

Global Business Excellence Awards in this year's "Outstanding Community Initiative" category, has crowned its successful efforts for the second time in a year.



Education Projects

Schools of Haydar Aliyev and Petkim

SOCAR Türkiye's corporate social responsibility activities include the Heydar Aliyev Schools and Petkim Schools, which provide education to nearly 10 thousand students in Izmir, Adana, Kars, Ankara and Kocaeli.

Ankara Haydar Aliyev Middle School

Number of students: 1,800
Start year of education: 2006

Adana - Haydar Aliyev Technical and Industrial Vocational High School

Number of students: 480
Start year of education: 2008

Kocaeli - Körfez Petkim Middle School

Number of students: 1,587
Start year of education: 1980

Izmir - Petrokimya Elementary

Number of students: 560
Start year of education: 1999

İzmir - Aliağa Haydar Aliyev Technical and Industrial Vocational High School

Number of students: 720
Start year of education: 2012

Kocaeli Petkim Elementary School

Number of students: 1,500
Start year of education: 2013

İzmir - Aliağa Petkim Elementary

Number of students: 590
Start year of education: 1980

İzmir - Karşıyaka Petkim Latife Hanım Elementary

Number of students: 918
Start year of education: 2001

Kars Haydar Aliyev Industrial Vocational High School

Number of students: 720
Start year of education: 2015

İzmir Azerbaycan Halk Cumhuriyeti 100. Yıl School

Number of students: 898
Start year of education: 2019

İzmir - Aliağa Gazi Elementary

Number of students: 224
Start year of education: 1985

Environmental Projects

SOCAR Türkiye carries out activities in line with increasing environmental assets, proper use of natural resources and minimizing environmental pollution. In this context, various green area development and restoration projects are carried out in Ankara and Istanbul in the name of Haydar Aliyev, the founding leader of Azerbaijan.

The restoration, cleaning and similar maintenance works of the Haydar Aliyev Memorial Forests, which were realized in previous periods, continued in 2019, 2020 and 2021. In this context, maintenance works were carried out at Sarıyer Haydar Aliyev Park in Sarıyer, Istanbul, covering an area of 4,540 m², Haydar Aliyev Friendship Park in Fulya, Istanbul, and Ankara Haydar Aliyev Park in Yenimahalle, Ankara, covering an area of 97,400 m². On the other hand, restoration, furnishing and maintenance works were carried out in the Haydar Aliyev Memorial Forest established in Ankara in 2010, and 670 new pine tree saplings were planted by identifying lands without trees. In the forest, soil plowing, watering, pruning, spraying and fertilizing of trees, as well as general cleaning of the area are ongoing.

SOCAR Türkiye donated saplings to the OGEMVAK Foundation for the Development of Forestry and Supporting Services for Fighting Forest Fires, which enabled the establishment of the Azerbaijan Karabağ Memorial Forest in the Aliağa Samurlu region on behalf of the heroic Karabağ martyrs. In this context, contributions continued to be made to sapling planting and memorial forest maintenance activities in 2021.

2021 Education Projects

CSR Project Name	Goals and plans for the project (funds to be allocated, number of people to be reached, (possible) business partnerships, etc.)
Ege University CESIM Business Acumen Simulation (business simulation) Project	Within the scope of the project initiated at Ege University to bring business simulation to a public university, two business simulations in the fields of "Global Competition" and "Marketing" were purchased from CESIM Global, an international software company, for two classes (60 students) in the Department of Business Administration and donated to the university. Within the scope of these simulations; students are divided into teams and manage companies in a virtual environment. The companies compete against each other through the software, thus supporting the development of students' decision-making skills and the use of their theoretical knowledge.
Engineer Girls of Türkiye Project	In 2021, scholarships, internship opportunities, mentoring and online English training support were provided to 10 female students studying chemical engineering within the scope of the Limak Foundation Engineer Girls of Türkiye Project, which aims for women to play a greater role in social life and to be represented under equal conditions in all sectors.
Game-Based Sustainability Workshop Project	In 2021, the United Nations Sustainable Development Goals "Play-Based Sustainability Workshop" was organized for 50 disadvantaged children receiving educational support from the Aegean Contemporary Education Foundation.
Aid and Donations under Covid-19	Laptop and disinfectant donations were made to Aliağa Şehit Sebahattin Karakaplan Middle School.
Support for the Harbor Workers Education and Solidarity Foundation	Donations were made to support the educational activities of the Harbor Workers Education and Solidarity Foundation.
EÇEV support project for mothers and children in need on Mother's Day	In addition to the working mothers of SOCAR Türkiye, mothers of children in need who receive support from the Aegean Contemporary Education Foundation (EÇEV) also participated in the workshops on the importance of mothers in raising children, gender awareness and being a working mother on Mother's Day. Within the scope of the cooperation with EÇEV, SOCAR Volunteers met the tablet needs of 10 students on Mother's Day so that mothers in need and their children could access quality education.

2021 Environmental Projects

CSR Project Name	Goals and plans for the project (funds to be allocated, number of people to be reached, (possible) partnerships, etc.)
Let's Heal Our Wounds Together Campaign	In 2021, saplings were donated to TEMA and OGEM Foundation within the scope of forest fires.
Let's Heal Our Wounds Together Campaign	Financial support was provided to the Disaster Coordination Centers of Milas and Marmaris Municipalities within the scope of combating forest fires, and protective equipment and first aid kits consisting entirely of non-flammable materials were delivered to the relevant units in Marmaris and Milas to support the response to fires in different regions of our country.
Making Huts from Waste Materials for Stray Animals	SOCAR Volunteers Animal Protection Projects Team built huts for stray animals from waste materials. With the project realized by the 15-member team of SOCAR Volunteers in Bursa, 7 huts made of waste pallets, crates and office materials were placed in different locations in Bursa and food was left for stray animals.
Marmara Sea Clean-up	SOCAR Volunteers BURSAGAZ Environmental Team carried out mucilage and underwater cleaning in Mudanya district of Bursa on July 1st Maritime and Cabotage Day. During the deep-sea cleaning activities carried out by a team of 16 people, cleaning was carried out on the water surface with the mucilage intervention vehicle together with Bursa Metropolitan Municipality officials.
Donation Campaign to HAYTAP for the Treatment of Animals Damaged by Forest Fires	An aid campaign was organized under the umbrella of SOCAR Volunteers to help animals affected by the fires in many parts of our country. Donations were collected with the support of SOCAR Türkiye employees in the Aid Campaign for HAYTAP, the Animal Rights Federation.
Let's Do It Türkiye Event Main Sponsorship within the scope of World Cleanliness Day, Volunteer Participation in the Event	On September 18, World Cleanliness Day, SOCAR Türkiye became the main sponsor of Let's Do It Türkiye, which carries out successful efforts to raise awareness on waste management. SOCAR Volunteers contributed to raising awareness by supporting environmental cleaning in İstanbul, Izmir, Bursa and Kayseri locations during the event, which was organized simultaneously with the participation of millions of people in 180 countries with the motto "A World without Waste".

Sport Projects

Petkimspor Sports Schools

Under the framework of the Petkimspor Club in Aliağa, where SOCAR Türkiye operates, SOCAR Türkiye provides free sports opportunities to all children between the ages of 6 and 12 in order to contribute to their sporting development. The aim is to create an environment where children in Aliağa can be happy by establishing free and open basketball, volleyball, soccer and tennis clubs. Petkim, a SOCAR Türkiye group company, continues its social responsibility projects for Aliağa with its belief in the unifying power of sports.

Boccia National Team Official Sponsorship

Petkim has been supporting the Boccia National Team for the past few years in order to raise awareness about the participation of disabled individuals in social life and to contribute to the further development of Boccia disabled sports in Türkiye. With the 2-year agreement signed with the Türkiye Sports Federation for the Physically Disabled covering the years 2019-2020, Petkim strengthened its support for the Boccia National Team and became the official sponsor of the team. Petkim recognizes the integration of severely disabled individuals into the social life of society as one of the most important indicators of the level of development of countries. Due to the pandemic, competitions and tournaments had to be suspended in 2020 and 2021.

2021 Sports Projects

CSR Project Name	Goals and plans for the project (funds to be allocated, number of people to be reached, (possible) partnerships, etc.)
Support for Bursa Stars Basketball Club	In 2018-2021, donations were made to support the activities of the U14 girls' and U14 boys' basketball teams within the Bursa Stars Basketball Club.
Support for Physically Disabled Basketball	Between 2019-2021, a donation was made to Kayseri Melikgazi Municipality in 2021 to support the activities of the wheelchair basketball team under the roof of Kayseri Erciyes Physically Disabled Sports Club Association.
Petkimspor Sports Schools	During the 2019-2021 winter seasons, a total of 225 students, 75 girls in volleyball and 150 boys in basketball, were provided access to sports training under the Petkimspor Sports Schools.
Petkimspor Sports Schools	SOCAR Volunteers supported "Cerebral Palsy Türkiye" at the 43rd Istanbul Marathon held on Sunday, November 7, 2021. The donations collected by the volunteers who ran in the event, which consisted of two different courses as 15K and 42K, were used for the treatment of babies with Cerebral Palsy between the ages of 0-3 who are at risk of becoming disabled.

Social Projects

In 2021, SOCAR Türkiye continued its social projects that support social development with a multifaceted approach, create added value for the society in addition to contributing to the national economy, and aim to create direct or indirect value for the needs of the society in emergency and crisis situations.

2021 Social Projects

CSR Project Name	Goals and plans for the project (funds to be allocated, number of people to be reached, (possible) partnerships, etc.)
Izmir Flood Relief Project	A donation was made to the Izmir Provincial Directorate of National Education for the Teachers Working in the Izmir Vefa Social Support Group and Support for Schools Affected by the Flood Disaster
Aid and Donations under Covid-19	Aliağa District Health Directorate was allocated 3 vehicles with drivers due to COVID-19.
Aliağa State Hospital Aid Project	By making a donation for the installation of VRF air conditioning systems in the annex buildings of Aliağa State Hospital and the ventilation installation of the annex building, citizens living in Aliağa district have benefited by facilitating access to health systems.
Aid Campaign for Izmir Metropolitan Municipality Regarding Earthquake	SOCAR Türkiye and its group companies made in-kind and cash donations to support citizens affected by the Izmir earthquake. Donations were made to the Izmir Metropolitan Municipality's earthquake support efforts to provide rental assistance to citizens who lost their homes, and the total aid reached 1 million TL with the donations made in 2020.
1 kilo Food for 1 Photo Campaign	Within the scope of October 4, World Animal Protection Day, a total of 500 kilos of food was purchased, 1 kilo of food for each SOCAR volunteer who shared a photo with the hashtag #1Fotograf1KiloMama on our digital internal communication platform called "Social SOHO". In the organization held with the participation of employees as SOCAR Volunteers, the food purchased was used to feed stray animals living in kennels placed in Bursa Uludağ and Kayseri.



2021 Performance Data

Operational Performance

	2019	2020	2021	
Petkim				
Capacity Utilization Rate	%	97	88	93
Capacity	Million Tons	3.6	3.6	3.6
Total Production	Million Tons	3.4	3.1	3.3
Productivity				
Ethylene-Propylene Efficiency	%		47.0	
PX, OX and Benzene Efficiency	%		44.1	
STAR Rafineri				
Capacity Utilization Rate	%	83	98.9	101
Capacity	Million Tons	10.6	10.6	11
Total Production	Million Tons	7	10.3	10.6
Productivity				
Nelson Refinery Complexity			9.2	
White Product Efficiency	%		84	
Medium Distillate and Reformate Efficiency	%		70.9	

Economic Value Created

Economic and Administrative Performance*	(Million TL)	2019	2020	2021
Total Sales		31,364	31,315	89,446
Total Assets		46,839	56,155	119,374
Total Net Assets		22,102	24,410	45,173
Incentives and funds received from the government and various international organizations*		2,593	788	3,617

SOCAR Türkiye Tax Payments

(TL)	2019	2020	2021
TOTAL	4,178,52,923	11,428,227,520	6,244,251,315

Supply Rate

(%)	2019	2020	2021
Local	80	83	79
International	20	17	21

Number of Active Suppliers

(Adet)	2019	2020	2021
SOCAR Türkiye	316	338	327
Petkim	1,363	1,179	955
STAR Refinery	640	684	543
SOCAR Terminal	295	278	350
SOCAR Storage	160	177	158

Employee Demographics

Number of Employees by Age Group (2021)

	<25	25-34	35-49	50+	TOTAL
SOCAR Türkiye Corporate Headquarters	4	175	214	37	430
Petkim	7	644	1,587	147	2,385
STAR Refinery	16	532	414	119	1,081
SOCAR Storage	1	25	45	6	77
SOCAR Terminal	4	130	156	7	297
BURSAGAZ	9	97	159	14	279
KAYSERİGAZ	3	57	76	4	140
SOCAR Enerji Ticaret	0	18	40	3	61
Enervis	20	147	114	19	300
STDGYAŞ	1	30	45	2	78
SETAŞ	0	13	10	0	23
TOTAL	65	1,868	2,860	358	5,151

Total Female Employee Turnover Rate

	<30			30-50			50+				<30			30-50			50+				<30			30-50			50+		
SOCAR Türkiye Corporate Headquarters	0	2	0	2	8	1	2	3	0		0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0		
Petkim	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0		
STAR Refinery	0	0	0	0	1	0	0	1	0		0	1	0	0	0	0	0	0	0		0	0	0	0	0	0	0		
SOCAR Storage	0	0	0	0	1	0	0	0	1		0	1	0	0	0	0	0	0	0		0	0	0	0	0	0	0		
SOCAR Terminal	0	0	0	0	0	0	0	1	0		1	1	0	0	0	0	0	0	0		1	1	0	0	0	0	0		
BURSAGAZ	0	4	0	1	2	0	1	1	0		1	1	0	0	0	0	0	0	0		1	1	0	0	0	0	0		
KAYSERİGAZ	1	1	0	1	1	0	1	0	0		1	0	0	0	0	0	0	0	0		1	0	0	0	0	0	0		
SOCAR Enerji Ticaret	0	0	0	0	1	0	0	0	5		0	5	0	0	0	0	0	0	0		0	5	0	0	0	0	0		
Enervis	0	0	0	1	0	0	1	0	0		1	0	0	0	0	0	0	0	0		1	0	0	0	0	0	0		
STDGYAŞ	0	0	0	0	1	0	3	6	0		3	6	0	0	0	0	0	0	0		0	6	0	0	0	0	0		
SETAŞ	0	0	0	0	0	0	4	0	0		4	0	0	0	0	0	0	0	0		0	4	0	0	0	0	0		
	2019			2020			2021																						

Total Male Employee Turnover Rate

(%)	<30	30-50	50+	<30	30-50	50+	<30	30-50	50+
SOCAR Türkiye Corporate Headquarters	0	3	2	2	13	6	0	8	3
Petkim	0	1	4	0	1	3	0	2	0
STAR Refinery	0	1	1	1	1	2	0	4	0
SOCAR Storage	0	3	1	0	1	3	1	0	3
SOCAR Terminal	2	3	0	2	3	0	1	4	1
BURSAGAZ	1	2	1	2	2	2	1	2	0
KAYSERİGAZ	0	1	1	1	1	0	1	6	1
SOCAR Enerji Ticaret	2	12	5	1	4	6	0	8	0
Enervis	0	0	0	8	7	0	7	4	0
STDGYAŞ	0	0	0	0	0	0	0	3	1
SETAŞ	0	0	0	0	0	0	0	4	0
	2019			2020			2021		

Number of Employees by Gender

	MALE			FEMALE		
SOCAR Türkiye Corporate Headquarters	220	277	268	131	179	162
Petkim	2,389	2,235	2,216	204	147	169
STAR Refinery	1,004	1,004	998	110	81	83
SOCAR Storage	71	68	72	6	6	5
SOCAR Terminal	281	272	268	27	27	29
BURSAGAZ	196	212	221	68	71	58
KAYSERİGAZ	117	126	117	30	29	23
SOCAR Enerji Ticaret	46	43	40	19	24	21
Enervis	300	317	269	30	32	31
STDGYAŞ	0	27	42	0	19	36
SETAŞ	25	15	14	13	5	9
	TOTAL			4,649	4,596	4,525
	2019			638	620	626

Executive Data

	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE
Over 50 Years	99	15	83	18	57	9
Between 30-50 Years	368	81	311	67	382	92
Under 30	1	0	9	2	5	1
Total (Gender Based)	468	96	403	87	444	102
Total	564		490		546	
2019			2020		2021	

Number of Employees Who Returned to Work and Still Working After 12 Months

MALE	FEMALE	Total
52	18	70

Retention Rate Among Those Taking Maternity Leave (%)

MALE	FEMALE	Total
91.60	89.16	90.38

Maternity Leave Data

Total Number of Employees entitled to Maternity Leave	MALE	FEMALE	Total
2021	53	37	90

Number of Employees Returning to Work after Maternity Leave	MALE	FEMALE	Total
2021	53	37	90

Rate of Return to Work Among Those Taking Maternity Leave	MALE	FEMALE	Total
2021	100	97.70	98.85

Total Number of Employees on Maternity Leave	MALE	FEMALE	Total
2021	53	37	90

Employee Training (Average)

Average hours of training provided per employee.

	MALE	FEMALE		
SOCAR Türkiye Corporate Headquarters	39.86	42.57	45.89	85.2
Petkim	34.24	40.15	50.73	52
STAR Refinery	89.35	48.62	71.31	108
SOCAR Storage	52.73	55.32	90.13	64
SOCAR Terminal	16	12	47	20
BURSAGAZ	14	19	22	17
KAYSERİGAZ	0	31.2	25.26	0
SOCAR Enerji Ticaret	37.93	16.4	36.08	29
Enervis	1	17.3	8.96	1
STDGYAŞ	0	2.56	15.74	0
SETAŞ	25	0.67	5.61	13
	2019	2020	2021	2019
				2020
				2021

Total Recordable Injury Rate

	SOCAR Employee Accident Frequency Rate			Contractor Accident Frequency Rate		
	2019	2020	2021	2019	2020	2021
SOCAR Türkiye Corporate Headquarters	0	0	0	0	1,86	0
Petkim	1.42	0.89	0.36	0.91	0.79	0.64
STAR Refinery	1.25	0.31	0.46	0.19	1.27	0.94
SOCAR Storage	0	0	0	0	0	0
SOCAR Terminal	0.31	1.77	0.35	0.67	0	0.54
BURSAGAZ	0.61	0.19	0.18	0.77	0.79	0
KAYSERİGAZ	0.83	1.41	0.76	6.57	0	5.12

Employee OHS-E Trainings

	Number of Employee OHS-E Training Participation (Person)				Employee OHS Trainings (Per Person Hours)			
	2017	2018	2019	2020	2021	2019	2020	2021
SOCAR Türkiye Corporate Headquarters	127	126	295	323	211	5.95	9.00	16.15
Petkim	2,446	1,116	2,490	2,396	2,322	6.85	12.75	35.96
STAR Refinery	823	1,077	1,116	1,106	1,092	18.33	34.07	39.89
SOCAR Depolama	-	-	300	261	313	12.99	9.43	36.52
SOCAR Terminal	-	-	74	70	74	18.97	27.40	34.20
BURSAGAZ	-	-	46	2,883	7,151	3.59	1.42	1.40
KAYSERİGAZ	-	-	0	2,973	4,881	0	1.13	0.56

Employee OHS-E Trainings

	Number of Employee OHS-E Training Participation (Person)				Total Training Hours (person x hour)			
	2017	2018	2019	2020	2021	2019	2020	2021
SOCAR Türkiye Corporate Headquarters	127	126	295	323	211	1,755	2,907	3,408
Petkim	2,446	2,424	2,490	2,96	2,322	55,239	80,806	83,498.80
STAR Refinery	823	1,077	1,116	1,106	1,092	57,381	38,150	43,564.10
SOCAR Depolama	-	-	0	0	74	0	0	2,530.8
SOCAR Terminal	-	-	300	261	313	3,896.5	2,461.5	11,432
BURSAGAZ	-	-	46	2,883	7,151	165	4,087	10,003
KAYSERİGAZ	-	-	0	2,973	4,881	0	3,347	2,716

Disaster and Emergency Trainings

	2017	2018	2019	2020	2021
Total Training Hours (person x hours)					
SOCAR Türkiye Corporate Headquarters	64	396	37	13	0
Petkim	2,043	2,278	1,999	3,638	3,768
STAR Refinery	0	273	5,819	1,636	2,202
BURSAGAZ	-	-	-	-	392
KAYSERİGAZ	-	-	-	-	341
TOTAL Training Hours (Person x Hours)	2,106.50	2,947	7,855	5,286	6,702

Training Participation Number (Person)

	2017	2018	2019	2020	2021
Training Participation Number (Person)					
SOCAR Türkiye Corporate Headquarters	127	459	36	14	17
Petkim	1,384	1,680	980	2,203	4,189
STAR Refinery	0	182	1,033	987	2,584
BURSAGAZ	-	-	-	-	249
KAYSERİGAZ	-	-	-	-	304
TOTAL Training Hours (person)	1,511	2,321	2,049	3,204	7,343

Emergency Drills

	2017	2018	2019	2020	2021
Emergency Drills					
SOCAR Türkiye Corporate Headquarters	0	0	2	0	0
Petkim	14	14	11	9	83
STAR Refinery	0	2	12	14	48
BURSAGAZ	-	-	-	-	59
KAYSERİGAZ	-	-	-	-	94
TOTAL Emergency Drill	14	16	25	23	284

Environmental Performance

Greenhouse Gas Emissions

	2019	2020	2021
SCOPE 1			
STAR Refinery	2,006,906.00	1,914,451.00	2,010,170.00
PETKİM	1,737,560.00	1,877,965.00	1,881,861.00
SOCAR Terminal	-	-	2,287.38
BURSAGAZ	1,134.10	1,083.96	1,665.36
KAYSERİGAZ	-	1,477.43	1,448.37
SCOPE 2			
STAR Refinery	306,516.62	432,560.57	428,453.97
PETKİM	112,022.69	84,744.58	101,690.33
SOCAR Terminal	-	-	4,283.92
BURSAGAZ	734	504.36	662.55
KAYSERİGAZ	-	252	265.26

SOCAR Türkiye Energy Consumption

	2019	2020	2021
Natural Gas	31,176,827.6	29,540,089.2	31,260,544.50
Ethylene	18,310,687.2	17,801,786.6	17,397,214.99
Moving Combustion-Gasoline			
Moving Combustion-Diesel			
Ventilation Gas	43,262.25	32,835.25	40,088.10
Hydrogen	543,387.01	568,117.58	323,308.15
Steam Received from Outside the Corporation	1,115,492.2	2,581,045.1	2,126,417.04
Stationary Combustion-Diesel	16,056.12	12,179.66	9,194.09
Total Electricity Consumed	2,316,831.6	2,219,918.5	2,294,495.03
Flammable Gas	10,719,078.2	16,879,289.0	16,443,021.02
General Total	64,241,622.4	69,635,261.1	69,894,282.91

Renewable Energy

	2019	2020	2021
Petkim WPP Renewable Energy Consumption	448,578	600,733	598,182

Water withdrawal by source

	2019	2020	2021
Surface waters	31,025,611	27,727,598	26,884,077
Groundwater	0	0	0.088
Water from the Mains	0	0	7,447
Water from the mains	0	85,999	4,279
Other	9,458	37,250	14,594
Total Water Withdrawal	31,035,069	27,850,847	26,906,123

Treated Water Discharge

	2019	2020	2021
Treated Water Discharge	8,299,073.64	11,308,249.68	10,482,348.95

Total Water Discharge

	2019	2020	2021
Total Water Discharge	8,299,073.64	11,308,249.68	10,482,348.95

Hazardous Waste

	2019		2020		2021	
SOCAR Türkiye Corporate Headquarters	Hazardous Waste	Non-Hazardous Waste	Hazardous Waste	Non-Hazardous Waste	Hazardous Waste	Non-Hazardous Waste
Recycling	-	-	-	-	-	-
Reuse	-	-	-	-	-	-
Disposed	-	-	-	-	0.00003	-
Not Disposed	0.0102	-	0.0102	-	0.0199	0.0085
Combustion	-	-	-	-	-	-
TOTAL	0.0102		0.0102		0.0284	

PETKİM	Hazardous Waste	Non-Hazardous Waste	Hazardous Waste	Non-Hazardous Waste	Hazardous Waste	Non-Hazardous Waste
Recycling	-	-	19.2	7.24	11.26	7.66
Reuse	-	-	-	-	-	-
Disposed	-	-	5.27	13.48	1.73	15.75
Not Disposed	-	-	-	-	-	-
Combustion	-	-	3.94	-	0.56	-
TOTAL	0		49.13		36.96	

STAR Refinery	Hazardous Waste	Non-Hazardous Waste	Hazardous Waste	Non-Hazardous Waste	Hazardous Waste	Non-Hazardous Waste
Recycling	-	-	9.54	0.46	20.97	0.85
Reuse	-	-	-	-	-	-
Disposed	-	-	-	0.19	0.09	0.1
Not Disposed	-	-	2.93	0.07	2.43	1.47
Combustion	-	-	-	-	-	-
TOTAL	0		13.19		25.91	

SOCAR Storage	Hazardous Waste	Non-Hazardous Waste	Hazardous Waste	Non-Hazardous Waste	Hazardous Waste	Non-Hazardous Waste
Recycling	-	-	292.695	7.93	188.185	38.63
Reuse	-	-	-	-	-	-
Disposed	-	-	-	-	-	-
Not Disposed	-	-	-	-	-	-
Combustion	-	-	-	-	-	-
TOTAL	0		300.625		226.815	

SOCAR Terminal	2019		2020		2021	
	Hazardous Waste	Non-Hazardous Waste	Hazardous Waste	Non-Hazardous Waste	Hazardous Waste	Non-Hazardous Waste
Recycling	-	-	0.00658	0.094312	0.01288	0.08
Reuse	-	-	0.013907	-	0.020889	-
Disposed	-	-	0.00124	0.228025	0.001447	0.236552
Not Disposed	-	-	-	-	-	-
Combustion	-	-	-	-	0.000007	-
TOTAL	0		0.344064		0.351778	

BURSAGAZ	Hazardous Waste	Non-Hazardous Waste	Hazardous Waste	Non-Hazardous Waste	Hazardous Waste	Non-Hazardous Waste
Recycling	-	0.04577	0.00492	0.07911	0.00068	-
Reuse	-	0.01206	0.0014	-	-	-
Disposed	-	-	0.0008	0.00132	-	-
Not Disposed	-	-	-	-	-	-
Combustion	-	-	0.00002	-	0.0021	-
TOTAL	0.05783		0.08757		0.00278	

KAYSERİGAZ	Hazardous Waste	Non-Hazardous Waste	Hazardous Waste	Non-Hazardous Waste	Hazardous Waste	Non-Hazardous Waste
Recycling	-	-	-	-	0.00067	0,00136
Reuse	-	-	-	-	-	-
Disposed	-	-	-	-	-	-
Not Disposed	-	-	0.665	-	0.3	-
Combustion	-	-	-	-	-	-
TOTAL	0		0.66567		0.30136	



GRI CONTENT INDEX

Statement of Use	Content Index - Essentials Service states that the GRI content index is consistently and clearly presented with the Standards, and references to statements 2-1 through 2-30, 3-1 and 3-2 are in line with the appropriate sections in the body of the report. SOCAR [®] has developed its sustainability reporting for the period January 1, 2021 – December 31, 2021 in accordance with the requirements of the GRI Standards. The service is provided over the Turkish version of the report.
Used GRI 1	GRI 1: Core Principles 2021
Applicable GRI Industry Standard	GRI11: OIL AND GAS INDUSTRY 2021 (GRI11: OIL AND GAS INDUSTRY 2021)

GRI STANDARD	DISCLOSURE	TOPIC	PAGE NUMBER	GRI SECTOR STANDARD REF. NO
General Disclosures				
GRI 2: General Disclosures 2021	2-1 Organizational details	About the Report	p7	
	2-2 Entities included in the organization's sustainability reporting	SOCAR Global	p12-13	
	2-3 Reporting period, frequency and contact point	About the Report	p7	
	2-4 Restatements of information	There is no restatement of information	p114	
	2-5 External assurance	There is no external assurance	p114	
	2-6 Activities, value chain and other business relationships	Vision, Mission, Principles	p16-17	
	2-7 Employees	Employees	p76-77	
	2-8 Workers who are not employees	Employees	p76-77	
	2-9 Governance structure and composition	About SOCAR Global, Corporate Governance	p10-11, p24-25	
	2-10 Nomination and selection of the highest governance body	Corporate Governance	p24-25	
	2-11 Chair of the highest governance body	Corporate Governance	p24-25	
	2-12 Role of the highest governance body in overseeing the management of impacts	Corporate Governance	p24-25	
	2-13 Delegation of responsibility for managing impacts	Corporate Governance, Committees reporting to the Board of Directors	p24-25	
	2-14 Role of the highest governance body in sustainability reporting	Corporate Governance	p24-25	
	2-15 Conflicts of interest	SOCAR [®] Code of Ethics	p28	
	2-16 Communication of critical concerns	Risk Management	p26-27	
	2-17 Collective knowledge of the highest governance body	Committees reporting to the Board of Directors	p25	
	2-18 Evaluation of the performance of the highest governance body	Corporate Governance	p24	
	2-19 Remuneration policies	Committees reporting to the Board of Directors, Employee Demographics	p25, p68-69	
	2-20 Process to determine remuneration	Committees reporting to the Board of Directors	p25	
	2-21 Annual total compensation ratio	Corporate Governance	p24-25	

GRI STANDARD	DISCLOSURE	TOPIC	PAGE NUMBER	GRI SECTOR STANDARD REF. NO
	2-22 Statement on sustainable development strategy	Sustainability Approach	p32-33	
	2-23 Policy commitments	Sustainability Approach	p32-33	
	2-24 Embedding policy commitments	Sustainability Governance Structure	p36	
	2-25 Processes to remediate negative impacts	Business Ethics and Anti-corruption	p28-29	
	2-26 Mechanisms for seeking advice and raising concerns	Business Ethics and Anti-corruption	p28-29	
	2-27 Compliance with laws and regulations	Business Ethics and Anti-corruption	p28-29	
	2-28 Membership associations	SOCAR [®] Corporate Memberships	p44-45	
	2-29 Approach to stakeholder engagement	Stakeholder Dialogue, SOCAR [®] Sustainability Priorities	p37, p38-39	
	2-30 Collective bargaining agreements	Business Ethics and Anti-corruption	p28-29	
MATERIAL TOPICS				
GRI 3: Material Topics 2021	3-1 Process to determine material topics	SOCAR [®] Sustainability Priorities	p38-39	Topic 11.1.1 Disclosure 3.1-3.2
	3-2 List of material topics	SOCAR [®] Sustainability Priorities	p38-39	
ECONOMIC PERFORMANCE				
GRI 3: Material Topics 2021	Disclosure 3-3 Management of material topics	SOCAR [®] Sustainability Priorities	p38-39	
	3-3 Management of material topics, GRI 201	The Economic Value Created, Risk Management, Climate Change, Environmental Management	p18, p26, p87, p84-85	Topic 11.2.1; 11.14.1; 11.21.1 Disclosure 201
GRI 201: Economic Performance 2016	201-1 Direct economic value generated and distributed	The Economic Value Created	p18-19	Topic 11.14.2; 11.21.2 Disclosure 201
	201-2 Financial implications and other risks and opportunities due to climate change	The Economic Value Created, Climate Change	p23, p87	Topic 11.2.2 Disclosure 201
	201-3 Defined benefit plan obligations and other retirement plans	Executive Data	p71	
	201-4 Financial assistance received from government	The Economic Value Created	p16	Topic 11.21.3 Disclosure 201
MARKET PRESENCE				
GRI 3: Material Topics 2021	3-3 Management of material topics, GRI 202	Responsible Supply Chain	p60-61	
GRI 202: Market Presence 2016	202-2 Proportion of senior management hired from the local community	Annexes	p106	Topic 11.14.3; 11.11.2 Disclosure 202
INDIRECT ECONOMIC IMPACTS				
GRI 3: Material Topics 2021	3-3 Management of material topics, GRI 203	Responsible Supply Chain	p60-61	
GRI 203: Indirect Economic Impacts 2016	203-1 Infrastructure investments and services supported	Responsible Supply Chain Local supply development/Indigenization Project	p61	Topic 11.14.4 Disclosure 203
	203-2 Significant indirect economic impacts	About SOCAR Global STAR Refinery	p11, p19	Topic 11.14.5 Disclosure 203

ABOUT THE REPORT	MANAGEMENT MESSAGES	ABOUT SOCAR GLOBAL	SOCAR TÜRKİYE	SUSTAINABILITY APPROACH	CONTINUITY and FUTURE FOCUSED BUSINESS STRATEGY	SAFE AND INCLUSIVE WORKPLACE	EMPLOYEE EXPERIENCE	CLIMATE AND ENVIRONMENTAL FOCUSED OPERATION	CORPORATE SOCIAL RESPONSIBILITY
GRI STANDARD	DISCLOSURE	TOPIC	PAGE NUMBER	GRI SECTOR STANDARD REF. NO	GRI STANDARD	DISCLOSURE	TOPIC	PAGE NUMBER	GRI SECTOR STANDARD REF. NO
PROCUREMENT PRACTICES					WATER AND EFFLUENTS				
GRI 3: Material Topics 2021	3-3 Management of material topics, GRI 204	SOCAR Türkiye Purchasing Values	p60	Topic 11.14.1 Disclosure 204	GRI 3: Material Topics 2021	3-3 Management of material topics, GRI 303	Climate and Environment Focused Operation	p84-86	Topic 11.3.1 Disclosures 303
GRI 204: Procurement Practices 2016	204-1 Proportion of spending on local suppliers	SOCAR Türkiye Purchasing Values	p60	Topic 11.14.6 Disclosure 204	GRI 303: Water and Effluents 2018	303-1 Interactions with water as a shared resource	Water Management	p91-92	Topic 11.6.2 Disclosures 303
ANTI-CORRUPTION						303-2 Management of water discharge-related impacts	Wastewater Management	p96	Topic 11.6.3 Disclosures 303
GRI 3: Material Topics 2021	3-3 Management of material topics, GRI 205	Business Ethics and Anti-corruption	p28-29	Topic 11.20.1 Disclosures 205		303-3 Water withdrawal	Water Management	p91	Topic 11.6.4 Disclosures 303
GRI 205: Anti-corruption 2016	205-1 Operations assessed for risks related to corruption	Business Ethics and Anti-corruption	p28-29	Topic 11.20.2 Disclosures 205		303-4 Water discharge	Wastewater Management	p96	Topic 11.6.5 Disclosures 303
	205-2 Communication and training about anti-corruption policies and procedures	Internal Audit	p31	Topic 11.20.3 Disclosure 205		303-5 Water consumption	Water Management	p91-92	Topic 11.6.6 Disclosures 303
	205-3 Confirmed incidents of corruption and actions taken	Internal Audit	p31	Topic 11.20.4 Disclosure 205	BIODIVERSITY				
ANTI COMPETITIVE BEHAVIOUR					GRI 3: Material Topics 2021	3-3 Management of material topics, GRI 304	Climate and Environment Focused Operation	p84-86	Topic 11.4.1 Disclosure 304
GRI 3: Material Topics 2021	3-3 Management of material topics, GRI 206				GRI 304: Biodiversity 2016	304-1 Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	Biodiversity	p97	Topic 11.4.2 Disclosure 304
GRI 206: GRI 206: Anticompetitive Behaviour 2016	206-1 Legal actions for anti-competitive behaviour, anti-trust, and monopoly practices	Business Ethics and Anti-corruption	p29	Topic 11.19.2 Disclosure 206		304-2 Significant impacts of activities, products, and services on biodiversity	Biodiversity	p97	Topic 11.4.3 Disclosure 304
TAX						304-3 Habitats protected or restored	Biodiversity	p97	Topic 11.4.4 Disclosure 304
GRI 3: Material Topics 2021	3-3 Management of material topics, GRI 207	Tax Policy	p18	Topic 11.21.1 Disclosure 207		304-4 IUCN Red List species and national conservation list species with habitats in areas affected by operations	Our main refining operations are carried out in Izmir Aliağa. There is no protected area in the Aliağa location.		
GRI 207: TAX 2019	207-1 Approach to tax	Tax Policy	p18	Topic 11.21.4 Disclosure 207	EMISSIONS				
	207-2 Tax governance, control, and risk management	Tax Policy	p18	Topic 11.21.5 Disclosure 207	Material Topics 2021	3-3 Management of material topics, GRI 305	Sustainability Approach	p32-33	Topic 11.2,3 Disclosure 305
	207-3 Stakeholder engagement and management of concerns related to tax	Tax Policy	p17	Topic 11.21.6 Disclosure 207	GRI 305: Emissions 2016	305-1 Direct (Scope 1) GHG emissions Additional sector recommendations	Climate Change, Sustainability Approach	p83, s33	Topic 11.1.5 Disclosure 305
	207-4 Country-by-country reporting	Tax Policy	p16	Topic 11.21.7 Disclosure 207		305-2 Energy indirect (Scope 2) GHG emissions	Climate Change, Sustainability Approach	p83	Topic 11.1.6 Disclosure 305
MATERIALS						305-3 Diğer dolaylı (Kapsam 3)sıra gazi emisyonları	Scope 3 emissions have not been calculated at this stage. Necessary infrastructure works have been started for the calculation in the upcoming period.		
GRI 3: Material Topics 2021	3-3 Management of material topics, GRI 301	Climate and Environment Focused Operation	p84-86			305-4 GHG emissions intensity	Climate Change, Sustainability Approach	p89-90, s32-33	Topic 11.1.8 Disclosure 305
GRI 301: Materials 2016	301-1 Materials used by weight or volume	Energy Management	p86			305-5 Reduction of GHG emissions	Sustainability Approach (decarbonisation)	p32-33-34-35 (decarbonisation)	Topic 11.2.3 Disclosure 305
	301-2 Recycled input materials used	Waste Management	p92-93-94			305-7 Nitrogen oxides (NOx), sulfur oxides (SOx), and other significant air emissions	Air Emissions	p95	Topic 11.3.2 Disclosure 305
	301-3 Reclaimed products and their packaging materials	Energy Management	p86		WASTE				
ENERGY					GRI 3: Material Topics 2021	3-3 Management of material topics, GRI 306	Climate and Environment Focused Operation	p84-86	Topic 11.5.1; 11.8.1 Disclosure 306
GRI 3: Material Topics 2021	3-3 Management of material topics, GRI 302	Climate and Environment Focused Operation	p84-86		GRI 306: Waste 2020	306-1 Waste generation and significant waste-related impacts	Waste Management	p92-93-94	Topic 11.5.2 Disclosure 306
GRI 302: Energy 2016	302-1 Energy consumption within the organization	Energy Management	p90	Topic 1.1.2 Disclosure 302		306-2 Management of significant waste-related impacts	Waste Management	p92-93-94	Topic 11.5.3 Disclosure 306
	302-2 Energy consumption outside of the organization	Energy Management	p86-87	Topic 1.1.3 Disclosure 302		306-3 Waste generated	Waste Management	p93	Topic 11.5.4; 11.8.2 Disclosure 306
	302-3 Energy intensity	Energy Management	p89-90	Topic 1.1.4 Disclosure 302		306-4 Waste diverted from disposal	Waste Management	p90-91	Topic 11.5.5 Disclosure 306
	302-4 Reduction of energy consumption	Energy Management	p90-91			306-5 Waste directed to disposal	Waste Management	p94	Topic 11.5.6 Disclosure 306
	302-5 Reductions in energy requirements of products and services	Energy Management	p91						

GRI STANDARD	DISCLOSURE	TOPIC	SAYFA NUMARASI	GRI SECTOR STANDARD REF. NO	GRI STANDARD	DISCLOSURE	TOPIC	SAYFA NUMARASI	GRI SECTOR STANDARD REF. NO
SUPPLIER ENVIRONMENAL ASSESSMENT					TRAINING AND EDUCATION				
GRI 3: Material Topics 2021	3-3 3-3 Management of material topics, GRI 308	Responsible Supply Chain	p60-61		GRI 3: Material Topics 2021	3-3 Management of material topics, GRI 404	Employees	p76	Topic 11.7.1 Disclosure 404
GRI 308: Supplier Environmental Assessment 2016	308-1 New suppliers that were screened using environmental criteria	Responsible Supply Chain	p60-61		GRI 404: Training and Education 2016	404-1 Average hours of training per year per employee	Employees	p77	Topic 11.10.6;11.11.4 Disclosure 404
	308-2 Negative environmental impacts in the supply chain and actions taken	Responsible Supply Chain	p60-61			404-2 Programs for upgrading employee skills and transition assistance programs	Employee Development	p76	
EMPLOYMENT						404-3 Percentage of employees receiving regular performance and career development reviews			
GRI 3: Material Topics 2021	3-3 Management of material topics, GRI 401	Employees	p76-77	Topic 11.10.1 Disclosure 401	DIVERSITY AND EQUAL OPPURTINITY				
GRI 401: Employment 2016	401-1 New employee hires and employee turnover	Employee Demographics	p68-69	Topic 11.10.2 Disclosure 401	GRI 3: Material Topics 2021	3-3 Management of material topics, GRI 405	Employees	p70-71	Topic 11.11.1 Disclosure 405
	401-2 Benefits provided to full-time employees that are not provided to temporary or part-time employees	Human Rights and Gender Equality	p68-69-70-71	Topic 11.10.3 Disclosure 401	GRI 405: Diversity and Equal Opportunity 2016	405-1 Diversity of governance bodies and employees	Employee Demographics	p70-71	Topic 11.11.5 Disclosure 405
	401-3 Parental leave	Maternity Leave Data	p74-75	Topic 11.10.4; 11.11.3 Disclosure 401		405-2 Ratio of basic salary and remuneration	Human Rights and Gender Equality	p71	Topic 11.11.6 Disclosure 405
LABOR/MANAGEMENT RELATIONS					NON-DISCRIMINATION				
GRI 3: Material Topics 2021	3-3 Management of material topics, GRI 402	Employee Development	p76-77	Topic 11.7.1 Disclosure 402	GRI 3: Material Topics 2021	3-3 Management of material topics, GRI 406	Business Ethics and Anti-Corruption	p28-29	Topic 11.11.1 Disclosure 406
GRI 402: Labor/Management Relations 2016	402-1 Minimum notice periods regarding operational changes	Notifications are made in a reasonable time.	p118	Topic 11.7.2; 11.10.5 Disclosure 402	GRI 406: Non-discrimination 2016	406-1 Incidents of discrimination and corrective actions taken	Business Ethics and Anti-Corruption	p30-31	Topic 11.11.7 Disclosure 406
OCCUPATIONAL HEALTH AND SAFETY					FREEDOM OF ASSOCIATION AND COLLECTIVE BARGAINING				
GRI 3: Material Topics 2021	3-3 Management of material topics, GRI 403	Safe and Inclusive Workplace	p62-63	Topic 11.9.1 Disclosure 403	GRI 3: Material Topics 2021	3-3 Management of material topics, GRI 407	Human Rights and Gender Equality	p70-71	Topic 11.13.1 Disclosure 407
GRI 403: Occupational Health and Safety 2018	403-1Occupational health and safety management system	Safe and Inclusive Workplace	p62-63	Topic 11.9.2 Disclosure 403	GRI 407: Freedom of Association and Collective Bargaining 2016	407-1 Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	Human Rights and Gender Equality	p73	Topic 11.13.2 Disclosure 407
	403-2 Hazard identification, risk assessment, and incident investigation	Safe and Inclusive Workplace Synergy	p64	Topic 11.9.3 Disclosure 403	CHILD LABOR				
	403-3 Occupational health services	Safe and Inclusive Workplace	s62-63	Topic 11.9.4 Disclosure 403	GRI 3: Material Topics 2021	3-3 Management of Material Issues, GRI 408	Business Ethics and Anti-corruption	p29	
	403-4 Worker participation, consultation, and communication on occupational health and safety	Safe and Inclusive Workplace	p62-63	Topic 11.9.5 Disclosure 403	GRI 408: Child Labor 2016	408-1 Management of material topics, GRI 408	Business Ethics and Anti-corruption	p29	
	403-5 Worker training on occupational health and safety	Safe and Inclusive Workplace	p65	Topic 11.9.6 Disclosure 403	FORCED OR COMPULSORY LABOR				
	403-6 Promotion of worker health	Safe and Inclusive Workplace	p66-67	Topic 11.9.7 Disclosure 403	GRI 3: Material Topics 2021	3-3 Management of material topics, GRI 409	Business Ethics and Anti-corruption	p28-29	
	403-7 Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	Asset Management, Management Standards	p56	Topic 11.9.8 Disclosure 403	GRI 409: Forced or Compulsory Labor 2016	409-1 Operations and suppliers at significant risk for incidents of forced or compulsory labor	Business Ethics and Anti-corruption	p28-29	Topic 11.12.2 Disclosure 409
	403-8 Workers covered by an occupational health and safety management system	Safe and Inclusive Workplace	p62-63	Topic 11.9.9 Disclosure 403					
	403-9 Work-related injuries	Safe and Inclusive Workplace	p64	Topic 11.9.10 Disclosure 403					
	403-10 Work-related ill health	Safe and Inclusive Workplace	p62	Topic 11.9.11 Disclosure 403					

GRI STANDARDI	DISCLOSURE	TOPIC	PAGE NUMBER	GRI SECTOR STANDARD REF. NO
LOCAL COMMUNITIES				
GRI 3: Material Topics 2021	3-3 Management of material topics, GRI 413	Stakeholder Dialogue	p37	Topic 11.15.1 Disclosure 413
GRI 413: Local Communities 2016	413-1 Operations with local community engagement, impact assessments, and development programs	Stakeholder Dialogue	p37	Topic 11.15.2 Disclosure 413
	413-2 Operations with significant actual and potential negative impacts on local communities	Responsible Procurement Corporate Social Responsibility	p58-59, p96	Topic 11.15.3 Disclosure 413
SUPPLIER SOCIAL ASSESSMENT				
GRI 3: Material Topics 2021	3-3 Management of material topics, GRI 414	Responsible Supply Chain	p60-61	Topic 11.12.1 Disclosure 414
GRI 414: Supplier Social Assessment 2016	414-1 New suppliers that were screened using social criteria	Responsible Supply Chain	p60-61	Topic 11.10.8; 11.12.3 Disclosure 414
	414-2 Negative social impacts in the supply chain and actions taken	Responsible Supply Chain	p60-61	Topic 11.10.9 Disclosure 414
CUSTOMER HEALTH AND SAFETY				
GRI 3: Material Topics 2021	3-3 Management of material topics, GRI 414	Responsible Supply Chain		
GRI 416: Customer Health and Safety 2016	416-1 Assessment of the health and safety impacts of product and service categories	Business Excellence Management Certifications Responsible Supply Chain	p60-61	Topic 11.3.1 Disclosure 416
	416-2 Incidents of non-compliance concerning the health and safety impacts of products and services		p56-57-58-59	Topic 11.3.1 Disclosure 416
CUSTOMER PRIVACY				
GRI 3: Material Topics 2021	3-3 Management of material topics, GRI 418	Business Ethics and Anti-corruption	p28-29	
GRI 418: Customer Privacy 2016	418-1 Substantiated complaints concerning breaches of customer privacy and losses of customer data	Business Ethics and Anti-corruption	p28-29	

Topics identified as non-priority in applicable GRI Sector Standards:

Topics	Disclosure
GRI 410: Security Practices 2016	There is no problem with the security of human rights policies and procedures.
GRI 411: Rights of Indigenous Peoples 2016	There is no community that falls under the definition of indigenous people.
GRI 417: Marketing and Labelling 2016	Since our business model is BTB and our product is fuel and our services are about digitalization, labeling is not a priority need and customer expectation. Therefore, it has been excluded from the priority issues.
GRI 415: Public Policy 2016	There is no financial or political contribution made to any party.

Independent Assurance Opinion Statement

To the Management of SOCAR Türkiye Enerji A.Ş.

Scope and Objectives :

BSI was commissioned by SOCAR Türkiye Enerji A.Ş.(hereinafter "SOCAR") to conduct independent assurance of its 2021 Sustainability Report ('the Report'), as published on the company's website at <http://www.socar.com.tr/yatirimci-iliskileri> and to carry out an independent verification of GHG emissions and occupational health and safety indicators.

Our assurance engagement was planned and carried out in accordance with AA1000 Assurance Standard AA1000AS v3.

BSI's approach

BSI's assurance engagements are carried out in accordance with our verification procedure. Reviewing the data collection and consolidation processes used to compile selected data, including assumptions made, and the data scope and reporting boundaries; We planned and performed our work to obtain the evidence we considered necessary to provide a basis for our assurance opinion. We were engaged to provide Type 2 moderate level assurance, which covers:

- Evaluation of adherence to the AA1000AS v3 principles of inclusivity, materiality and responsiveness and impact (the Principles); and
- The reliability of specified sustainability performance information along with related claims in the report including:
 - Desk review
 - Site visit
 - Data sampling
 - Reporting

Inclusivity, Materiality , Responsiveness and Impact principles;

SOCAR has made a commitment to it's stakeholders. The participation of stakeholders has been initiated in developing and achieving an accountable and strategic response to CSR.

SOCAR publishes CSR information that enables its stakeholders to make informed judgments about the company's management and performance. In our professional opinion the report covers the SOCAR's materiality issues.

SOCAR has implemented the practice to respond to the expectations and perceptions of its stakeholders.

Assurance level

The moderate level assurance provided is in accordance with AA1000AS v3 in our review, as defined by the scope and methodology described in this statement.

Independence/Responsibilities of SOCAR and of the Assurance Providers

BSI was not involved in collecting and calculating data, or in the development of the Report. BSI's activities are independent from SOCAR. SOCAR has sole responsibility for preparation of the Report. In performing our assurance work, our responsibility is to the management of SOCAR.

The assurance team was composed of Lead auditors and Carbon Footprint Verifiers experienced in industrial sector, and trained in a range of sustainability, environmental and social standards including AA1000AS, ISO 14001, ISO 45001, and ISO 9001 EU ETS, GS, VCS, ISO 50001 etc. . BSI is a leading global standards and assessment body founded in 1901. The assurance is carried out in line with the BSI verification procedure. There is no limitation.

BSI's Opinion

Based on BSI's approach, we believe that SOCAR has:

- Met the requirements above
- Disclosed accurate and reliable GHG emissions and waste data and occupational health and safety indicators.
- GRI 305-1 Scope 1 emissions derived from MRV verification reports.

Verified Data

GHG Emissions (GRI 305-1 ve 305-2)

Occupational health and safety indicators (GRI 403-9 ve 403-10)

SOCAR Türkiye Enerji A.Ş (SOCAR Türkiye (Corporate Headquarters), Petkim, STAR Refinery, SOCAR Storage, SOCAR Terminal, Bursagaz, Kayserigaz, SOCAR Enerji Ticaret A.Ş. Enervis, STDGYAŞ)

The opinion expressed is formed on the basis of a moderate level of assurance and at the materiality of the professional judgement of the verifier.

Mehmet Kumru
Sustainability Team Manager



Date: 10.06.2022



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