

Occupational Health and Safety Strategic Security Trainig Integrated Management Data Integrity Organizational Development Supplier Innovation Compliance Management Risk Management Employee Development Information Tecnologies Security **Corporate Citizen** Occupational Health R&D Integrated Management Organizational Development **Asset Integrity** Performance RecoveryTraining **Security Systems** NGO Corporate Culture Measurement and Management Compliance Management Supplier Supplier Dynamics Valunteersm Satisfaction Data Integrity Ethics Reputation& Perception Ethics Shareholder Information Technologies Security Integrity Sustainability Sport Customer Satisfaction Compliance Management NGOCompliance Statisfaction Social Media Shareholders NGO Emission **Culture&Arts** 

Local People

Sustainability Sport Dynamics Culture&Arts Data Integrity Shareholder

Sustainability

Shareholder Innovation

Occupational Health and Safety Information Tecnologies Security NGO Sustainability

RecoveryInnovation

Information Technologies Security Corporate Culture Organizational Development

Integrated Management Performance Saffety Supplier Integrated Management Social Media Customer Satisfaction

Measurenet and Management Dynamics Occupational Health and Safety

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### **ABOUT THE REPORT**

We present to the view of our stakeholders the social, economic and environmental impacts of our activities, our managerial approaches we have developed in these areas, and the results we achieved with the eighth non-financial report this year, as it is part of an ongoing practice launched in 2008 for the first time in the Turkish business world.

This report has been prepared in accordance with GRI Standards: Core option. While the indicators in the GRI Standards were used in performance disclosures, UN Global Compact Progress Report requirements were also taken into account. Indicators accepted throughout the sector were also included.

The information included in Tüpraş 2016 Sustainability Report involves information on activities carried out between January 1st and December

31st, 2016. The scope of the report is limited to the refining operations and it reflects the operational and performance results of Tüpraş refineries. Information concerning various stakeholder groups such as suppliers and business partners, as well as introductory information about Opet Petrolcülük A.Ş. and general information about Ditaş were also included in the report so as to represent corporate integrity. As required by the financial reporting principles followed, only the financial data concerning subsidiaries were included in Tüpraş performance figures.

You can access the PDF version of the report and reports for previous periods at **www.tupras.com.tr** 

# **MESSAGE FROM THE CHAIRMAN**



#### Dear Stakeholders,

The long trend of low economic growth on a global scale crystallized country's structural problems during the reporting period. With regard to Turkey, in addition to existing structural economic problems, treacherous coup attempt, ongoing conflicts in our region and political uncertainties in 2016 caused Turkish economy to enter a challenging period. As Tüpraş, we took pride in continuing to create value for our stakeholders with the operational and financial results we achieved in this challenging period.

When we evaluate the year of 2016 in terms of the commodity-refinery sector, we observe that the first six-month period had been quite challenging for the sector and in the second six-month period we entered a relatively positive process despite the fluctuating trend. Crude oil prices started from 37 USD/barrel and closed the year at 55 USD/barrel due to production constraints of OPEC countries and the support for this trend from non-OPEC countries such as Russia.

During this period, we reduced Turkey's demand for middle distillate imports by 5 million tons and realized 1 million tons of more gasoline export including reformat compared to the RUP period, contributing to the reduction of current deficit by using the heavy crude oil processing flexibility of Fuel Oil Recycle Facility.

Tüpraş invested more than 40 million TL in R&D studies to develop new energy technologies during which the struggle against climate change came into prominence. On the other hand, thanks to our energy efficiency projects, which are one of our areas of continuous improvement, we

reduced energy consumption by 1,263 TJ per year and reduced the amount of greenhouse gas emissions by 92,675 tons CO2. In 2017, we reduced our consumption of clean water by 13.2 million m3 thanks to our new wastewater treatment facility operating since the previous period, which enables the recovery of wastewater discharged by the Körfez Municipality to be re-used in production.

In 2016, we continued our efforts to improve our performance in occupational health and safety, which is another core priority for us. In this context, we continued to develop our company procedures with internationally accepted good practice examples. We carried out nearly 136 thousand hours of training to ensure the recognition of our practices by the employees and their implementation. On the other hand, we continued to contribute to Turkey's socio-economic development with our social development activities we have been carrying out for many years.

We continued to improve our sustainability performance while generating value for our stakeholders and our country. We thank and pay our respect to all our stakeholders, who made our success possible despite the challenging conditions.

### Ömer M. Koç

Chairman of the Board of Directors

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# **MESSAGE FROM THE GENERAL MANAGER**



#### Dear Valued Stakeholders.

We successfully closed the reporting period, which started in difficult conditions, with the improvement experienced in the second half and the high performance demonstrated by our company. Infrastructural investments that continued during the year and the sales of automobiles and especially of light commercial vehicles at record levels led to an increase in demand for fuel. According to the Energy Market Regulatory Authority's data for 2016, diesel consumption in Turkey increased by 8.5% to 22.3 million tons, gasoline consumption by 6.5% to 2.2 million tons. Total consumption of oil products also increased by 7.6% to 26.7 million tons.

We maintained our production profitability by means of white product efficiency we achieved with the increased conversion capacity and flexibility of processing different types of crude oil thanks to our investment in Fuel Oil Conversion Unit. Despite the decrease in margins and the loss of regional arbitrage advantages, we increased our domestic sales volume above the increase in Turkey's demand in 2016 thanks to our strength in production. We exported 5.5 million tons of products to 27 countries during the year and reached the highest sales volume of Tüpraş's history with a total of 30.3 million tons.

The year of 2016 was a year during which we developed our performance in the areas of sustainability and corporate governance. While we continued to rank in Borsa Istanbul Sustainability Index, our Corporate Governance Rating was determined as 9.42.

We continued our activities on energy efficiency and climate change, which is one of our material sustainability issues. We aim to be one of the Europe's low emission refineries in 2017. To this end, we lowered the average energy intensity index (EII) value, which was at 120.9 in 2009 to 101.8 in 2016 by means of investments and improvements. As a result, we saved 1,263 TJ of energy and 92,675 tons of CO₂e greenhouse gas

emissions during the reporting period. Throughout the year, we achieved a recovery of over 20 million m³ of wastewater in our production processes. In addition, we increased the usage rate of our new wastewater treatment facility and recovered 13.2 million m³ of wastewater discharged by the Körfez Municipality to be re-used in production.

We also continued our R&D activities with the aim of developing new refinery technologies, reducing environmental impact and developing alternative fuels in the reporting period. In 2016, we made 13 national and 11 international patent applications, and registered 3 national and 2 international patents. We have increased the number of scientific publications we have published since 2010 to 167. In the area of occupational health and safety, one of our basic sustainability priorities, we continued our work during the reporting period. We reduced our accident frequency rate to 1.9 during the year and provided 136,000 hours of occupational health and safety training to the employees of Tüpraş and its contractors. On the other hand, in the reporting period, we allocated 24.4 million TL to donation and sponsorship activities aimed at supporting community development in education, environment, culture-arts and sports fields.

Since our foundation, we work to fully meet the need for Turkey's petroleum products and support the country's development. We present our gratitude to our employees, contractors and suppliers, our business partners, customers, investors and shareholders, who give strength to our work while enhancing the quality of life of the society we live in with our social, economic and environmental performance.

### İbrahim Yelmenoğlu

General Manager

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# TÜPRAŞ IN FIGURES

Tüpraș Refineries	Refining Capacity (million tons)	Storage Capacity (million m³)	Capacity Utilization Rate (%)	Production (million tons)	Sales (million tons)
İzmit Refinery	11,0	3,03	107,4	11,0	14,8
<b>İzmir Refinery</b>	11,0	2,51	106,3	11,2	10,4
Kırıkkale Refinery	5,0	1,42	101,3	4,8	4,4
Batman Refinerya	1,1	0,2	92,5	1,0	0,8



#### **OPET**

Opet, 40% shares of which belongs to Tüpras, operates in the fuel distribution sector in the areas of retail sales, commercial and industrial sales, storage and international product trading. Providing a significant logistical advantage for Tüpraş with its 1.1 million m³ storage capacity, Opet sold 3.7 million m³ of jet fuel in 2016.

### **DİTAS**

Deniz İşletmeciliği ve Tankerciliği A.Ş. (Ditaş), 79.98% shares of which is owned by Tüpras, conducts crude oil transport in line with the needs of Tüpras, oil product transport according to the needs of Tüpraş and other suppliers. In 2016, Ditaş transported 9.3 million tons of crude oil and 5.9 million tons of oil products.



24,8

Milion Tons

**Domestic Sales** 

5,5

Milion Tons

**Imports** 

27,7

Milion Tons

Crude Oil Supply

28,3

Milion Tons

**Processed** Crude Oil

92.675 1.263

CO<sub>2</sub>e

Saved

**Emissions** 

TJ

Saved **Energy**  20

Million m<sup>3</sup>

Water Recycled 346

Million TI.

**Environmental Expenditures** 

412

248.878

Person\*Hour

Female **Employees** 

Training

24,4 Million TL

Community Investment 63%

**Local Supply** 

GRI-102-7

## **CORPORATE GOVERNANCE**

The Corporate Governance Principles issued by the Capital Markets Board of Turkey, national and international management norms, transparency and accountability principles are the basic components of Tüpraş' corporate governance structure. The development of the corporate governance model is a major field of study and the progress achieved is reported annually through the Corporate Governance Principles Compliance Reports.

### BOARD OF DIRECTORS AND SENIOR MANA-GEMENT STRUCTURE

The General Assembly, which is the highest decision-making body of Tüpraş, elects the Board of Directors that consists of 15 members to serve for a limited period of time. The Board of Directors, which is responsible for the referral and administration of the Company's activities, has 5 independent members and none of the members have a role in execution. Diversity in the Board of Directors is expected to contribute positively to its effective functioning. Studies have been carried out to determine a target rate for female membership in the Board of Directors to represent diverse opinions. Currently there is one female member in the Board of Directors.

The Corporate Governance Committee, the Risk Management Committee, the Audit Committee,

the Executive Committee and the Ethics Committee are responsible for increasing the efficiency of the Tüpraş Board of Directors in fulfilling its duties.

The Chairman of the Board of Directors and the General Manager roles are carried out by different individuals. The main task of the senior management, led by the General Manager, is to implement the strategic plan and corporate policies determined by the Board of Directors. For this reason, the senior management of Tüpraş consists of 27 executives who have proved their professional career and expertise in various fields. There is 1 female manager in the senior management and 22 female managers in the middle management.

### SUSTAINABILITY MANAGEMENT

The objective of Tüpraş's sustainability management approach is defined as "creating value through a risk and opportunity based approach and systematic methods." Tüpras Corporate Responsibility Working Group, which meets periodically, manages the process of identifying sustainability priorities. During this process, social, economic and environmental issues are evaluated by taking into account stakeholder expectations, risk areas and opportunities, company strategies and external expert opinions. The issue universe is designed with a preliminary evaluation carried out with the participation of company managers. Tüpras Corporate Responsibility Working Group then determines the portfolio of material issues by carrying out the final evaluation.

Material Issues	Supply Processes	Production Processes	Distribution Processes	Marketing and Sales	After Sales Processes
One and an all brothly and Cafel					
Occupational Health and Safety	•	•	•		
Water Management		•			
Energy Efficiency		•	•		
Environmental Impact of Producti	on	•	•		
Innovation, R&D and Digitalization	1	•		•	
Legal Compliance	•	•	•	•	•
Customer Satisfaction		•		•	•
Greenhouse Gases and Climate Ch	nange	•			
Sustainable Energy Resources		•		•	
Asset Management and Reliability	/	•			

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### STAKEHOLDER ENGAGEMENT

By adopting a participatory management approach, Tüpraş develops mechanisms that encourage stakeholder opinions to be vocalized in decision-making and implementation processes. Through these mechanisms, stakeholders are informed about company's activities and the results of these activities in terms of transparency and accountability principles.

Tüpraş does not take part in any political or ideological opinion, tendency or organization; none of the operations or campaigns of any political parties, politicians or candidates can be directly or indirectly supported. Tüpraş does not lobby in favor of the company's private benefits and does not lend its support for those who organize such activities on company operation sites or with company resources. Tüpraş

exchanges ideas in transparent relations with public organizations and meet their demand for information with regards to the sector. It supports the studies of sectoral NGOs and therefore contributes to the solution of sectoral problems. It acts in full compliance with free competition and legal procedures when public organizations are clients and in tendering and procurement processes.

### STAKEHOLDER COMMUNICATION METHODS

### **Employees**

Sustainability Report (annual), Annual Report (annual), Employee Engagement Survey (annual), Internal Communication Meetings (annual), Performance Evaluation Meetings (annual), Rafine Magazine (every 4 months), Occupational Health and Safety Boards (monthly), Technical Safety Bulletins (weekly/monthly), Internal Information Announcements (instant), Social Projects (continuously), Social Activity Clubs (continuously), Refined Suggestions System (continuously), Acknowledgement, Appreciation and Rewarding System (continuously), Tüpraş Code of Conduct (continuously), Collective Bargaining Agreement (continuously), Employee Trainings (continuously), Website (continuously), Refinery Information Bank (continuously) and Corporate Portal (continuously)

### Shareholders and Investors

Sustainability Report (annual), Annual Report (annual), General Assembly of the Shareholders (annual), Interim Annual Reports (quarterly), Information and Material Disclosure (instant), Roadshow and Investor Presentations (upon request), Meetings and Interviews (upon request), Analyst Presentations and Teleconferences (upon request), Tüpraş Code of Conduct (continuously), Website (continuously)

### Customers

Sustainability Report (annual), Customer Satisfaction Survey (annual), Rafine Magazine (every 4 months), Meetings and Interviews (upon request), Customer Portal (continuously), Customer Relations Management System (continuously), Tüpraş Code of Conduct (continuously), Website (continuously)

# Business Partners and Suppliers

Sustainability Report (annual), Supplier Satisfaction Survey (annual), Rafine Magazine (every 4 months), Technical Safety Bulletins (weekly/monthly), Meetings and Interviews (upon request), Tüpraş Code of Conduct (continuously), Business Partner HSE-Q System (continuously), Website (continuously)

### **Indirect Employees**

Rafine Magazine (every 4 months), Technical Safety Bulletins (weekly/monthly), Meetings and Interviews (upon request), Tüpraş Code of Conduct (continuously), Business Partner HSE-Q System (continuously), Employee Trainings (continuously), Website (continuously)

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### STAKEHOLDER COMMUNICATION METHODS

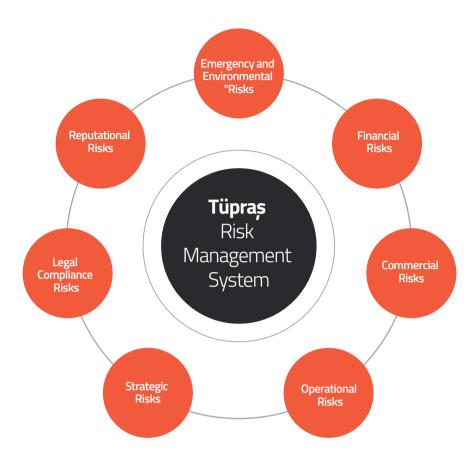
Trade Unions	Sustainability Report (annual), Annual Report (annual), Rafine Magazine (every 4 months), Occupational Health and Safety Boards (monthly), Meetings and Interviews (continuously), Collective Bargaining Agreement (continuously), Website (continuously)
Public Authorities	Sustainability Report (annual), Annual Report (annual), Audits (periodic/instant), Meetings and Interviews (upon request), Joint Projects (upon request), Incentives (upon request), Website (continuously)
NGO's	Sustainability Report (annual), Annual Report (annual), Meetings and Interviews (upon request), Joint Projects (upon request), Donations and Sponsorships (upon request), Memberships (continuously), Website (continuously)
Education Institutions	R&D Partnership (project based), Donations and Sponsorships (upon request), Infrastructure and Trainee Support (upon request), Master's Degree and Sector-specific Expertise Programs (continuously), Website (continuously)
Media	Sustainability Report (annual), Annual Report (annual), Rafine Magazine (every 4 months), Meetings and Interviews (upon request), Press Meetings and Bulletins (instant), Website (continuously)
Local Community	Perception and Reputation Surveys (biennial), Meetings and Interviews (upon request), Announcements (instant), Social Projects and Infrastructure Support (continuously), Website (continuously)
Society	Perception and Reputation Surveys (biennial), Announcements (instant), Social Projects and Infrastructure Support (continuously), Website (continuously)

### **RISK MANAGEMENT**

Within the context of risk management, Tüpraş prepares the necessary plans for early identification of the risks that the company may encounter and turning them into an opportunity. The Risk Management Committee, which is the highest level body of risk management, is

responsible for defining, evaluating, monitoring and managing risk elements; for developing internal control systems, integrating these systems into the corporate structure, measuring risk elements, reporting them to the Board of Directors and using them in decision mechanisms.

These studies are carried out by Tüpraş Risk Management and Audit Unit. Tüpraş Risk Management System, which is followed in the scope of these studies, consists of 7 main titles that include sustainability risks.



### INTERNAL AUDIT AND CONTROL

Internal audit activities at Tüpras are carried out through a proactive methodology established in line with the International Internal Audit Standards and Tüpraș Ethical Principles. Audit works are carried out by Tüpras Risk Management and Audit Unit on the subjects of fiscal, operational, risk, process, legal compliance, business ethics and misconduct in terms of years and processes. The basic financial and routine process audits are carried out twice a year and thematic process audits specified for the working period are carried out at least once in all Tüpras operating units. The assessments made during the internal controls, which are carried out continuously in order to ensure that Tüpras's activities and services are conducted in an effective, reliable and uninterrupted manner and that the information in the accounting and financial statements is accurate, integrated, consistent, reliable, secure and easily attainable, are shared with the company management, and action plans are followed to improve the processes.

Risk-based audit plans are established annually.

Audit assessments are published in the Company without delay and necessary corrective measures are taken. The assessments and following improvements are regularly monitored. The Risk Management and Audit Department visited refineries 25 times in 2016 and a total of 155 person work-day of audits carried out.

Within the scope of audit activities, all business units are also evaluated against bribery and corruption risks. The findings are conveyed to the Ethics Committee. Necessary sanctions are applied in accordance with the Committee decision, corrective and preventive studies are conducted. When suspicious situations arise, there are also communication channels that allow the employees and other relevant stakeholders to communicate issues to the Risk Management and Audit Department within the confidentiality principle. The notifications are evaluated confidentially and conveyed to the senior management. All Tüpras employees are informed about Code of Ethics and Principles of Practice.

Tüpraş also carries out supplier audits within the scope of its purchasing operations. During the reporting period, 385 suppliers were subject to audits and the contract of one supplier was revoked on the grounds that minimum requirements expected on the aspects such as production quality, environmental management, workplace and human rights, were not met.

Tüpraş aims to achieve full legal compliance in its operations and within the scope of its compliance studies, the company manages its commitments to the initiatives of which it is directly or indirectly a party. The level of compliance with OHSAS 18001, ISO 14001 and ISO 27001 system standards is monitored with the same diligence and certification practices are carried out through independent audits.

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### **FUTURE OF THE ENERGY**

Energy is vital for social welfare and economic development. Therefore, steering the industry through innovative practices and achieving the highest level customer satisfaction, while working to meet the need for Turkey's petroleum products constitute the focal point of Tüpraş's strategy. In this context, Tüpraş continues to follow the transformation process of the energy sector in the world closely and work towards securing compliance with future market conditions.

It is expected that the world's population will reach 9 billion by 2050 and 75% of the population will live in the cities. These expectations indicate that energy need is going to increase significantly. For example, it is predicted that the total number of vehicles will double in the same period as a result of the increase in the number of vehicles especially in the developing countries. In this equation, in which the

problem of climate change is also an important variable, it is expected that the energy sector will develop methods to meet the needs and that these alternatives will have low emission values.

Smart city concepts and electric vehicles, which have been developing in recent years, are positive steps to combat climate change. It is

expected, however, that the majority of electric vehicles that are expected to reach 100 million will be hybrid vehicles in which petroleum products are used, and also that a share of electric vehicles will be less than 10% in the vehicle stock that is expected to rise over 2 billion by 2050. Therefore, the development of efficient and reduced-emission fuels remains important in combating the climate change.

#### **ENERGY EFFICIENCY**

Tüpraş carries out its production in energy intensive processes as per the sector it operates in. And this results in high energy consumption and emission levels. Our company strives to achieve more efficient production levels by reducing energy consumption and greenhouse gas emissions. Common calculation criteria are used at all facilities to monitor energy consumption and greenhouse gas emissions efficiently.

Fuel Oil Conversion Facility, which is the Turkey's largest investment of industrial facility made at a time, was put into operation at İzmit Refinery in 2015. Tüpraş's energy consumption values have increased since by 12.5% in 2016 accordingly. During the period, total energy consumption amounted to 102,156.4 TJ, of which 101,638,7 TJ is direct and 517,8 TJ is indirect consumption. On the other hand, depending on the increase in the amount of

crude oil processed, the specific energy consumption increased by 9.4% reaching to 3.60 GJ/ton.

Tüpraş monitors its energy consumption performance according to Solomon1 Energy Intensity Index (EII) methodology, which is frequently followed in the refinery sector. Solomon Energy Intensity Value (EII), which was 102.3 in 2015, was dropped to 101.8.

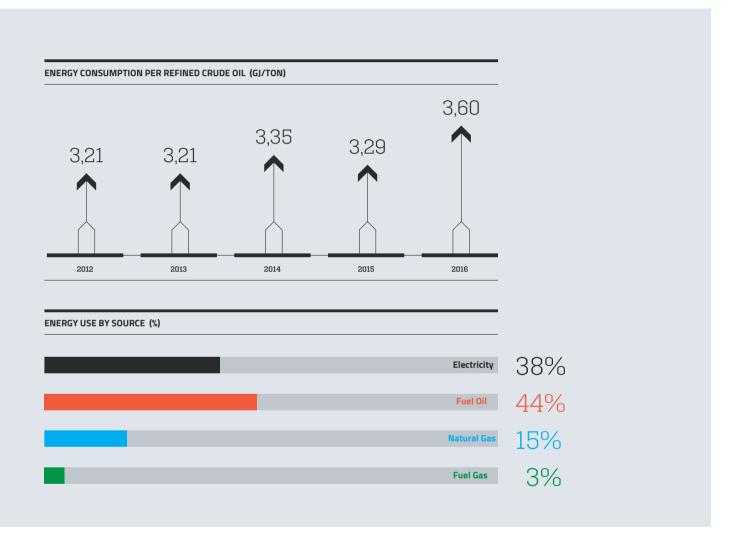
Land transportation accounts for the largest share in logistics of Tüpraş fuel products between refineries and sales terminals. On the other hand, Tüpraş moved its logistic choices to railroad transportation because it is more cost efficient and safer compared to land transportation and it has lower environmental impacts. The increase in the amount of products transported by railroad continued in 2016 after the completion of

modernization works. Within the logistics operation of Tüpraş, the share of the railroad transportation rose to 26%.

Tüpraş prevents energy losses and minimizes the energy consumption with energy efficiency projects. Aiming to be one of the lowest emission refineries in Europe, Tüpraş closely follows technologies and applications to save energy throughout the world.

As a result of the 18 projects realized within the scope of energy efficiency activities at 4 refineries of Tüpraş in 2016, it was saved 30,186 TJ of energy and 92,675 ton of CO2e emissions. The reduction in the greenhouse gas emissions has amounted to 2.1 million tons in the last 10 years.

<sup>&</sup>lt;sup>1</sup>Tüpraş uses the Solomon® methodology, with which benchmarking studies are conducted and the performance of refineries are assessed worldwide in its monitoring of Energy Performance and development efforts. The company attends to benchmarking studies conducted by Solomon every 4 years.



	NUMBER OF PROJECTS	ENERGY SAVINGS (TJ)	EMISSON SAVINGS (TON CO₂e)
2012	97	5.255	348.173
2013	40	2.841	189.019
2014	22	1.772	126.442
2015	21	1.031	71.744
2016	18	30.186	92.675

### **Energy Efficiency Awards to Tüpras**

Tüpraş was awarded second prize with İzmit Refinery and third prize with Kırıkkale Refinery in SEVAP-3 category at SENVER Industrial Energy Efficiency Project Awards organized by the Ministry of Energy and Natural Resources within the scope of the 8th Energy Efficiency Forum. With the 11 energy saving projects participated in the competition, Tüpras saved 793,901 GJ of energy and 45,018 tons of emissions.

# IZMIT REFINERY ENERGY INTEGRATION AND OPTIMIZATION

As a part of the energy optimization studies at the İzmit refinery, the G4 alternator that causes power loss was kept deactivated as much as possible by using the power plants decision support program. With this application, 11,355 tons of CO<sub>2</sub> emission savings were achieved in one year.

# BATMAN REFINERY IMPROVEMENT OF THE HOT OIL SYSTEM

Within the scope of the project realized at the Batman Refinery, a new hot oil system was installed, which enables the temperature of bitumen tanks and related production-sales lines located at the bitumen storage tank to be maintained at 140 °C. The energy loss of steam energy that is used to heat the bitumen line and tanks was eliminated and a hot oil system with high thermal efficiency was put into operation. Thanks to the project, greenhouse gas emissions were reduced by 3,200 tons.

# IZMIR REFINERY FLARE GAS RECOVERY PROJECT

Izmir Refinery Flare Gas Recovery Project enabled the recovery of flammable gas waste and the saving of purchased natural gas by returning the recovered gas back to the refinery fuel gas system. The project was put into operation in 2016 and achieved 24,900 tons of  ${\rm CO_2}$  emission savings per year.

### KIRIKKALE REFINERY FUEL AND ELECT-RICITY SAVING IN THE CRUDE OIL AND VACUUM UNITS

Existing fans inside the ovens of crude oil and vacuum units at Kırıkkale Refinery and the ones with exceeding capacity were changed according to the flow rate and power need considering the long term. The project reduced the emissions by 14 thousand tons.

#### **FUEL MARKET**

Crude oil prices, which started at 36.53 USD/barrel, went up to 54.94 USD/ barrel as a result of the developments in the USA and China, and the production restriction decisions by oil producer countries.

Turkey's economy achieved a growth by 3.5% during the year while the demand for diesel increased by 8.5% reaching to 22.3 million tons as a result of the regulations against the use of non-standard and informal products and the continuation of

the large-scale infrastructure investments. Gasoline consumption during the period also increased by 7% due to the increase in the efficiency of vehicle engines in recent years. Due to the infrastructural investments, demand for bitumen increased by 48% reaching to 3.4 million tons.

Tüpraş imported 25.2 million tons of crude oil and supplied 2.6 million tons of domestic crude oil in 2016 and achieved a total product sale of 30.3 million tons with a net refinery margin of 6.03 USD.

### **ENERGY ALTERNATIVES**

Energy alternatives studies, which offer efficient consumption and low carbon emission opportunities, is gaining momentum in order to forestall the climate change problem while responding to rising energy needs. In this context, Tüpraş makes investments for the development of its production capacity in product groups for which the expectation is rising in line with the future trends and continues its studies on the development of alternative energy products.



### **Fuel Production From Waste Carbon Dioxide**

Hydrogen production units in oil refineries are significant sources of carbon emissions. The  $\mathrm{CO}_2$  gas contained in the emissions of these units can be captured by various methods. In this case, however, the problem of efficient disposal of the captured  $\mathrm{CO}_2$  gas arises. In the scientific world, various different storage methods have been developed for the disposal of  $\mathrm{CO}_2$ , but these methods only offer a temporary solution.

Within this context, Tüpraş R&D Center is working on the development of a catalytic system in order to convert captured  $\mathrm{CO}_2$  into fuels with high added value and return them back to the fuel pool. In this way, it is aimed to convert process waste  $\mathrm{CO}_2$  that does not have any fuel value into a high added value fuel such as hydrocarbons compatible with methanol, DME and gasoline pools in a sustainable and environmentally friendly manner. DME that is produced within the scope of the project is used as fuel oil especially in China and the US because it has high cetane values and is environmentally friendlier than other fuels.

### Elemental Sulfur and Hydrogen Production from H2S Gas

The industrial production of hydrogen  $(H_2)$  gas is accomplished through the process of steam reforming from natural gas. Sulfur (S) removal processes to ensure EURO 6 fuel properties in the refineries are done with hydrogen gas, which is widely used in other units of the refinery and consumed in high quantities. Sulfur present in the structure of petroleum molecules is converted into hydrogen sulfur  $(H_2S)$  gas by reacting with hydrogen in desulfurization units and hydrogen sulfur gas is converted into elemental sulfur and water  $(H_2O)$  in sulfur conversion units. After all these processes, hydrogen obtained from the natural gas is turned into water and thus lost in a sense. In this project carried out within the scope of Tüpraş R&D Center, it is aimed to decompose  $H_2S$  gas electrochemically and photo-electrochemically into hydrogen and sulfur, and to recover the hydrogen consumed in the desulfurization process. In addition, the use of photo-electrochemical hybrid methods other than electrochemical methods to decompose  $H_2S$  will lead to the use of renewable energy sources in refineries.

### **ENVIRONMENTAL MANAGEMENT**

Tüpraş tackles the issue of climate change with all its legal, operational and financial dimensions through a risk and opportunity based approach within the scope of corporate governance. It operates with the awareness of refinery sector's responsibilities towards environmental, financial and social risks posed by the climate change. Increasing global emission amounts requires refinery companies to focus on climate-friendly technologies in their production processes and product portfolio. Starting the studies in this area earlier will also make it easier to benefit from the opportunities that come with the low carbon economy.

### **TÜPRAS CLIMATE VISION**

Tüpraş constantly monitors and improves the environmental impacts of its operations and production processes. It tries to minimize its greenhouse gas emissions caused by its production processes and its harmful impact on the environment through a comparative sectoral analysis. Tüpraş does not consider the activities and investments for combating climate change as cost-increasing factors. Accordingly, the company identifies its responsibilities, and then designs and carries out various projects. Tüpras conducts energy efficiency studies to reduce greenhouse gas emissions deriving from production processes, implements environmental- friendly technologies and methods to reduce greenhouse gas

emissions deriving from operational processes, and invests in product specifications along with R&D studies to reduce greenhouse gas emissions deriving from consumption processes.

Following domestic and international developments regarding climate change closely, Tüpraş participates in meetings and seminars organized by official authorities in Turkey and abroad, especially the Ministry of Environment and Urbanization, and as well as civil society organizations in the context of EU harmonization studies. In this context, Tüpraş participated in the 22nd United Nations Conference on Climate Change (COP22) in Marrakech, Morocco.

#### **EMISSIONS**

All the chimneys with nominal heat power greater than 50 MW are equipped with Continuous Emission Measurement Systems and relevant parameters are monitored online by the Ministry of Environment and Urbanization. In addition, emissions verification measurements are carried out every two years for all the chimneys and air quality measurements are made at the plant and the impact area. In this context, Tüpraş refineries comply with the legal emission limits in the framework of national legislation.



### **ENVIRONMENTAL IMPACT OF PRODUCTION**

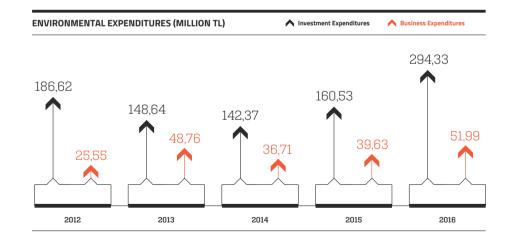
Tüpraş aims to improve the life quality of future generations by minimizing the environmental impact resulting from its production processes and to be a leading company regarding the environmental protection. Environmental issues are managed in a wide range of ways, including reducing emissions, wastes and other environmental impacts, ensuring resource efficiency and maintaining compliance with regulatory requirements. Environmental Directorate is responsible for the management of environmental issues at Tüpraş. Inter corporate and international standards are

followed in the management of environmental issues. ISO 14001 Environmental Management System is effectively implemented at all Tüpraş Refineries.

The environmental performance results obtained are continuously monitored and subject to audits. In addition to internal audits, environmental performance is assessed in the framework of audits by the Ministry of Environment and Urbanization, audits conducted by authorized institutions and independent organizations, and the Koç Group Environmental Audit processes.

Tüpraş aims to raise the level of environmental awareness of its employees, business partners and the public through environmental trainings. During the reporting period, environmental trainings of 17,331 person\*hour was provided.

Tüpraş allocates a significant amount of resources to environmental investments every year in order to ensure that environmental management is carried out in the most efficient manner. In 2016, a total of 346 million TL was allocated for environmental expenditures, including an investment cost of 294 million TL



#### **WATER MANAGEMENT**

In line with its responsible approach towards the preservation of water resources, Tüpraş conducts efficiency and recycling practices to reduce the use of fresh water resources and the amount of wastewater. On the other hand, it carries out studies to raise the discharge quality of the wastewater arising from the production processes above the norms indicated in the regulations. In this respect, while Tüpraş increases its operational efficiency, it does not have a negative impact on the biodiversity

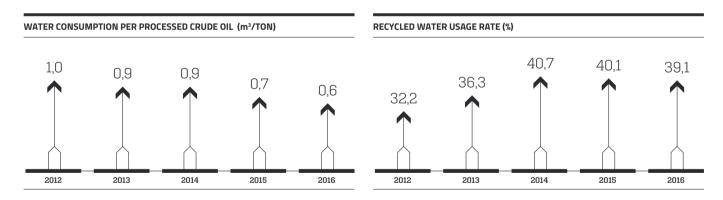
value of water resources and natural environment.

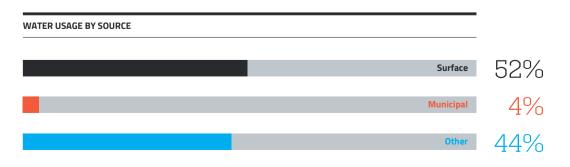
In 2016, parallel to the increase in processed crude oil, total water consumption amounted to 31.2 million m3, increasing by 21% compared to 2015. Water consumption per processed crude oil decreased by 14% to 0.6 m3/ton. As a result, there has been a reduction of 40% since 2012.

While 52% of water consumption was from

surface sources and 44% of it from municipal water. Groundwater was not used during the reporting period.

Water recycling practices continued in 2016 as it did in previous periods. Thanks to these efforts, 20 million m3 of water was recycled and this corresponds to 39% of the total amount of water used in Tüpraş activities.







Tüpraş gives priority to the recycling of the wastewater rather than to the provision of water consumed in the refineries from the natural sources in order to protect the natural resources and to ensure sustainability. The practices and investments carried out in the wastewater treatment plants play an important role in improving the water recycling performance at Tüpraş. In this way, while the amount of water to be reused in production increases, the discharged wastewater boasts a level of pollution load much lower than the limit values defined by the regulations.

Within this context, the Tüpraş Refineries discharged 17.1 million m3 of wastewater in 2016 in accordance with the limit values and the

receiving environments stated in the legal permits.

Within the scope of water recovery and wastewater recycling efforts, a new water treatment unit has been established at İzmit Refinery to treat wastewater discharged to the sea by Körfez Municipality and to bring it to the quality of raw water. With the new water treatment plant project, 13.2 million m3 of water has been saved annually at Sapanca Lake. The feasibility studies of the Recycling Plant, which will provide a 20% reduction in the amount of raw water at Kırıkkale Refinery, were completed and the field studies of the Recycling Project, which will provide a 20% reduction in the amount of raw water at Kırıkkale refinery, is expected to be

completed in 2017.

Tüpraş participates in the Integroil Project, which is carried out under the Horizon 2020 Program. The aim of the project is to implement advanced wastewater treatment technologies in the oil industry wastewater recycling and resource preservation areas of the petroleum industry and to develop the latest technologies according to sectorial needs. Within the scope of the project of which Tüpraş is the "implementation partner", advanced refinery technology for the recycling of water from oil refinery wastewater and oil drilling will be developed in accordance with the needs of the sector and applied in the oil industry.

### Recycling of Municipal Urban Wastewater to be Reused in the Industry as Process Water Project

Tüpraş has been implementing the "Recycling of Municipal Urban Wastewater to Reused in the Industry as Process Water" Project since 2014 in cooperation with Kocaeli Metropolitan Municipality ISU General Directorate. With this project, Tüpraş meets all the process water needs at the İzmit Refinery and also provides recycling of municipal urban wastewater. The project, aimed at preserving the sustainable use of resources and the structure of biological diversity, provides approximately 1,250 m³ of hourly reduction in the amount of raw water withdrawn from natural sources. This amount is equivalent to an hourly water use of a city with a population of approximately 130 thousand.

Tüpras was awarded with the first prize in the Process Category at the EU Environment Awards Turkey Program 2015-2016 with the "Recycling of Municipal Urban Wastewater to be Reused in the Industry as Process Water" Project and represented Turkey at the "EU Environment Award."

# WASTE AND HAZARDOUS SUBSTANCE MANAGEMENT

The main objective of Tüpraş's waste management is to reduce the amount of the waste generated, then to recycle the waste after separating at the source, and to dispose non-recyclable wastes by the licensed companies in line with appropriate methods. Monitoring of all the processes from generation of waste to storage, from transportation to its disposal, controlling and reporting of their conformity with related laws and regulations is carried out through the Waste Management Program. Waste management is governed in line with legal requirements included in the national legislation.

Hazardous waste is stored in the temporary hazardous waste storage fields while non-hazardous waste is stored in the general waste fields. In 2016, the amount of waste generated by Tüpraş activities turned out to be 41,506 tons, of which 30,872 tons were hazardous and 10,534 tons were non-hazardous waste. 67% of the waste generated was recycled and non-recyclable waste was disposed of by licensed companies in line with the norms and methods specified in the legal regulations.

#### **BIODIVERSITY**

Tüpraş identifies the potential negative impacts of its activities on natural areas and species, and develops countermeasures against these risks. Therefore, environmental impacts are continuously measured and controlled at all times. In line with risk-based methods, response plans are drawn up and regular drills are organized to ensure preparations in case of emergency.

Tüpraş production facilities operate in industrial areas and there is no protected grade 1 natural

site area, special environmental area, areas protected RAMSAR and similar wetlands. When physical investment decisions are made, a pariticular attention is paid to keep away from areas with special status.

Tüpraş increases biodiversity by forestation projects and brings significant amount of forestland in nature each year. In this context, 600 seedlings were planted in 2016 which prevent 200 tons of CO<sub>2</sub>e emissions.

	2012	2013	2014	2015	2016	
Number of Planted Seedlings	8.836	6.635	1.460	223	600	
CO₂e Remedied Emissions (ton)	2.916	2.191	482	75	200	



### **BUSINESS CONTINUITY**

The business continuity of Tüpraş is of vital importance to the timely and complete supply of the petroleum products needed by the Turkish economy. Tüpraş ensures its business continuity through risk assessment, performance, integrated management systems and continuous improvement practices. Short, medium, and long-term production targets are determined in the light of various scenarios; investment and operation plans necessary for achieving these targets are implemented. In 2016, the company has initiated work-impact analyzes with business units. Through this work, Tüpraş aims to make business continuity management process more visible.

# R&D, INNOVATION AND DIGITAL TRANSFORMATION

Innovation Unit and R&D Center teams, who are experienced in project and technology management, carry out R&D and innovation studies, the most important issues for Tüpraş in recent years. Tüpraş, being aware of the fact that it is necessary to reach technological competence to become a permanent global player, carries out its R&D activities in line with its goal of becoming a leading company in innovation across the world, with a high competition capacity.

The most important commitment of Tüpraş in R&D studies is to continue to produce its own technology and make a difference with innovative projects in the future. Tüpraş, aims to contribute to Turkey's energy sector as well as to its own business processes with every project that it carries out with local means and unique engineering activities.

When conducting R&D projects, Tüpraş takes into consideration the needs and recommendations of

internal and external stakeholders; assesses long term needs, sectoral expectations and regulations; analyzes the "Best Available Technologies" (BAT) in the world; and researches the technologies that can be implemented in the refineries in the future. Tüpraş structured the R&D Center Advisory Committee in 2015 within the scope of its R&D studies. The Committee leads Tüpraş's R&D studies, guides and directs R&D activities while shaping strategic goals, and making long-term technological and innovative studies foreseeable. The Committee consists of sectoral representatives, academics and consultants.

Tüpraş gives great priority to outcomes such as scientific publications and patents for its R&D studies. In 2016, 13 national and 11 international patents were submitted, while 3 national and 2 international patents were registered. Besides patent studies, Tüpraş R&D Center has published 167 scientific publications since 2010.

The knowledge that will emerge after collaborations with universities, research centers and industry is of great importance for the company's sustainable success and future. Tüpraş R&D Center attaches great importance to university-industry cooperation in order to keep the company updated on the technological developments and to provide added value to our country in every aspect. In 2016, a total of 14 university collaboration projects and 12 industrial collaboration projects were carried out.

During the reporting period, Tüpraş has spent over 40 million TL on R&D expenditures. According to the data disclosed by the EU in 2016, Tüpraş R&D Center ranks third among the Turkish Industrial Organizations with regard to the amount of incentives provided within the scope of the Horizon 2020 program between 2014-2016.



### **Energy Network Monitoring and Decision Support System**

Energy efficiency is the most important factor in affecting operational costs and creating competitive edge in the refining sector. "Tüpraş Energy Network Monitoring and Decision Support System" project, which was developed at the R&D Center within this scope, aims to improve energy efficiency by optimizing and monitoring of the refinery energy production. The first phase of the project was completed as part of the TEYDEB project "Development of Refinery Steam and Power Systems Optimization Model". With the project, the company reduced its greenhouse gas emissions by 11,355 tons in 2016.

With Tüpraş Energy Network Monitoring and Decision Support System Project, Tüpraş became a finalist at the Technology Awards, one of Turkey's most prestigious R&D awards of Turkey, jointly organized by TÜBİTAK, TTGV and TÜSİAD.

Digital transformation, which will cause radical changes in all processes of the industrial companies, will be one of the focus points of Tüpraş in the upcoming years. Thus, efforts to increase digitalization in production activities constitute an important part of the R&D activities. Tüpraş follows closely the digital developments in the industry such as internet of things, big data infrastructure and data analysis systems, artificial intelligence, virtual reality, and 3D printers. Tüpraş's priority regarding digitalization is to create an infrastructure that can manage the rich data efficiently and safely, and to create smart systems that

can manage and improve the production and management processes by using advanced analysis methods on this infrastructure.

Within the scope of the digitalization activities in 2016, Tüpraş focused on the projects to prevent unplanned shut-downs and to increase the product quality with the coke and corrosion formation control system in the units, and to improve the profitability by enhancing the soft-sensor account that is called Robust Quality Estimator. With the Digital Twin Project that started during the reporting period, the company aims to model the equipment that are

in use in the refineries. Thus, Tüpraş will ensure optimization, efficiency, speed and consistency in maintenance and production processes. With the iPerm Project, which is another project carried out to increase digitalization, the company will create an innovative monitoring system that enables technical control on remote areas by using Guided Wave technology. Tüpraş aims to create a measurable increase in detection, assessment and monitoring of the errors in the lines, and to reduce the likelihood of problems with The iPerm system.



#### **CUSTOMER EXPERIENCE**

Tüpraş aims to offer the fastest and permanent solutions to the expectations and needs of its customers and to build sustainable relationships with them. The company promises to be equitable and fair to all its customers through an open, transparent and two-way communication by providing an easy accessibility through all the communication channels. Thus, it promises a continuous improvement in products, services and processes. Accordingly, it carries out its activities with a customer-oriented approach, develops customer experience practices and continuously assesses customer satisfaction.

In 2016, survey questions prepared separately for each customer group were shared online with the customers. As a result of the survey, 89% of customers expressed their satisfaction with Tüpraş. In line with the feedback from the customers, the company makes improvements to increase the level of satisfaction.

Within the context of Customer Relationship Management studies in 2016, 1,000 technical workers who don't work in sales department were provided with behavior-oriented communication trainings. The company continued to carry out studies in order to improve awareness and competence of the employees who have

direct relationship with the customers through the general training program called "Being the Hero of the Customer". The Customer Complaint Management Project and the placement of customer feedback desks in all refineries and terminals are among other activities carried out during the reporting period.

### SUPPLIER EXPERIENCE

Tüpraş manages its suppliers in line with the Tüpraş Supplier Management Policy and the Tüpraş Supplier Code of Conduct. Tüpraş builds a close and fair communication with the suppliers, who are considered to be one of the most important factors to sustain its value chain and business continuity. Accordingly, the company organizes meetings with suppliers, invites them to the refineries to inform them.

In order to contribute to the development of its suppliers, Tüpraş organizes trainings and ensures that their working conditions are in compliance with Tüpraş norms with on-site audits. Within this scope, in 2016, 318 person\*hour of training were provided and 254 audit activities were carried out.

Tüpraş, adopts the principle of responding to mutual expectations in its relations with the

suppliers and ensuring highest level of supplier satisfaction. With the annual Supplier Satisfaction Surveys, the company takes steps to strengthen the relationships by measuring supplier satisfaction levels. As a result of the survey in 2016, the supplier satisfaction level was measured as 88.8%.

"Tüpras Supplier Portal" provides suppliers with an easier, faster and more effective communication channel. The portal is an information, reference, news, measurement and reporting source for the suppliers. In order to improve the sustainability of the supply chain, the portal provides suppliers with screens in which the supplier can log in to view their current records and update their own information. In 2016, the company prepared a survey infrastructure enabling suppliers to make their applications through a supplier portal and the test studies has been initiated. Tüpraş commits to evaluate fairly and objectively all applications of the suppliers who accept the stated standards, principles and conditions and to work with these suppliers in procurement processes.

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### **INVESTMENTS**

In order to meet the demands of the developing Turkey, Tüpraş continues to make investments without pausing. During the reporting period, the company spent 291 million USD on investments. As of the end of 2016, Tüpraş has 128 new and 70 on-going medium and small-scale investment projects, which will provide significant contributions to productivity and profitability.

### Kırıkkale Refinery New Power Plant Facility

Tüpraş aims to replace the Kırıkkale Refinery's Power Plant, which meets steam and electricity needs with high cost and low security, with a low cost and safe power plant that benefits from new technologies. As of 2016, the project is at the mechanical completion phase and the plant is to be activated in 2017.

### İzmir Refinery U-7000 Crude Oil Unit Renewal Project

Within the scope of the project that aims to make the existing crude oil unit operate at a maximum sustainable capacity and ensure energy efficiency, the company renovates the furnaces and various other equipments in the unit. The project is to be activated in 2018 after the renewal process is completed.

### Izmit and Izmir FCC Unit Renewal, Flue Gas Treatment and Energy Recovery

The basic engineering studies of the project that has been carried out to increase energy recovery and reactor efficiency at İzmit Refinery FCC unit, were completed. In 2016, the company started to purchase the main equipment and the project is to be completed in the first quarter of 2019. The basic engineering studies of the same project were completed as

well in İzmir Refinery and more detailed engineering studies will start in 2017.

### Flare Gas Recovery Systems

The systems to recover the materials inside the gases that are supplied to the flare gas system have been built at three refineries. The systems in Kırıkkale Refinery have been activated in 2015, and the systems in İzmit and İzmir Refineries have been activated in 2016.

### **New Sulfur Units**

With the activation of the Fuel Oil Conversion Unit, the company decided to build new sulfur units in İzmit, İzmir and Kırıkkale Refineries in order to enable refineries to process crude oil with high levels of sulfur at a maximum capacity. In 2016, the company has started basic engineering studies for the project.

### Kırıkkale Refinery Wagon Maintenance Atelier

Kırıkkale Refinery Wagon Maintenance Atelier, being Turkey's first atelier designed in compliance with the international wagon maintenance and repair standards, will serve to Tüpraş fleet with its 443 wagons. The ECM (Entity in Charge of Maintenance) Certificate of Maintenance, indicating that the maintenance service was in compliance with the international

standards, was received in 2016. The atelier, which is the only organization capable of carrying out maintenance in compliance with five different standards in Europe (VPI, GCU, RID, TSI and TCDD), refurbished 39 wagons and carried out maintenance service for 216 wagons until the end of 2016.

### İzmit Refinery Hydrocracker Thermal Integration

The company started detailed engineering studies of the project that aims to increase energy saving and to enhance the availability of the unit at the İzmit Refinery Hydrocracker Unit. The project will be completed in 2018.

# Renewal of the Crude Oil Furnace of Batman Refinery

With the project initiated in the Batman Refinery, the company aims to increase the efficiency, to establish Emergency Shut-Down/ Burner Management systems and to make them compatible with the natural gas. The project is to be activated in 2017.

#### SYSTEMS AND STANDARDS

The uninterrupted operability of information systems is of great importance for the continuity of Tüpraş activities. For this reason, secure, flexible, and backed-up information infrastructures are constituted. These infrastructures are managed by information system managers with superior competences in terms of professional knowledge and experience, holding various certifications.

International quality and management system standards and business excellence models are adopted in order to ensure standardization in business processes, management systems, and products. Tüpraş manages all of its operations within the framework of the Integrated Management System consisting of ISO 9001 Quality Management System, ISO 14001 Environmental Management System, OHSAS 18001 Organizational Health and Safety Management System, and ISO 50001 Energy Management System. All of the laboratories of Tüpraş have ISO 17025 Laboratory Accreditation Certificate that ensures the credibility and technical competency of the experiment results. Besides, ISO 27001 Information Security Management System is used, which

continuously analyzes threats against information assets, decides which controls will be implemented against what risk, and monitors the accurate management of these controls. Tüpraş identifies and carries out its improvement plans within the scope of the EFQM Excellence Model.

The constant control of management systems is ensured through internal and external audits carried out at the Headquarter and the refineries. In case of any nonconformity is identified. Corrective and Preventive Actions (CPA) are initiated. In 2016, Integrated Management System Internal Audits, for which Tüpras employees are assigned as auditors, were conducted at the Headquarter and the refineries, and necessary actions were taken after determining the areas of improvement. During the reporting period, 60 new standards were set up and the total number of standards increased to 289 in order to improve the business processes and enable them to become a common practice in all refineries.

#### **ASSET MANAGEMENT**

One of the important practices aiming at ensuring the operational reliability and continuity of Tüpraş is asset management. Timely and safe execution of production ensures mechanical and operational integrity. Thanks to the systems and processes developed within the scope of asset management, strategic decisions are actualized uninterruptedly, without any quality or incompatibility issues, and without risking human health and environmental safety.

In 2016, within the scope of Process Safety Management System and Cultural Exchange Project, studies regarding the process safety leadership program, process safety information system, process risk analysis, mechanical integrity and quality assurance, high-risk business procedures, work permit system, contractor management, change management, accident investigations, operational procedures, motivation and awareness, were carried out.

### Logistics

The transportation of fuel products between refineries and sales terminals constitutes the largest share of Tüpraş's land logistics operations. This operation is carried out to a large extent via highways. However, highway transportation generates environmental impact in terms of energy consumption and emissions. On the other hand, railway transportation is safer and has lower environmental impacts compared to highway transportation and it is also a cost-effective alternative. For this reason, Tüpraş began to give preference to railway transportation. The increase in the amount of products transported by railroad continued in 2016 after the completion of modernization works. Within the logistics operation of Tüpraş, the share of the railroad transportation rose up to 26%.

GRI-102-11



#### **DISASTER AND EMERGENCY MANAGEMENT**

At Tüpraş, disaster and emergency management is carried out in line with Emergency Management Center Standard, Tüpraş Safety Policy, Safety Management Standard; Technical Safety, Environmental, and Security Measures Standard Concerning National Marker; Search & Rescue Standard, Electronic Security Systems Procedure as well as contemporary safety management practices and national and international safety norms. Technical Safety Directorate at the headquarters and Technical Safety and Environment Directorates at the refineries fulfill their responsibilities as specified in the related standards on disaster and emergency management.

Tüpraş always makes a certain amount of petroleum products, determined within the framework of legal regulations, available as emergency reserve. Tüpraş carries out stock and storage works in order to ensure the availability of stocks, which might endanger the technical safety integration of refineries and cause production loss in units incurring in significant financial losses, and to supply noncritical stocks within a reasonable period to meet the needs.

Tüpraş constantly improves its practices and plans against all the extraordinary conditions and disasters. Technical safety is always emphasized in order to minimize the probable impacts of accident risks such as fire, power/water cuts, working accidents, earthquake, flood, terror, and sabotage. Technical safety systems are equipped with latest technology products and the risks that might arise from fire

and natural disasters are minimized.

Drills and audits are constantly carried out to ensure the safe action of employees in a probable emergency situation.

Hazard and Operability (HAZOP) works are being carried out in order to identify dangers and major operational problems, to determine how the deviations from normal working conditions and intended design take place, and to systematically review each part of the process in the existing units. In HAZOP works, risks are quantitatively evaluated. Scenario modellings are realized for identified potential major accidents and incidents and intervention strategies are developed.

In 2016, the safety report prepared in accordance with the "Regulation on the Prevention of Major Industrial Accidents and Reduction of Their Impacts" (Seveso-II Directive) was presented to the Ministry of Labor and Social Security. In this study, all the refinery equipment was analyzed in detail and equipment that can potentially cause major accidents was identified in each unit.

#### **SECURITY**

At Tüpraş, security practices are managed within the framework of Tüpraş Safety Policy, Safety Management Standard, Emergency Management Center Standard; Technical Safety, Environmental, and Security Measures Standard Concerning National Marker; Search & Rescue Standard, Electronic Security Systems Procedure and in line with legal regulations, contemporary safety management practices and national and international security norms.

Internal and external audits and security tours are carried out in line with the related standards. Every year, protective security measures are taken against the risks identified through risk assessment processes realized at the refineries. Targets determined according to the main activities carried out within the scope of security management are processed on target cards of all office employees and monitored during the performance evaluation process.

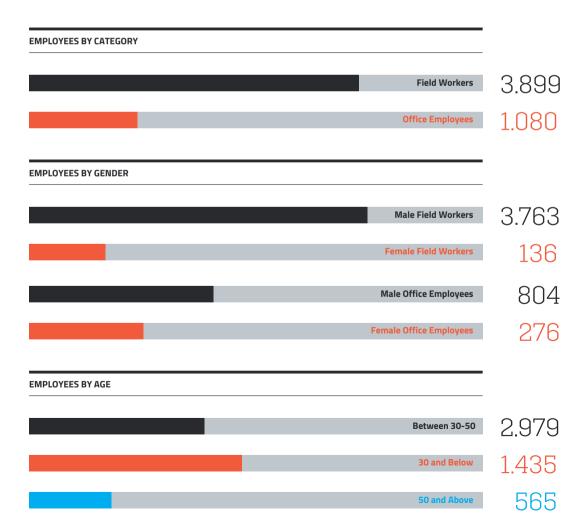
Private security officers receive vocational trainings within the framework of related regulations and company standards/procedures ensure the security of Tüpraş Refineries and the social habitats of employees. Security officers undergo a vocational training, including corporate security standards/procedures and human rights, before starting work. With ongoing trainings during the term of duty, professional and physical competency tests, the company ensures to constantly improve the knowledge and skills of security officers. In 2016, 355 security officers were provided with a total of 5,648 person\*hour of vocational training.

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### LABOUR PRACTICES

Tüpraş provides its employees with fair, equal, safe and healthy workplace where human rights are protected. It strives to transform the qualified workforce into a permanent supremacy in the global competition by supporting occupational and personal competence of its employees. Tüpraş performs its human resources processes with a fair, objective and systematic approach in accordance with international norms and legal regulations such as UNGC and OHSAS 18001.

Employees take active roles in decision-making, implementation and performance evaluation processes through mechanisms such as Occupational Health and Safety Committees, Employee and Union Representations. Performance results from human resources are continuously monitored and subjected to audits.



GRI-102-7

#### **INCLUSIVE WORKPLACE**

Tüpraş operates in accordance with the universal human rights as well as complying with United Nations Global Compact (UNGC) provisions in its operations and it does not take part in human rights violations in any way and promotes the development of human rights within its area of influence. Expecting from its suppliers and business partners to adopt the same principles, Tüpraş closely observes this approach in the establishment and continuation of business relations.

At Tüpraş where understanding of civil society and awareness of organized action is widely accepted, employees are supported to be part of unions and non-governmental organizations (NGOs) provided that they are established and organized within the framework of laws. All employees at Tüpraş are free to be a member or a founder of these organizations and other various initiatives without prior consent of the managers at work. Tüpraş, where all the hourly

paid employees work with a labor contract, is one of the companies in Turkey with the highest rate of union member employees with the general unionization rate of 78%. During the reporting period, 33 Tüpraş employees took charge in union management.

All processes regarding Tüpraş employees from recruitment to the termination of the labor contract, are handled with objective criteria. All employees are offered equal opportunities regardless of gender, age, religion, ethnicity or any other personal trait, and any discriminative practices or treatments reminiscent of discriminative nature are prevented. Although differences may occur in certain elements such as overtime, performance bonuses and other similar benefits depending on job evaluation and grading of the employee within the company remuneration policy, all Tüpraş employees receive equal wages as long as they perform the same jobs.

Tüpraş does not allow any forced or compulsory labour, child labour practices or cases reminiscent of these practices. Business partners and suppliers of Tüpraş are required to adopt these principles. Suppliers are audited with visits to see if they comply with these principles that are clearly stated in the product and purchase contracts.

In order to increase women employment and the number of female senior executives, Tüpraş acts in compliance with the "Declaration of Equality at Work". Tüpraş encourages women to participate in the refinery sector, by providing vocational training and internship opportunities for women, and granting legal rights such as maternity leave in a favorably extended fashion. By 2016, the number of female employees in Tüpraş increased by 4% compared to the previous year and reached to 412.

### I Support Gender Equality

Tüpraş conducts projects with the theme of 2015-2017 "I Support Gender Equality" which is a division of "For My Country" corporate social responsibility project of Koç Holding. Within this scope, in 2016, Tüpraş instructors reached 3,184 of 4,982 employees and 665 stakeholders most of which were students with "Knowledge Mill Seminars" on gender equality, organized by 24 volunteers. Besides improving the physical environment of female field workers performing in the refineries, the company carried out studies to support the main project.

At Tüpraş, sector figures obtained through market research and performance results are taken as basis when determining employee wages. Under Tüpraş Remuneration Policy, wages received by Tüpras employees compete with average sector wages. By 2016, the minimum base wage for hourly paid employees is 2 times higher than the general minimum wage while this rate is 3.3 times higher for monthly paid employees. In addition to base

wages, Tüpraş employees earn additional income through performance-based bonuses.

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### **Employee Benefits**

Tüpraş aims to provide its employees with a satisfying workplace. To this end, the company carries out practices that take into consideration the mutual benefit of Tüpraş and the employees. Employees are provided with many fringe benefits. The Flextra Project aims to make the fringe benefits more flexible and tailored to the needs of the employees.

Apart from being covered by public social security system, all Tüpraş employees benefit from the private health insurance and the optional pension plan implemented through Koç Holding Pension and Support Fund. Employee families can also benefit from the health insurance program. By the end of 2016, 4,599 employees benefited from the optional pension plan of Tüpraş.

Within the scope of "My Koç Family" Program, employees can benefit from the products and services provided by Koç Group companies, with special price advantages during their retirement period.

Tüpraş provides its employees with houses of duty in accordance with their needs. Priority in the allocation of housing is given to technical employees and to those having the qualifications and abilities to serve in case of unusual developments, so that they can live close to the facilities for the sake of continuity and safety of production.

Within the scope of the LEAP Employee Support Program, Tüpraş provides a professional callcenter support service that facilitate the lives of employees and their families in many areas, such as medical consulting, psychological counseling, information and so on. In addition, in 2016, industrial psychologists conducted screenings, trainings and individual psychological support activities, in all the refineries within the scope of "Support at Work".

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### **EMPLOYEE DEVELOPMENT**

Tüpraş, on the one hand, attracts qualified workforce and employs in the most effective and productive manner, on the other hand carries out career planning, development and training practices for the development of personal and professional skills of the employees. Tüpraş reflects the expectations and suggestions of the employees in company management processes in order to increase the employee satisfaction and commitment to Tüpraş. Workplace and social life standards are constantly improved in line with the opinions and demands of the employees.

### **Performance and Career Management**

Performance evaluations of Tüpraş employees are held annually while multi-dimensional scorecard system is performed to evaluate the performance of office employees. In meetings held throughout the year, objectives are set at the end of the year and employees receive feedback about their performance. Besides, in mid-term meetings, behavioral models and competence of employees are examined and potential fields of strength and development are identified. As for field workers, senior managers provide feedback on periodical results and deliver expectations on objectives for the upcoming period.

A talent management process, which enables more efficient and accurate allocation of human resources and the identification of development needs, is the guideline for employment, promotions and appointments. In 2016, Tüpraş continued to work on talent management project by extending its reach. Critical positions

were determined with Success Factors software modules; backup plans were created and the potential of the employees were determined with 9-box approach. Tüpraş keeps on working on the installation of the development-planning module, in order to measure, evaluate and improve the competencies of the employees. The books and training programs have been prepared in 2016 within the framework of the Refinery Training Program initiated in cooperation with METU Chemical Engineering Faculty, in order to increase the knowledge, skills and competencies of the workforce.

### **Professional and Personal Development**

Occupational and personal development of its employees is among the most important priorities of Tüpraş. Tüpraş increases its competitive edge in the sector by supporting the development of its employees through various training programs. Trainings are organized with the principle of giving equal opportunities to all employees. All employees are provided with trainings, taking into consideration the results of the business processes and career planning studies. Essential technical competencies of employees are identified and trainings are designed in accordance with their needs.

Each year, more than 100 employees participate in leadership training programs, which aim to strengthen leadership competencies of employees. When they complete their first year, employees receive trainings on topics such as self-knowledge, communication and team skills. Therefore, employees are prepared for

leadership positions through team and work management trainings. In 2016, 8,015 employees were provided with leadership trainings.

Tüpraş carries out graduate programs in cooperation with universities in order to train the workforce in line with the expertise that the sector needs. While Tüpraş employees receive a master's degree education as an extension of their career programs, those students who wish to continue their academic learning are also welcome to benefit from those programs. Master's degree and MBA programs are financially supported by Tüpraş.

In 2016, 5,093 employees are provided with 284,878 person\*hour of training. Each field worker received 54,3 hours of training and each office employee received 61,6 hours of training on average. The average for the male employees was 52 hours and 56,3 for female employees.

TRAININGS	2016
Number of Participants	
Category	
Field Workers	3.976
Office Employees	1.117
Gender	
Female	420
Male	4.673
Total Training Hours (person*hour)	
Category	
Field Workers	216.043
Office Employees	68.835
Gender	
Female	21.827
Male	263.051
Average Training Hours Per Employee	
Category	
Field Workers	54,3
Office Employees	61,6
Gender	
Female	52,0
Male	56,3

#### **EMPLOYEE ENGAGEMENT**

Tüpraş, which has a participatory management approach, receive the opinion of its employees through target distribution meetings, Occupational Health Safety (OHS) committee meetings, suggestion systems, surveys, collective bargaining agreements and social activity clubs, and take into consideration these opinions in process improvement studies. One of these tools, Recognition, Appreciation and Rewarding System increases employee motivation and commitment by highlighting their behaviors and efforts, which contribute to the success of the company. With the Refined Suggestions System, which is similar to Recognition, Appreciation and Rewarding System, employee creativity and engagement are encouraged by taking the suggestions of employees on improving the business processes and company practices. In 2016, 12 of the 415 suggestions from employees were put into practice.

Tüpraş collects employee opinions about their work environments through satisfaction and engagement surveys and identifies areas of improvement. As a result of the survey conducted in the reporting period, the satisfaction rate in Tüpraş was measured as 53%. With the successful practices put into practice, Tüpraş increased the engagement of the field workers.

Tüpraş attaches great importance to the involvement of its employees in social responsibility activities as well as in management processes with their ideas and suggestions. Tüpraş employees get organized for their community's development and hold activities in various fields from environment, education, and sports to culture and arts. Tüpraş supports these employee initiatives and guides employees to organize activities that allow them to transform their personal

abilities into society benefit and to provide income for non-governmental organizations through Social Activities Clubs at the refineries

Within the scope of the "Mosaic Cultural Development Project", the company conducts a training program called "Being a Tüpraş Member", that covers all the employees, in order to expand "Tüpraş Values and Working Culture Principles" determined in accordance with the opinions and suggestions of the employees.

Within the scope of the program, which is to be completed in 2018, managers and office employees were provided with trainings in 2016.

### The Most Successful Koç Members

In order to reveal and share, to recognize and appreciate the success of the employees, the company has been organizing the "Most Successful Koç Members Competition" since 2003. Tüpraş joined the competition with 8 projects, and 2 of these projects were selected for the finals. With the project "Recycling of Municipal Urban Wastewater to Reused in the Industry as Process Water" got the 1st place in the category of "Adding Value to the Environment and Society", and received the 3rd place in the category of "Digitalizing" with the "Energy Network Monitoring and Optimization System" project.

### OCCUPATIONAL HEALTH AND SAFETY

Health and safety of all Tüpraş employees and stakeholders on operation sites are ensured by high-level safety measures. Tüpraş improves itself in line with the goal of identifying all risk levels in all its operational activities and eliminating or reducing them to acceptable risk levels within standards. The employees and the contractor employees are expected to comply with the Health, Safety and Environment (HSE) standards created within this scope. Health and safety processes on all Tüpraş operation sites are managed in accordance to OHSAS 18001 Standard, and the certification is renewed periodically through independent inspections.

35 members, 10 of whom are employee representatives, take charge in the 5 Tüpraş Occupational Health and Safety Committees at Tüpraş. While this number represents members legally eligible to cast votes, nearly 100 individuals participate in the committees. Apart from full members, participants also consist of officials from contractor companies, all unit managers

and representatives from units.

In Tüpraş, the Occupational Health and Safety performance is monitored through key performance indicators and improved on a regular basis. In 2016, 14 new indicators were identified and published as a standard in order to monitor and improve the OHS performance.

To increase their knowledge and awareness of

occupational safety, Tüpraş organized trainings for company employees and contractor company employees in 2016 as well. Within the scope of the project, 9,647 Tüpraş employees and 12,985 contractor company employees received 135,951 person\*hour of training.

OCCUPATIONAL HEALTH AND SAFETY TRAININGS	2016
Tüpraş Employees	9.647
Business Partner Employees	12.895
Tüpraş Employees (person*hour)	85.609
Business Partner Employees (person*hour)	50.342

### **Practices Regarding Contractor Companies**

Tüpraş supports the OHS performance of its contractors with training activities and various other tools. Within this context, the company made certain improvements in 2016 as well. The Contractor's HSE Terms and Conditions have been revised according to current legal requirements and the personal protective equipment of the contractor has been equalized to Tüpraş's equipment. Fire resistant work clothes used by Tüpraş employees were distributed to all employees of the contractor companies and their use was made obligatory.

#### **OCCUPATIONAL SAFETY**

By managing occupational safety processes with an effective risk assessment approach, Tüpraş reduces occupational safety risks and increases the level of measures taken against potential risks. Safety risks are eliminated by adopting various international and corporate standards, risk assessment systems and working procedures such as Risk Assessment Table (RAT), Hazard and Effects Management Process (HEMP), Incident Classification, Research and Reporting (ICRR), Contractor-HSE Management System, Tüpraş Tracking System (TTS).

Tüpraş carries out analysis and learning procedures in order to ensure occupational safety. Thus, it prevents any incidents that have taken place despite the precautions from happening again in the future. In 2016, 11 standards have been revised and 5 new standards have been published.

- Within the scope of "Weekly Accident Speeches" project initiated with the aim of improving OHS and Process Safety Incident Communication, all the incidents regarding OHS and Process Safety, such as accident, minor intervention, fire, environmental pollution, unsafe situation and near-mis, reported by four refineries are screened and the most important topics are listed.
- In the "Couldn't We Prevent These Accidents?" meetings that are held monthly for all Tüpraş employees and contractor employees, accidents and near-mises are shared and prticipants evaluate what we could do better.
- Refinery units inform employees with a weekly "Safety Speech". In these speeches, accidents and near-mises that occurred in Tüpraş or in the world are presented and employees are informed about health and safety topics.
- Within the scope of "Visible Leadership", Tüpraş managers participate in behavior oriented safety tours. This practice aims to encourage positive and safe behaviors at the refineries, to increase general safety awareness, to monitor field practices of safety standards, and to minimize accident potentials.

### Tüpras Safety Principles

"Tüpraş Safety Principles", which will start to be implemented in line with the "10 Indispensable Rules" that define Tüpraş's basic working rules, were defined in 2016. And promotion and training campaigns regarding the determined 8 principles have been started in related refineries.

- 1. All accidents are preventable.
- 2. Taking safety to the center of every work we do; we must demonstrate a visible and exemplary leadership with our decisions and practices at every level.
- 3. The risks should be determined and risk management should be ensured through preventive measures.
- 4. All accidents and incidents should be shared and the necessary lessons should be taken so that they won't repeat.
- 5. Establisment of employee engagement is of great importance.
- 6. Effective communication is of great importance.
- 7. Training and awareness is the basis of safety.
- 8. Safety audits should be carried out effectively.

	2012	2013	2014	2015	2016	
Accident Frequency Rate	1,5	1,1	1,6	2,5	1,9	
Accident Severity Rate	289	26	308	315	354	
Fatalities	1	0	2	1	1	

#### **OCCUPATIONAL HEALTH**

Tüpraş believes that sustainable development and business continuity are only possible with a healthy workplace and environment. Therefore it works to protect employees from occupational and general diseases. In this direction, Tüpraş offers periodic check-ups to employees and takes preventive measures featuring constant health services as well as vaccination. Thanks to the measures taken, no occupational diseases

were reported neither among Tüpraş nor contractor company employees.

To identify possible health risks in workplaces, Health Risk Assessments (HRA) are held in all refineries. Throughout the assessments, field-based chemical, physical, biological, ergonomic and psychological dangers are examined in detail.

Türpaş organizes trainings to inform employees about healthy life and preventive measures. Employee families as well as contractor company employees can also benefit from these trainings.

## COMMUNITY DEVELOPMENT

As a corporate citizen, Tüpraş aims to continuously increase the life quality and prosperity of the society with an approach that is sensitive to the development of the country and society in which it operates. Tüpraş fulfills its social responsibilities through social responsibility projects that create value for society, and contributes to the local economy with its support to the country's economy.

#### **CONTRIBUTION TO THE LOCAL ECONOMY**

As Turkey's sole refining company, Tüpraş acts with strategical responsibility and works to provide the petroleum products necessary for the development of the economy. Tüpraş provides significant direct and indirect contributions to the economy of Turkey and creates a large economic impact area, with the local supply oriented supply chain applications, vocational training projects for business partners and students, and the tax payments.

The most direct contribution of Tüpraş to the country's economy is the tax payments. As Turkey's biggest taxpayer, The direct and indirect tax revenues occurring due to Tüpraş's

activities, constitute an important part of the total revenue of Turkey. In 2016, Tüpraş contributed 37.6 million TL to the country's economy through tax payments and similar liabilities. Tüpraş's share of Turkey's total tax revenues is 8,15.

Tüpraş makes significant contributions to the country's economy with its wide value chain, which includes thousands of suppliers. The value chain that Tüpraş's operations create, offers employment opportunity for tens of thousands of people. Tüpraş aims to contribute to the local economy through its supply expenditures. In this respect, while conducting the purchase

activities, Tüpraş gives priority to local suppliers among all the suppliers meeting the required norms. In 2016, 63% of the procurement activities were made through local suppliers.

Tüpraş provides an indirect contribution to the country's economy with its support to vocational trainings. During the reporting period in which vocational trainings of business partners, high school and university students continued to be supported, 2,749 high school and 3,278 university students had internship opportunity at Tüpras.

### Project for Improving Vocational Education and Training System (MEGEP)

Signed within the scope of the Tüpraş Technical Education Program between Tüpraş and the Ministry of National Education in 2007, this protocol involves cooperation to train technical staff in Refinery and Process branches in the field of Chemistry Technology. Tüpraş takes part by building the necessary educational environment, supplying materials and forming the educational staff, and it has continued its MEGEP projects in the reporting period too. In this context, in 2016, MEGEP students continued their internship at Izmit, Izmir and Kırıkkale Refineries and from time to time they had the opportunity to make observations on the field at the refineries. Besides, volunteer coaches organized personal development trainings and a museum tour activity for MEGEP students at Izmit Refinery.



### **SOCIAL RESPONSABILITY**

Tüpraş supports social development with its long-term social responsibility projects in education, environment, culture-arts and sports. Tüpraş makes periodical surveys every two years to measure its perception and status

among various stakeholders and takes these results as a guide while planning social projects. Besides social projects, Tüpraş supports other initiatives and projects financially and operationally, and contributes to institutions in targeted

areas through donations and sponsorships. In 2016, 24.4 million TL worth of funds were allocated to project, donation and sponsorship activities.



#### **EDUCATION**



#### FIREFLIES ON THE ROAD

Tüpraş is the sponsor of the 5 Firefly Mobile Learning Units founded by The Educational Volunteers Foundation of Turkey (TEGV) since 2008. Firefly Mobile Learning Units reach children in areas where TEGV cannot reach by creating child-friendly spaces in flatbed trailers, and providing service in the school gardens or around the schools in cooperation with the Ministry of National Education.

Firefly Mobile Learning Units carry out its activities with two different models namely thematic and standard activities. Thematic Fireflies are "Traffic Firefly Mobile Learning Unit", "Dreamwalker Firefly Mobile Learning Unit" and "Science Firefly Mobile Learning Unit". "Knowledge is My Job", "Learn Maths Having Fun", "Learn Science Having Fun", "I Read I Play", "Drama Workshop", "Have Fun, Learn, Hygiene" are training programs that allow children to learn while having fun. In 2016, Firefly Mobile Units reached 10,596 children in 7 cities. From the year 2008 when we became part of the project for the first time, mobile units reached 243,695 children in total.



## TEGV BATMAN IS IN THE 4th ISTANBUL ART BIENNIAL OF CHILDREN AND YOUTH WITH THE 50th ANNIVERSARY LEARNING UNIT SUPPORT

12 students from Batman who are a part of The Educational Volunteers Foundation of Turkey Batman 50th Anniversary Learning Unit, participated to the 4th Istanbul Art Biennial of Children and Youth with the support of Tüpraş.

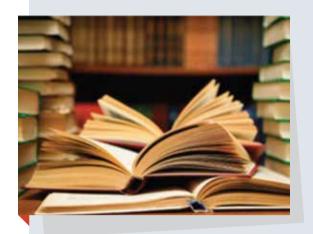
The team who mesmerized the audience in the Ortaköy Afife Jale Theater, participated in the Biennale with the "Local Folk Dances" project, which they developed to improve positive attitudes and skills regarding art, to recognize different cultures and to adopt a culture of coexistence in peace. The students who performed vanishing local dances got great acclaim.



#### **IZMIT SEK THEATER CLUB STAGED A PLAY FOR TEGV**

Tüpraş İzmit Refinery SEK Theater Club debuted the theater play "The Visit", written by Friedrich Dürrenmatt, adapted by Sevil Onaran, and directed by Aydın Sigalı, in 2015 and the revenue was donated to TEGV. The club performed the second show again for TEGV in 2016.

The club staged "The War Will Break Out After The Interval" written by Oldrich Danek, translated by Yücel Erten and directed by Demet Saka, with the choreography of Berkan Beşçınar, for the first time in 2016. The SEK İzmir Theater Club, which performed at Aliağa Tüpraş Public Education Center with its fourth theater play, donated the revenue of the show to "Our Energy Never Ends Scholarship Fund".



#### WE COLLECT BOOKS FOR CHILDREN

In order to bring children reading habits, volunteers of the Batman Refinery distribute the books that are collected at the headquarters and other refineries to elementary schools in Batman, which are in need of books. Besides, volunteers of Tüpraş organize reading days, and the children are encouraged to read books. 320 books were donated to an elementary school in 2016, and the total number of donations reached 6,920 books since 2013.



#### **APRIL 23rd EVENT AT THE IZMIT REFINERY**

The event held on April 23rd at the Izmit Refinery, was organized with the aim of introducing the work environment of their parents to the children of our employees working at Izmit Refinery and the headquarters, and raising awareness of the fact that our most important priority is safety. Thanks to the event, for the first time in the history of Izmit Refinery, employees' partners and children had the opportunity to visit the refinery. The refinery hosted a group of 400 people consisting of children and their parents for the activity where the participants were informed about the refinery, watched a safety presentation, participated a field trip and listened to a children choir concert.



#### **CHILDREN OF TÜPRAS ARE TRAFFIC DETECTIVES**

OPET, which contributes to the social development through social responsibility projects, carried out "Traffic Detective" training in 2016 for İzmit Refinery's employees' children, within the scope of the "Traffic Detectives Project", which reached 2,500,000 students in 81 cities. During the training, the children and their families were reminded about the vital importance of traffic rules in daily life with the emphasis of "Life Belt." OPET's mascot OPEDO also took part in these activities and the children who completed the training, won the title of "Traffic Detective".

#### **EDUCATION**



#### **MEETING WITH THE TEV SOMA SCHOLARS**

The traditional "Back to School "meeting, one of the activities of the Turkish Educational Foundation carried out with the aim of increasing the motivation of the Soma scholars, was held in Izmir Refinery this year. Approximately 20 students from 6 to 14 years olds attended the event that was realized with the support and contribution of 4 Tüpraş volunteers. The students who came to the meeting with their parents had fun hours with animations and games. Educational chemistry sets were given as a gift to the children.



#### SPONSORSHIP TO THE APRIL 23rd INTERNATIONAL CHILDREN'S FESTIVAL

In the "April 23 International Children's Festival Education and Entertainment Fair" gala program, organized by Kocaeli Metropolitan Municipality on April 23–24, 2016, Tüpraş sponsored the children's musical "Wonderful Wings", "Live Sculpture Display" including with 4 different characters, the "Venetian Carnival" that performed in the kite carnival within the scope of the festival. This year, 1,000 children from 41 countries attended the festival, which Tüpraş has been sponsoring for five years.



#### KOÇ UNIVERSITY SOCIAL SCIENCES OUTSTANDING SUCCESS SCHOLARS-HIP PROGRAM

Tüpraş, aiming at serving the development of social sciences in Turkey, and contributing to Turkey's intellectual life by supporting studies in this area, supports Koç University Social Sciences Outstanding Success Scholarship Program, launched in the academic year 2011-2012. 4 students completed their PhD, while 6 students still continue their PhD program with the support of Tüpraş in Archeology and Art History, International Relations, Psychology and Design, Technology and Society departments.



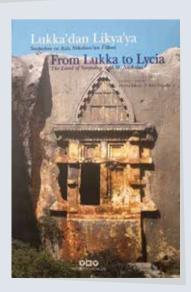
#### **KOC UNIVERSITY ANATOLIAN SCHOLARS PROGRAM**

Starting with 14 students in 2011-2012 academic year and reaching 289 students in 2016; Koç University's Anatolian Scholars aim to give equal opportunity of education to the successfull students who are in need of scholarship. 2 new students participated in the program with the support of Tüpraş and the number of students Tüpraş has funded so far has risen to 10.



#### **OUR ENERGY NEVER ENDS SCHOLARSHIP FUND**

Tüpraş continues to develop social responsibility projects under the "Koç Holding's I Support Gender Equality for My Country" project. In order to draw attention once again to the "education and women" subject, which is one of the negative indicators of gender inequality, Tüpraş formed "Our Energy Never Ends Fund" with the cooperation of Turkish Educational Foundation. The first meeting was held on October 11st, "International Day of the Female Children" in the İzmit Refinery, then followed by Izmir, Kirikkale and Batman Refineries. In the meetings organized with the participation of TEV officials, topics such as donation in Turkey, the approach of the citizens, the place of non-governmental organizations in this field, education in Turkey, women's literacy rates, women's participation in the workforce, TEV and its half-century success story were shared with Tüpraş employees.



#### ANATOLIAN CIVILIZATIONS PUBLICATION SPONSORSHIP

Tüpraş continues to support our cultural heritage with the project of Anatolian Civilizations book series, which will consist of 10 books, with the cooperation of Yapı Kredi Culture and Art Publishing. Following the works of "Change in Urartu East", "Phrygians, in the Shadow of the Monuments in the Land of Midas", "Hittites, An Anatolian Empire" and "Pergamon, a Hellenistic Capital in Anatolia", the fifth book of the series "Sarpedon and the Land of St. Nicholas From Lukka to Lycia" was published with the sponsorship of Tüpras, in 2016.

#### **CULTURE & ART**



#### YOUNG MUSICIANS ON WORLD STAGES

The "Young Musicians on World Stages" project, supported by Tüpraş since 2013, and launched by the internationally renowned pianists Güher and Süher Pekinel seven years ago, with the goal of bringing the talented conservatory students of our country to the world stages, continues. Within the scope of the project, Veriko Tcuhumburidze (Violin), Dorukhan Doruk (Violoncello), Yunus Tuncalı (Piano), Doğa Altınok (Violin), Can Çakmur (Piano), Duygu Eliz Erkut (Ballet Dancer) and Tolga Atalay Ün, who was joined the project in September 2016, continue their successful journey in their own field.



#### **IKSV 20th ISTANBUL THEATER FESTIVAL**

The Istanbul Theater Festival, organized by Istanbul Foundation For Culture and Arts (İKSV), and co-sponsored by Koç Holding Energy Group Companies Aygaz A.Ş., Opet A.Ş. and Tüpraş, has taken place for the 20th time, in 2016. The festival met with the audience with a rich program consisting of various theater plays, dance shows, performances and other activities from Turkey and abroad.

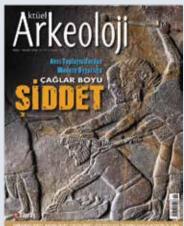


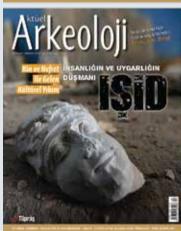
#### WE CARRY ON THE SPIRIT OF BATMAN REFINERY AT RAHMİ M. KOÇ MUSEUM

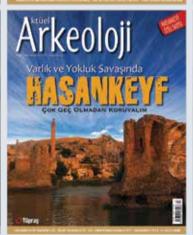
"We Carry on the Spirit of Batman Refinery at Rahmi M. Koç Museum" project started with the individual efforts of six employees who believed that the disposal of old equipment that was part of the refinery process would be a huge loss. In order to carry into future the past of the Batman Refinery, the team donated the refinery's equipment that are out of use and that have qualities specific to the period when they were in use, to Rahmi M. Koç Museum.

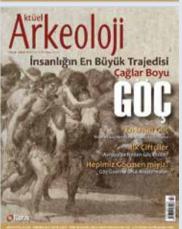












#### **AKTÜEL ARCHEOLOGY MAGAZINE PUBLICATION SPONSORSHIP**

Aktuel Archeology Magazine, founded with the purpose of telling Anatolian history to Anatolian people in 2007, continues to be published with the support of Tüpraş since 2010. Aktuel Archeology Magazine, which imprints 60,000 copies in average per year, and reaches millions of people through its website and social media accounts, continues to work for a well-preserved Anatolia for the future generations.

#### **ENVIRONMENT**



## HAPPY WASTES PROJECT – ALÍAĞA PACKAGING WASTE DECOMPOSITION MOVEMENT AT ALÍAĞA

The 7th traditional kite festival taking place within the scope of the Happy Wastes Project, initiated at Izmir Refinery in 2010 to separate and recycle packaging wastes, was held on May 19th, at Aliağa Cumhuriyet Square. At the festival 3,250 kites, prepared for the Tüpraş employees and people of Aliağa, floated in the sky.

Within the scope of the "Happy Wastes Project – Aliağa Packaging Waste Decomposition Movement at Aliağa", 80 students from elementary schools in Aliağa were hosted in the refinery. The "Happy Wastes" project team organized trainings for students in order to raise awareness of environment, to emphasize the role of the waste sorting and recycling on the protection of the environment and natural resources.



#### TRAININGS TO RAISE AWARENESS FOR RECYCLING WASTE, ENVIRON-MENT AND HEALTH

Tüpraş Batman Refinery employees carried out the Trainings to Raise Awareness for Recycling Waste, Environment and Health at 8 schools in Siirt, Bitlis, Batman and Tatvan, and provided 1,105 students with 2,210 person\*hour of training, in 2016. In this project, community and building members also received training upon request. As a result of the awareness raising activities, waste battery, waste oil and plastic caps were collected.



#### "WE COLLECT PLASTIC LIDS" TO HAVE NO BARRIERS

In 2013, volunteers of Batman Refinery participated to the project initiated by the Ministry of Environment and Urbanization. 720 kg of lids collected with the project were sent to Spinal Cord Paralytics Association of Turkey and 1 motor wheelchair was delivered to a 9th grade student. With the project that was completed during the reporting period, a total of 2,150 kg of lids were collected and 7 motor, 2 manual wheelchairs have been delivered to disabled people.



#### "WE COLLECT WASTE OILS" TO HAVE NO BARRIERS

The campaign, launched by volunteers in the Batman Refinery, continued in 2016 as well. The revenue derived from the recycling of waste oils, was used by a licensed recycling company for the delivery of the hearing aids, wheelchairs and other apparatus for the disabled people. In 2016, 60 liters of waste oils were delivered to the oil recycling company.



#### 5th JUNE WORLD ENVIRONMENT DAY ACTIVITIES OF BATMAN GOVERNOR-SHIP PROVINCIAL DIRECTORATE OF ENVIRONMENT AND URBANIZATION

With the activity organized by Tüpraş Batman Refinery with the cooperation of the Provincial Directorate of Environment and Urbanization, students painted the concrete walls of 300 meters long, surrounding the buildings and settlements of the Provincial Directorate, with the themes emphasizing environment and nature awareness and thus created a colorful image of urban aesthetics and environmental perception. The field application of the theme created by the Tüpraş employees, included the policy and management approach of the Ministry of Environment and Urbanization. The design was applied by the artist Fikret Atay who has art pieces of visual arts, and the volunteer visual arts teachers. Within the scope of the project enriched with the participation of Batman Governorship and the Provincial Directorate of National Education, 20 students and 5 visual arts teacher from 5 nearby schools actively participated in the project as stakeholders.

#### **SPORTS**



#### THEY DON'T KNOW NO BARRIERS

Established in 2006, Batman Sports Club Association for the Handicaped competes in Turkish 2nd League Wheelchair Basketball Games since 2007-2008 season. The club, featuring 36 sportspeople in total, including 21 licensed sportspeople, that gave hundreds of disabled people an opportunity to be involved in sports from the very beginning, continues its practices with the goal of moving to the 1st League. Tüpraş continues to support the team that shows that they do not know any barriers with their performance and that has been the Regional Champion in the 2nd League, in 2016.



#### BATMAN TÜPRAŞ SPORTS FOOTBALL CLUB ENGAGES YOUTH IN SPORTS

Founded by Tüpraş Batman Refinery's volunteer employees in 1995, Tüpraş Sports Football Club offers for Batman's youth a platform to consciously perform sports in a healthy environment, and encourages their self-development in football. The Club successfully manages its collaborations with Youth Sports Directorate, Batman Amateur Sports Clubs Federation, Turkey Football Federation and many other clubs. By 2016, Tüpraş Football Club has 104 sportspeople aged between 10-18; 44 of whom are licensed, and 60 of whom are non-licensed. It achieves significant success in regional and national competitions with sportspeople aged between 8-13 and 19. One of the football players trained in Tüpraş Sports Club was successful to be selected for the National Team and many football players have been transferred to other professional football clubs. Tüpraş Sports Football Club got 16 championships in 4 branches.

# **CORPORATE MEMBERSHIPS**

NAM	E OF THE ORGANIZATION
1	AKİB – Mediterranean Exporters' Association
2	ATO – Aliağa Chamber of Commerce
3	BATSO – Batman Chamber of Commerce and Industry
4	Bosphorus Energy Club
5	DEK – World Energy Council Turkish National Committee
6	DTD – Raiway Transport Association
7	EBSO – Egean Region Chamber of Industry
8	ICC – Turkish National Committe
9	İMMİB – İstanbul Minerals and Metal Exporters Association
10	İMEAK – İstanbul and Marmara, Egean, Mediterranean and Black Sea Regions Chamber of Shipping
11	IDTO – İstanbul Chamber of Shipping
12	İzmit Sailing Club Sports Association
13	KALDER – Turkey Quality Assocaition
14	KHEYSV – Koç Holding Pension and Support Association
15	KİD – Corporate Communications Association
16	KKTSO – Kırıkkale Chamber of Commerce and Industry
17	KOCYON – Koç Yöner
18	KSO – Kocaeli Chamber of Industry
19	KTO – Körfez Chamber of Commerce
20	SKD – Council for Sustainable Development
21	TBD – Turkish Informatics Association
22	TBYDE – Technology Informatics Management and Audit Institute Association
23	TEID – Ethics and Reputation Society
24	TEGEP – Education and Development Platform Association
25	TKOJD – Turkish Cogeneration Association
26	TKYD – Turkish Corporate Governance Association
27	TOBB – The Union of Chamber and Commodity Exchanges of Turkey
28	TURMEPA – Clean Sea Turmepa
29	TÜMAKÜDER – Tüm Accumulator Exporters and Manufacturers Association
30	TÜRKTRADE – Turkish Foreign Trade Association
31	TÜSİAD – Turkish Industry and Business Association
32	TÜYİD – Turkish Investor Relations Association

# **PERFORMANCE DATA**

OPERATIONAL PERFORMANCE	2012	2013	2014	2015	2016
Processed Crude Oil (thousand tons)	22.118	21.568	20.043	27.559	28.348
Production - Refining (thousand tons)	21.867	21.175	20.101	27.268	27.928
Sales (thousand tons)	25.441	24.083	22.194	28.739	30.255
Product Exports (thousand tons)	5.860	4.844	5.333	6.494	5.491
Product Imports (thousand tons)	4.387	3.805	2.920	2.999	3.749
White Product Ratio in Total Production (%)	70,3	72,4	71,3	75,4	77
Capacity Utilization (%)	81,6	79,1	74,9	102,5	105

FINANCIAL AND ADMINISTRATIVE PE	RFORMANCE	2012	2013	2014	2015	2016
Net Sales (million US dollars)		23.677	21.595	18.165	13.751	11.547
Operational Profit (million US dollars)		631	22	199	1.012	781
Profit Before Taxes (million US dollars)		753	7	84	819	644
Profit After Taxes (million US dollars)		817	629	667	938	594
EBITDA (million US dollars)		715	560	338	1397	1.125
Net Debt (cash) (million US dollars)		551	1.340	1.663	2.370	1.729
Return on Equity (%)		31,8	24,1	25,9	35,0	21,9
Net Working Capital (million US dollars)		595	-296	-677	-53	43
Investment Expenditure (million US dollars	)	974	1201	959	344	213
Profit per Share (TL)		5,85	4,78	5,83	10,18	7,06
Gross Dividend per Share (TL)		3,85	1,58	-	6,5	6,22
Net Dividend per Share (TL)		3,27	1,34	-	5,53	5,29
Paid Taxes (million TL)		26.643	28.607	23.433	30.796	37.548
Corporate Governance Rating		9,1	9,34	9,31	9,44	9,42
Fitch Ratings Foreign Currency Long Term	Rating	BBB-	BBB-	BBB-	BBB-	BBB-
Fitch Ratings Local Currency Long Term Ra	ting	BBB-	BBB-	BBB-	BBB-	BBB-
Procurement Operations (million TL)		348	386	769	1.573	1.921
	Domestic	177	214	305	1.122	1.200
	Special Production	20	14	20	12	5
	Overseas	151	158	444	439	716
Domestic Procurement Rate (%)		56,70	59,05	42,26	72,10	62,72
Incentives Received (million TL)		22,20	77,24	70,49	320,50	209,54

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ENVIRONMENTAL PERFORMANCE	2012	2013	2014	2015	2016
Direct Energy Consumption (TJ)	70.622	68.752	66.529	75.678	101.639
Natural Gas	34.784	32.863	32.906	30.258	39.085
Fuel Oil	12.650	10.966	8.811	13.184	15.487
Fuel Gas	20.543	22.285	22.770	29.624	44.265
Coke	2.645	2.638	2.042	2.611	2.802
Indirect Energy Consumption – Electricity (TJ)	464	395	505	384	518
Total Energy Consumption (TJ)	71.086	69.147	67.034	76.062	102.156
Change in Energy Consumption (%)	-0,41	-2,73	-3,06	13,47	-12,51
Energy Consumption per Refined Crude Oil (GJ/Tons)	3,21	3,21	3,35	2,76	3,60
Solomon Energy Intensity Value	105,3	102,1	101,6	105,3	103,4
Number of Energy Efficiency Projects	97	40	22	21	18
Saving in Energy Consumption (TJ)	5.255	2.841	1.772	1.031	1.263
Reduction of Costs Through Energy Efficiency (million TL)	159	61	51	25	28
Reduction in GHG Emissions Through Energy Efficiency Projects (Ton CO_e)	348.173	189.019	126.442	71.744	92.675
Total Water Consumption (million m³)	21	19	17,8	25,7	31,2
Underground	0	0	0	0	0
Surface	20	18,8	17,2	19	16,3
Municipal	0,7	0,6	0,5	1	1,2
Other (Treated wastewater from Körfez Municipality)	) _	-	0,04	5,7	13,8
Changes in Water Consumption (%)	10,5	-9,5	-6,3	44	21
Water Consumption per Refined Crude Oil (m³/Tons)	1	0,9	0,9	0,7	0,6
Volume of Water Recycled (million m³)	10	11	12	17,3	20
Percentage of Water Recycled in Total Water Consumption (%)	32,2	36,3	40,7	40,1	39
Total Wastewater Discharge (million m³)	13,1	11,6	10,2	11,3	17,1
Total Amount of Solid Wastes	38.028	27.450	112.664	25.538	41.506
Hazardous Waste by Weight (tons)	22.944	19.411	94.974	14.192	30.971
Non-Hazardous Waste by Weight (tons)	15.084	8.039	17.690	11.346	10.534
Wastes by Disposal Method					
Recycling (tons)	27.471	21.045	39.724	17.812	27.746
Disposal (ton)	10.577	6.405	72.940	7.726	13.759
Solid Waste Recycling Rate (%)	72	76,7	35,3	69,7	66,8
Number of Saplings Planted during Afforestation Activities (units)	8.836	6.635	1.460	223	600
Estimated Reduction in CO2 Emissions due to Afforestation Activities (ton CO2e)	2.916	2.191	482	75	200
Environmental Investment and Operational Expenditures (million TL)	212,17	197,41	179,09	200,16	346,33
Environmental Training (person x hour)	35.719	46.418	15.512	17.787	17.331
Tüpraş Employees	15.138	23.751	3.302	7.438	4.310
Contractors	14.644	19.727	8.385	10.121	13.021
Community	5.937	2.940	3.825	228	0

SOCIAL PERFORMANCE		2012	2013	2014	2015	2016
Total Training (person x hour)		289.095	167.961	388.696	234.311	284.878
	Female	32.125	19.562	31.172	2.306	21.827
	Male	256.970	148.399	357.524	20.002	263.05
	Office Employees	129.599	68.240	92.571	7.130	68.835
	Field Workers	159.496	99.721	296.125	15.178	216.04
Total Training (per employee)		63	35,6	82	49,7	
	Female	88	49,3	80	79,9	52,0
	Male	61	34,4	83	47	56,3
	Office Employees	131	65,2	89	95,3	61,6
	Field Workers	45	27,2	81	37	54,3
Total HSE Training Hours (person x hour)		75.190	82.533	110.694	104.091	135.95
	Tüpraş Employees	28.550	44.775	70.004	40.495	85.609
	Business Partner Employees	46.640	37.758	40.690	63.596	50.342
Accident Frequency Rate (number of incidents x 1,000,000/person x hour)		1,5	1,1	1,6	2,5	1,9
Accident Severity Rate (lost days x 1,000,	000/person x hour)	289	26	308	315	354
Number of Fatalities		1	0	2	1	1
Total Number of Suppliers		1.383	1.595	2.012	2.238	2.266
Number of the Suppliers and Contractors	gone through Human Rights Screening	157	26	0	0	0
Employee Satisfaction (%)		57	60	57,3	50	53
Customer Satisfaction (%)		85	-	83,8	88,8	89
Supplier Satisfaction (%)		98,9	97,3	93,4	95,8	88,8
Koç Holding Pension Fund Liabilities (mill	ion TL)	42,72	48,22	54,9	63,9	77,4
Donations and Sponsorships (million TL)		16,07	25,56	8,9	17,3	24,4
Total Number of Interns		1.704	1.292	993	1.009	6.027
Rate of Minimum Wage to Minimum Star	ting Salary					
	Office Employees	2,5	2,6	2,6	2,6	2
	Field Workers	4,4	4,4	4,2	4,1	3,3

EMPLOYEE DEMOGRAPHICS		2015	201
Total Number of Employees		4.780	4.97
	Female	395	412
	Male	4.385	4.56
Contractor Employees		605	601
	Female	176	179
	Male	429	422
Employees by Contract Type			
	Employees on Permanent Contract	4.778	4.97
	Female	395	412
	Male	4.383	4.56
	Employees on Fixed-term Contract	2	2
Employees by Category			
	Field Workers	3.728	3.89
	Female	137	136
	Male	3.591	3.76
	Office Employees	1.052	1.08
	Female	258	276
	Male	794	804
Employees by Employment Type			
	Full-time	4.780	4.97
	Female	395	412
	Male	4.385	4.56
	Part-time	0	0
Employees by Age Groups			
	Under 30	1.305	1.43
	Between 30 - 50	2.857	2.97
	Above 50	618	565
Senior Executives		24	27
	Female	1	1
	Male	23	26
Mid-Level Executives		170	159
	Female	25	22
	Male	145	137
Recruitment		274	496
	Female	27	44
	Male	247	452

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EMPLOYEE DEMOGRAPHICS	2015	2016
Employee Leaves	208	297
Female	22	27
Male	186	270
Number of Employees Covered by Collective Bargaining Agreements	3.728	3.899
Number of Employee on Maternity Leave	20	37
Number of Employees Coming Back to Work After Maternity Leave	14	5
Number of Employees Benefitting from Nursery and Financial Support	0	0
Number of Employees Promoted for the First Time as Senior Managers	1	1
Promoted Employees	304	288
Female	91	35
Male	213	253
Employees Offered with Leadership Training	11.941	8.01
Female	9.422	1.59
Male	2.519	6.42
Employees Offered with Mentorship Services	0	4
Female	0	0
Male	0	4
Employees Offered with Coaching Services	25	16
Female	2	5
Male	23	11

## **GRI CONTENT INDEX**



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GRI 102: General Disclosures	2016	
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102-2	www.tupras.com.tr/en/products	-
102-3	Contacts (Inside Back Cover)	-
102-4	Tüpraş operates only in Turkey except for supply and exportation processes.	-
102-5	Tüpraş 2016 Annual Report (p.100)	-
102-6	Tüpraş 2016 Annual Report (p.44-47)	-
102-7	Tüpraş in Figures (p.7), Labour Practices (p.28), Performance Data (p.50, 53)	-
102-8	Performance Data (p.53)	-
102-9	Supplier Experience (p.24)	-
102-10	www.tupras.com.tr/en/material-disclosures	-
102-11	Systems and Standards (p.26), Asset Management (p.26),	-
	Disaster and Emergency Management (p.27),	
	Security (p.27), Risk Management (p.10-11), Internal Audit and Control (p.11)	
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102-14	"Message from the Chairman (p.3); Message from the General Manager (p.5)"	-
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#### **Material Issues**

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2016	103-3 Evaluation of the management approach	Future of the Energy(p.12-15)	-
GRI 302:	302-1 Energy consumption within the organization	Future of the Energy(p.12-15), Performance Data (p.50-54)	-
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	303-1 Water withdrawal by source	Water Management (p.18-19), Performance Data (p.50-54)	_
GRI 303: Water 2016	303-2 Water sources significantly aaected by withdrawal of water	Water Management (p.18-19), Performance Data (p.50-54)	
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GRI 205:	205-3 Confirmed incidents of corruption and actions taken	No such case occured during the reporting period	
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GRI 307: Environmental	307-1 Non-compliance with environmental laws and	No significant monetary fine or non-monetary sanction received during	
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