



2017 - 2018
SUSTAINABILITY
REPORT



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ABOUT THE REPORT

Tüpraş, Turkey's largest industrial enterprise has a leading position in the Turkish economy not only with its economic added value, but also with its pioneering practices. One of the practices that various other institutions take as an example is the sustainability report, which complies with GRI standards. In 2008 we conducted this study as first in Turkey; it has also been adopted by various Turkish companies over time. Today, over a hundred companies in Turkey disclose their sustainability performance through the reports in accordance with GRI standards.

As of 2018, we are leaving behind the 10th year in our systematical practices through which we take sustainability as a core management factor, in addition to our reporting practices. When we look back, we see that we have made a significant improvement in the management of our social, environmental and economic impacts. In the coming periods, we will continue this adventure of success with firm steps forward to ensure future generations have a healthy, egalitarian, prosperous and happy life.

As in the examples we have been publishing since 2008, with this year's sustainability report, we present the social, economic and environmental impacts of our activities and the results we have achieved in activities we have undertaken in these areas to our stakeholders. In this year's practice, we also include information that shows the progress we have achieved over the past 10 years.

This report has been prepared in accordance with “GRI Standards: Core” option. Material issues that form the basis of the report content were obtained as a result of the processes carried out in accordance with the reporting principles specified in the GRI Standards. While making the explanations in the content of the report, the requirements of the UN Global Compact Progress Report were also taken into consideration in addition to the disclosures offered in GRI Standards.

The information contained in the report covers the refinery activities carried out by Tüpraş between January 1, 2017 – December 31, 2018. In order to reflect the totality of the organization, general introductory information of Tüpraş's subsidiaries Opet Petrolcülük A.Ş., Körfez Ulaştırma A.Ş. and Ditaş is also included in the report content. In accordance with the financial reporting principles adopted, the financial data of the subsidiaries are included in Tüpraş performance figures.

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

We will continue our sustainability journey that we keep since 2008, with firm steps forward to ensure future generations have a healthy, egalitarian, prosperous and happy life.

MESSAGE FROM THE GENERAL MANAGER

Dear Stakeholders,

We are living in a period of great change in our business and individual lives as a result of developments such as population growth, climate change, rapid development and spread of technology. While the adversities affected the whole world deeply, we are far from claiming that the developments have provided equal returns to all nations. In the face of this situation, it is necessary to adopt a more inclusive, more efficient and sustainable development model with an innovative perspective. The goal of improving the living standards of future generations can only be achieved by bringing together all relevant stakeholders, especially the businesses, public institutions and non-governmental organizations. The UN Sustainable Development Goals bring together relevant parties and provide an important guidance mechanism for generating creative solutions to global problems.

In the face of all these developments, Tüpraş developed its stance with a visionary approach and placed sustainability among the core factors of doing business. The first report, which we published in 2008 to evaluate our non-financial performance, is important to form the first step of our development journey. This practice is also important in terms of setting an example for other companies as a pioneer practice in which a Turkish company presents sustainability performance to its stakeholders within the framework of an internationally accepted standard.

With this vision, we have scored a significant progress from 2008 to 2018 by putting the sustainability perspective to the forefront in all our activities from our investment decisions to our working methods. With Fuel Oil Conversion Unit investment that we put into use, we have achieved a significant added value increase both for Tüpraş and the national economy. After the Fuel Oil Conversion Unit, an investment worth 3.2 billion USD together with the auxiliary infrastructure units, İzmit Refinery has reached to 14.5 Nelson Complexity Index became one of the global refineries with highest conversion rate. Increased processing opportunities with this facility allows 4.4 million tons of annual reduction in Turkey's diesel imports, thus causes the foreign trade deficit to decrease by 1 billion USD.

As an energy company aware of the importance of climate change as a global challenge, increasing our environmental performance is one of our major sustainability goals. In this respect, through the investments and projects we conducted from 2008 to 2018, we have reduced energy consumption intensity from 119.1 to 99.1; increased the rate of meeting the water demand through recovery from 33.7% to 41.0%. The terms 2008-2018 sets a significant milestone for innovation supporting our activities for fighting against the climate change. Together with the R&D Center that we established at the beginning of the period, we allocated approximately 290 million TL to activities focused on value-added product development with reduced environmental impact, process innovation and digitalization.

When it comes to human resources, which is our most valuable capital, our most important promise has always been and will always be to provide an equitable, inclusive and safe working environment to our employees. We increased the number of female employees by 75% by encouraging women's employment through practices based on international initiatives such as HeForShe and WEP. In order to reach the point of perfect occupational safety in our work environment, we have continuously improved our occupational health and safety practices in line with our zero error and zero incident goals.

During the reporting period, we have accelerated our social development investments, which constitute an important part of our corporate culture. Between the years 2008-2018, we allocated more than 200 million TL to the projects we have realized or similar activities of various organizations in the fields of education, health, natural life, culture and arts, hence contributed to the improvement of the quality of amongst the society.

We are confident that we will take our success in our sustainability journey much further in the future. We would like to express our gratitude to all our stakeholders, especially our employees, suppliers and business partners for supporting us and contributing to our goals.

İbrahim Yelmenoğlu

TÜPRAŞ IN FIGURES

Crude Oil Supply

2017: **27.7** Million Tons

2018: **24.5** Million Tons

DiTAŞ

3 Crude Oil Tankers: **479,765** DWT

1 Crude Oil/Product Tanker: **51,532** DWT

7 Product Tankers: **90,535** DWT

11 Tugboats, **8** Mooring Boats,

2 Service Boats, **1** Pilot Boat

Tüpraş owns **79.98%** of DiTaş shares.

Refining Capacity: **28.1** Million tons/year

Average Nelson Complexity: **9.5**

Processed Crude Oil

2017: **28.5** Million tons

2018: **24.5** Million Tons

Production

2017: **28.9** Million Tons

2018: **25.7** Million Tons

KÖRFEZ ULAŞTIRMA A.Ş.

Number of Wagons: **439** (Tüpraş), **26** (Opet)

Number of Locomotives: **5** (TCDD-leased)

Tüpraş owns **100%** of Körfez Ulaştırma A.Ş. shares.

Total Storage

Capacity: **8.1** Million m³

Opet Terminals: **1.1** Million m³

Tüpraş Terminals: **7** million m³

OPET

Tüpraş owns **40%** of Opet shares.

Fuel Stations: **1,615**

Storage Capacity: **1.1** Million m³

Opet conducts trading and storage of mineral oil, banker fuel, jet fuel.

Domestic sales

2017: **25.7** Million Tons

2018: **25.6** Million Tons

Export

2017: **5.8** Million Tons

2018: **4.2** Million Tons

GHG Reduction

2017: **46** Thousand Tons of CO₂e

2018: **244** Thousand Tons of CO₂e

Energy Saving

2017: **830** TJ

2018: **3,620** TJ

Local Supply

2017: **72%**

2018: **62%**

Environmental Expenditure

2017: **390** Million TL

2018: **150** Million TL

Female Employees

2017: **453**

2018: **500**

Employee Training

2017: **233,034** Personhours

2018: **384,405** Personhours

Community Investment

2017: **30** Million TL

2018: **40,6** Million TL

Water Recovery

2017: **25.7** Million m³

2018: **20.8** Million m³

Our Achievements Since 2008...

ECONOMIC IMPACTS

254.3
Million Tons
Crude Oil Processed

251.4
Million Tons
Total Production

285.8
Million Tons
Product Sales

+1.3
Corporate
Governance Rating
Note Increased

286.5
Million TL
R&D Expenditure
Realized

294.3
Billion TL
Tax Payment
Realized

63%
of Total
9.4
Billion TL
Procurement
Operations Made
Through Local
Suppliers.

ENVIRONMENTAL IMPACTS

Through
479
Energy Efficiency
Projects, We Achieved
34,480
TJ Saving,
2.4
Million Tons
CO₂e GHG Reduction

31%
Solid Waste
Recovery Rate
Increased

2.3
Billion TL
Environmental Expenditure
and Investment Realized

7.3%
Rate of Recovered
Water in Total
Consumption Increased

60,000
Tons/Year
GHG Reduction
Achieved by Planting
160,000
Saplings

36%
Increased Rate of Fresh
Water Use per Crude Oil
Processed

20 points
Energy Intensity
Decreased

SOCIAL IMPACTS

205.2
Million TL
Donations and
Sponsorships Realized

13,899
Students Received
Internships in Tüpraş

By Conducting
2.7
Million PersonxHours
of Trainings, We Increased
Average Training Hours
per Person by
21%.

992,824
PersonxHours
OHS Trainings
Conducted

75%
Number of Female
Employees Increased

THE SUSTAINABILITY JOURNEY

2008

- In accordance with the agreement signed with TCDD, railway transportation has started.
- Construction of the Fuel Oil Conversion Facility has started.
- OSAR- Risk Assessment Table was activated.
- First corporate responsibility report in line with GRI Reporting Guidelines was published.
- Corporate Governance Rating was updated to 8.20.



2009

- Contractor Management System was commissioned.
- Customer Relationship Management System (CRM) was initiated.



2010

- R&D Center was launched.
- Tüpraş Ethical Values were revised.
- Waste Management Automation Software was commissioned.



2015

- Tüpraş participated in 21st Climate Change Conference (COP21) where Paris Agreement has been concluded.



2014

- İzmit Refinery Fuel Oil Conversion Facility was completed.
- The Company is listed in Borsa İstanbul Sustainability Index.
- R&D Center Campus was launched.



2013

- ISO 50001: 2011 Energy Management System Standard certification was realized.
- ISO / IEC 27001: 2005 Information Security Management System Standard certification was realized.

2016

- At the İzmit Refinery, the Gray Water Treatment Plant was commissioned to treat the discharge water of the İSU Körfez Wastewater Plant in the refinery and use for industrial purposes.
- Kırıkkale Refinery Wagon Repair and Maintenance Workshop has been Turkey's most comprehensive Wagon Repair and Maintenance Workshop by taking the Unit Responsible for Maintenance Certification.
- Tüpraş Supplier Portal was commissioned.
- Three projects of Tüpraş R&D Center were accepted to Ufuk2020 Multinational Research and Innovation Program with peak evaluation points.
- Within the scope of the environment and energy efficiency, EBRD granted a 150 million USD loan to Tüpraş.
- Tüpraş participated in 22nd Climate Change Conference (COP22).



2017

- Tüpraş has become Turkey's first private railway train operator through Körfez Transportation A.Ş.
- R&D Center, the first catalyst pilot plant was established.
- Tüpraş took part in the 23rd Climate Change Conference (COP23) with two presentations.
- Tüpraş signed UN Women Empowerment Principles (WEPs).
- ISO 10002 Customer Satisfaction Management System certification was realized.



2018

- Corporate Governance Rating has increased to 9.48.
- UN Women, Tüpraş and Fenerbahçe Sports Club signed a global cooperation agreement to support the UN Women's HeForShe movement.
- Tüpraş has made a presentation during 24th Climate Change Conference (COP24).
- Within the scope of customer satisfaction improvement studies Tüpraş Solution Center has been founded.
- London Trade Office has been initiated.
- Data Analytics Centers have been launched in ODTÜ and İTÜ Technocities.



AWARDS RECEIVED

2010

- Batman Refinery won the first place and İzmir Refinery took the third place in the Industrial Energy Efficiency competition.

2011

- İzmir and Batman Refineries won the first prize in the Industrial Energy Efficiency competition.

2012

- Batman Refinery won the first prize in the Industrial Energy Efficiency competition.

2013

- Batman Refinery won the first prize in the Industrial Energy Efficiency competition.
- İzmir Refinery received the first place in the Aegean Region Chamber of Industry's Environmental Practices Award.

2014

- Batman Refinery won the first prize in the Industrial Energy Efficiency Competition.

2015

- Tüpraş took the first prize in European Union Environment Awards Turkey Program, in Process Category.
- Kırıkkale Refinery won the first place, İzmit Refinery second place, İzmir Refinery third place and Batman Refinery Jury Special Award in the Industrial Energy Efficiency Competition.

2016

- Batman Refinery won the first place, Kırıkkale Refinery took the second place and İzmit Refinery took the third place in the Industrial Energy Efficiency Competition.

2017

- Tüpraş R&D Center was selected as the Best R&D Center in the petroleum and petroleum products sector by the Ministry of Science, Industry and Technology.
- Batman Refinery won the first prize at the ICCI Energy Awards organized with the support of the Ministry of Energy and Natural Resources and EMRA.
- İzmit Refinery won the second place and Kırıkkale Refinery won the third place in the Industrial Energy Efficiency Project Competition.
- İzmir Refinery was awarded second place in the Environment Award competition organized by the Aegean Region Chamber of Industry.

2018

- Kırıkkale Refinery won the first place, İzmit Refinery the second and Batman Refinery the third in the Industrial Energy Efficiency Project Competition.
- İzmit Refinery won the first prize in the Sustainable Business Awards - Water Management Category.
- İzmit Refinery received the second prize in the ISO 2018 Environment Awards - Large-Scale Enterprise Environment Friendly Practice Category.
- In Turkey Investor Relations Association's 2018 Summit, Tüpraş received the second prize in the category of "the Company Most Invested by Sustainability Funds".
- Tüpraş won the PERYÖN Human Value Awards - Employee Health and Safety Category.

ENERJİ VERİMLİLİĞİ
FORUM ve FUARI



CORPORATE GOVERNANCE

Tüpraş as Turkey's largest industrial enterprise places the principles of transparency and accountability at the center of its governance practices. The activities carried out for the continuous improvement of the corporate governance model shaped by the CMB's Corporate Governance Principles and international management norms are reported annually through the Corporate Governance Compliance Reports. As of 2018, Tüpraş's Corporate Governance Rating has increased to 9.48.



9.48

Corporate
Governance Rating
Note As of 2018



13%

Female
Representation in the
Board of Directors As
of 2018



17%

Female
Representation in
Senior and Mid-Level
Management

BOARD AND SENIOR MANAGEMENT STRUCTURE



The Board of Directors of Tüpraş is composed of 15 members elected by the General Assembly to serve in limited periods. Although there are no executive members on the Board of Directors, there are 5 independent members. As of the end of 2018, there were 2 female members on the Board of Directors of Tüpraş.

Corporate Governance Committee, Risk Management Committee, Audit Committee, Executive Committee and Ethics Committee serve to increase the effectiveness of Tüpraş Board of Directors in performing its duties.

The duties of Chairperson of the Board of Directors and General Manager are carried out by different individuals. The main task of the top management headed by the General Manager is to implement the strategic plan and corporate policies agreed by the Board of Directors. As of the end of 2018, Tüpraş's top management consists of 30 people who have proven their professional careers and expertise in various fields. There are 1 female executive in senior management and 36 female executives in mid-level management.

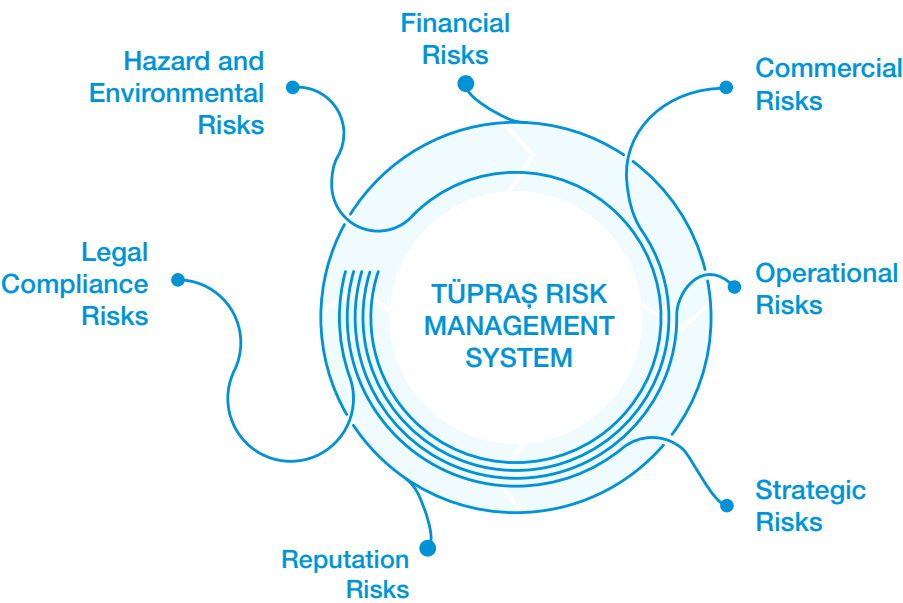
RISK MANAGEMENT



Within the scope of risk management, Tüpraş identifies the risks that the company may encounter early and prepares the necessary plans to turn them into opportunities. The Risk Management Committee, the highest level body of risk management, is responsible for identifying, evaluating, monitoring and managing risk elements, establishing internal control systems for this purpose, integrating these systems into

the corporate structure, measuring risk elements, reporting them to the Board of Directors and using them in decision mechanisms.

These activities are implemented by Tüpraş Risk Management and Audit Department. The Tüpraş Risk Management System, which is followed up within the scope of these studies, consists of 7 main aspects including sustainability risks.



INTERNAL AUDIT AND CONTROL



Tüpraş's audit activities are conducted by a proactive methodology, which is based on the International Internal Audit Standards and Tüpraş Ethical Values. Tüpraş Risk Management and Audit Unit's expert team conducts audits on aspects such as financial, operational, risk, process, legal compliance, business ethics and misconduct on the basis of defined processes and issues. Basic financial and process audits are conducted twice a year and thematic audits for the working period are conducted at least once a year in all Tüpraş business centers.

Defined audit topics are shared with related units of the company in the beginning of the year and annual risk-based audit plans are established.

In order to ensure the effective, reliable and uninterrupted conduct of Tüpraş's activities and

services, the consistency, reliability and timely availability of the information obtained from the accounting and financial reporting system and the information used in the consolidated financial statements, the findings of the Company's internal controls are shared with the Company's management and efforts are made to improve the processes.

In 2017 and 2018, all refineries were audited by the Risk Management and Audit Department. Audit findings are published within the Company without delay and necessary corrective measures are taken. The findings are reviewed regularly and improvements in the activities are followed up through Risk Action Monitoring Portal. Periodical reporting is made to Tüpraş Audit Committee.

BUSINESS ETHICS AND ANTI-CORRUPTION



Compliance with legal regulations and business ethics is one of the main principles of Tüpraş working culture. The Tüpraş Ethical Values and Application Principles Guidelines, which is based on the Koç Holding Code of Ethics and Code of Conduct, shapes the ethical rules and anti-corruption principles and policies that must be followed in the company's activities. Determination of these principles and revision when necessary are among the responsibilities of the Board of Directors.

As Tüpraş Ethical Values are binding on all company activities and all company employees, suppliers and business partners are also expected to act in accordance with these principles. The Tüpraş Ethics Committee, which reports to the Board of Directors, is responsible for ensuring compliance with ethical rules and taking the necessary actions in case of violation of ethical rules. In addition to the internal audit teams, Koç Holding audit teams carry out audit activities against these violations.

All business units are evaluated within the scope of audit activities against bribery and corruption risks.

When a finding is obtained, it is submitted to the Tüpraş Ethics Committee; necessary sanctions may be applied in line with the Board's decision and regulatory and preventive activities are carried out rapidly. When a suspicious situation arises, there are communication channels that enable employees and other stakeholders to submit the matter to the Risk Management and Audit Department in a confidential manner. All Tüpraş employees are obligated to report if they encounter a violation of ethical rules or suspicions of bribery and corruption. The notices communicated are evaluated in confidentiality.

Tüpraş does not submit to any political or ideological thought, tendency or organization; it does not directly or indirectly support the activities or campaigns of political parties, politicians and candidates. It is not permitted to use the company's fields of activity or company resources for such activities and to lobby for the private interest of the company. Within the framework of its transparent relations with public institutions, Tüpraş exchanges information and responds to information requests about the sector. The company contributes to the solution

of sectoral problems by supporting the work of sectoral non-governmental organizations. It acts in full compliance with the rules of free competition and legal procedures in case public institutions are customers and in tendering processes. In addition, Tüpraş employees cannot accept or give gifts in kind, cash or substitutes other than symbolic gifts that do not have financial value.

Tüpraş employees are not held responsible for any direct or indirect damages to which the company may be exposed due to their compliance with ethical principles and no retaliation or sanctions may be imposed on them. During 2017-2018 operating periods, there were no reports regarding Tüpraş Ethical Values, violations of universal human rights or cases of corruption. In 2017-2018, there are no lawsuits filed against the company due to non-compliance with the laws and regulations.

SUSTAINABILITY MANAGEMENT



Tüpraş shapes its sustainability management with a risk and opportunity-oriented approach and with the objective of creating value through systematic methods. The basis of sustainability management is the issues that arise as a result of the materiality process carried out by the Tüpraş Sustainability Working Group, which meets periodically. While determining sustainability priorities, Tüpraş evaluates social, economic and environmental

issues by considering stakeholder expectations, risk areas and opportunities, company strategies and expert opinions. The issue universe to be studied is designed with a preliminary assessment including the company managers. Then, Tüpraş Sustainability Working Group determines the priority issue portfolio by conducting the final assessment. During the reporting period, the priority issue portfolio was reassessed in line with expert opinions.

TÜPRAŞ SUSTAINABILITY PRIORITIES	SUSTAINABLE DEVELOPMENT GOALS					
Occupational Health and Safety	<div>3 GOOD HEALTH AND WELL-BEING</div> <div>17 PARTNERSHIPS FOR THE GOALS</div>					
Innovation, R&D and Digitalization	<div>7 AFFORDABLE AND CLEAN ENERGY</div> <div>9 INDUSTRY, INNOVATION AND INFRASTRUCTURE</div> <div>17 PARTNERSHIPS FOR THE GOALS</div>					
Gender Equality	<div>1 NO POVERTY</div>	<div>4 QUALITY EDUCATION</div>	<div>5 GENDER EQUALITY</div>	<div>8 DECENT WORK AND ECONOMIC GROWTH</div>	<div>10 REDUCED INEQUALITIES</div>	<div>17 PARTNERSHIPS FOR THE GOALS</div>
Environment, Climate and Energy	<div>6 CLEAN WATER AND SANITATION</div>	<div>7 AFFORDABLE AND CLEAN ENERGY</div>	<div>12 RESPONSIBLE CONSUMPTION AND PRODUCTION</div>	<div>13 CLIMATE ACTION</div>	<div>14 LIFE BELOW WATER</div>	<div>15 LIFE ON LAND</div> <div>17 PARTNERSHIPS FOR THE GOALS</div>
INSTITUTIONAL PRINCIPLES						
Customer Satisfaction	<div>12 RESPONSIBLE CONSUMPTION AND PRODUCTION</div>	Asset Management and Reliability	<div>3 GOOD HEALTH AND WELL-BEING</div>	Legal Compliance	<div>16 PEACE, JUSTICE AND STRONG INSTITUTIONS</div>	

STAKEHOLDER ENGAGEMENT



Participation is prioritized in Tüpraş management processes. Appropriate mechanisms have been established to encourage the voice of stakeholder views in decision-making and implementation processes. Through these channels, both stakeholders convey their opinions and wishes to the company and information flow is provided about company activities and results.

STAKEHOLDER COMMUNICATION TOOLS	
Employees	Sustainability Report (annual), Annual Report (annual), Employee Engagement Survey (annual), Internal Communication Meetings (annual), Performance Evaluation Meetings (annual), Occupational Health and Safety Boards (monthly), Technical Safety Bulletins (weekly / monthly), Internal Information Announcements (instant), Social Projects (continuous), Social Activity Clubs (continuous), Refined Suggestions System (continuous), Recognition, Appreciation and Rewarding System (continuous), Tüpraş Ethical Principles (continuous), Collective Bargaining Agreement (continuous), Employee Trainings (continuous), Website (continuous), Refinery Knowledge Base (continuous), Stakeholder Communication Management System (continuous) and Corporate Portal (continuous)
Shareholders and Investors	Sustainability Report (annual), Annual Report (annual), General Assembly Meetings (annual), Interim Reports (quarterly), Briefing and Material Disclosures (instant), Roadshow and Investor Presentations (upon request), Meetings and Interview (upon request), Analyst Presentations and Teleconferences (upon request), Tüpraş Code of Ethics (continuous), Website (continuous), Stakeholder Communication Management System (continuous)
Customers	Sustainability Report (annual), Customer Satisfaction Survey (annual), Meetings and Interview (upon request), Customer Portal (continuous), Customer Relations Management System (continuous), Tüpraş Ethical Principles (continuous), Tüpraş Solution Center (continuous), Stakeholder Communication Management System (continuous)
Business Partners and Suppliers	Sustainability Report (annual), Supplier Satisfaction Survey (annual), Technical Safety Bulletins (weekly / monthly), Meetings and Interview (upon request), Tüpraş Ethical Principles (continuous), Business Partner HSE-S (continuous), Website (continuous), Stakeholder Communication Management System (continuous)
Indirect Employees	Technical Safety Bulletins (weekly / monthly), Meetings and Interview (on request), Tüpraş Ethical Principles (continuous), Business Partner HSE-S (continuous), Employee Trainings (continuous), Website (continuous), Stakeholder Communication Management System (continuous)
Unions	Sustainability Report (annual), Annual Report (annual), Occupational Health and Safety Boards (monthly), Meetings and Interviews (continuous), Collective Bargaining Agreement (continuous), Website (continuous), Stakeholder Communication Management System (continuous)
Public institutions and organizations	Sustainability Report (annual), Annual Report (annual), Audits (periodic / instant), Meetings and Interviews (on request), Joint Projects (on request), Incentives (on request), Website (continuous), Stakeholder Communication Management System (continuous)
Non-Governmental Organizations	Sustainability Report (annual), Annual Report (annual), Meetings and Interviews (on request), Joint Projects (on request), Donations and Sponsorships (on request), Memberships (continuous), Website (continuous), Stakeholder Communication Management System (continuous)
Educational Institutions	R&D Partnerships (on project basis), Donations and Sponsorships (on request), Infrastructure and Trainer Supports (on request), Master's and Sectoral Expertise Programs (continuous), Website (continuous), Stakeholder Communication Management System (continuous)
Media	Sustainability Report (annual), Annual Report (annual), Meetings and Interviews (on request), Press Conferences and Bulletins (instant), Website (continuous), Stakeholder Communication Management System (continuous)
Local Communities	Corporate Reputation and Perception Research (biennial), Meetings and Interviews (upon request), Announcements (instant), Social Projects and Infrastructure Support (continuous), Website (continuous), Stakeholder Communication Management System (continuous)
Society	Corporate Reputation and Perception Research (biennial), Announcements (instant), Social Projects and Infrastructure Supports (continuous), Website (continuous), Stakeholder Communication Management System (continuous)



CUSTOMER SATISFACTION AND QUALITY MANAGEMENT

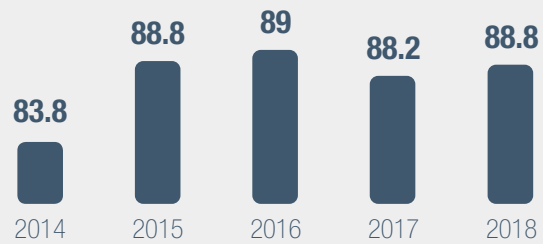
Increasing customer satisfaction and meeting customer expectations at the highest level are among Tüpraş's main objectives. Tüpraş is committed to providing high quality products and services in line with the needs and expectations of its customers, to establish transparent and two-way communication with customers, to treat customers equally and fairly, and to ensure continuous improvement in product and service processes. All operations in contact with customers are carried out in accordance with ISO 10002 Customer Satisfaction Management Standard and communication and audit activities are carried out within the framework of the standard.

The Customer Satisfaction Survey is regularly conducted every year in order to determine the development points in ensuring customer satisfaction and to continuously improve customer satisfaction. According to the survey results, 88.2% of customers in 2017 and 88.8% in 2018 stated that they were pleased to work with Tüpraş. In 2017, Tüpraş Solution Center (call center) was established in line with the improvement suggestions received from customers within the scope of the research. During the same period, the Customer Complaint Management Project was launched to increase customer satisfaction.

In line with customer request received with researches conducted in 2018, customer and order portals are united under a single roof and a mobile application has been designed and activated.

In order to ensure standardization in business and service processes and products at Tüpraş, internal and international quality and management standards are followed and a business excellence model is adopted. Tüpraş manages all its activities within the framework of an Integrated Quality Management System consisting of ISO 9001 Quality Management System, ISO 14001 Environmental Management System, OHSAS 18001 Occupational Health and Safety Management System and ISO 50001 Energy Management System Standards. All Tüpraş laboratories have ISO 17025 Laboratory Accreditation Certificate, which ensures the reliability and technical competence of the test results. In addition, ISO 27001 Information Security Management System is used, which constantly analyzes the hazards to information assets, determines which controls to be implemented against risks and monitors the proper operation of these controls. Continuous control of quality management systems is ensured through internal and external audits performed at the headquarters and refineries. Within the scope of quality management activities, Lean Six Sigma studies were started in the reporting period.

CUSTOMER SATISFACTION (%)



ENVIRONMENT, CLIMATE AND ENERGY

It is of utmost importance that the growing global energy need is secured and that sustainable growth infrastructure is established. While meeting the needs of Turkey's petroleum products, Tüpraş aims to steer the sector with innovative practices. Aware of the responsibilities of the refining sector brought by the environmental, social and economic risks that may be caused by climate change, Tüpraş focuses on best available technologies in its production processes and product portfolio.



479

Energy Efficiency
Projects Conducted
Since 2008



20 points

Energy Intensity
Reduced Since
2008



34,480 TJ

Energy Saved
Since 2008



36%

Reduced Fresh
Water Usage Per
Crude Oil Processed
Since 2008



2.4 Million Tons CO₂e

GHG Reduced Since
2008



31%

Waste Recovery
Rate Increased
Since 2008

It is of utmost importance that the growing global energy need is secured and that sustainable growth infrastructure is established. While meeting the needs of Turkey's petroleum products, Tüpraş aims to steer the sector with innovative practices. Aware of the responsibilities of the refining sector brought by the environmental, social and economic risks that may be caused by climate change, Tüpraş focuses on best available technologies in its production processes and product portfolio. Efforts and investments to reduce energy consumption and emissions will make it easier for Tüpraş to benefit from the opportunities offered by the low carbon economy.

On the other hand, reducing environmental impacts of production are among the main priorities of Tüpraş. Tüpraş aims to improve the quality of life of future generations by minimizing the environmental impacts arising from its production processes and to become an exemplary company in the field of environment. Tüpraş carries out all of its production and services within the framework of the principle of sensitivity to the environment and continues its activities with an understanding that always prioritizes human health, operational safety, environmental protection and the benefit of society. In this context, Tüpraş evaluates its environmental impacts in line with lifecycle perspective.

At Tüpraş, environmental issues are managed by the Environmental Directorate, whereas energy management issues are amongst the responsibility of Energy Directorate under the coordination of refineries. Environmental, climate and energy issues are managed by following internal and international standards within a broad framework including energy and water consumption, reduction of emissions, waste and other environmental impacts and protection of compliance with legal regulations. All activities in refineries are carried out in accordance with ISO 14001 Environmental Management System Standard and ISO 50001 Energy Management System Standard.

Within the scope of the Communiqué on Continuous Emission Measurement Systems

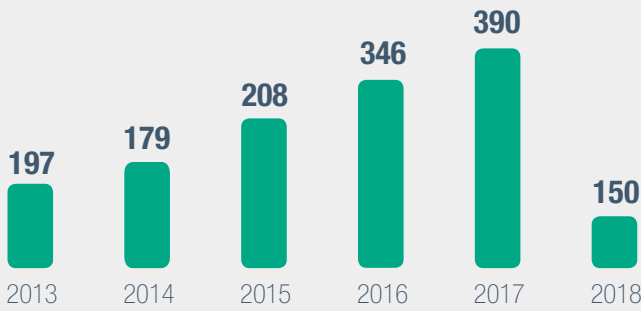
issued by the Ministry of Environment and Urbanization, all combustion plants with a nominal thermal power of more than 50 MW in Tüpraş refineries are equipped with Continuous Emission Measurement Systems. The relevant parameters are monitored online by the Ministry of Environment and Urbanization. Emission confirmation measurements are carried out every 2 years in the chimneys and air quality measurements are carried out in the plant and in the plant impact area.

Through its risk assessment activities, Tüpraş identifies potential negative impacts that its activities may have on natural areas and living things and develops preventive mechanisms against these risks. In this way, environmental impacts are continuously measured and kept under control. Tüpraş production facilities operate in industrial areas and there is no grade 1 natural site area, environmental protection areas, RAMSAR or similar wetlands within the physical impact area. While making physical investment decisions, care is taken to avoid areas with special status.

Tüpraş continuously monitors its environmental performance and subject it to audit activities. In addition to the internal audit processes, environmental performance is evaluated within the scope of the audits performed by the Ministry of Environment and Urbanization, authorized institutions and independent organizations and Koç Group Environmental Audit processes. During the reporting period, there is no lawsuit filed against the company for non-compliance with environmental laws and regulations or no significant fines received.

Tüpraş attaches importance to raising awareness of its employees, business partners and the society on environmental issues. In this direction, environmental awareness is conveyed through the training practices implemented. In 2017, a total of 16,012 personxhours and in 2018 10,391 personxhours of environmental training were provided. In order to conduct environmental management in the most effective manner, Tüpraş allocated 390 million TL in 2017 and 150 million TL in 2018 for environmental management activities and investments.

ENVIRONMENTAL EXPENDITURES (MILLION TL)



TÜPRAŞ CLIMATE VISION



Tüpraş deals with climate change in all dimensions of legal, operational and financial aspects with a risk and opportunity oriented approach within the scope of corporate governance. Tüpraş does not consider its activities and investments to combat climate change as a cost-increasing factor and identifies and projects its duties in this regard and realizes them rapidly.

Closely monitoring national and international agenda of the climate change, Tüpraş participates in meetings and seminars organized by the local and international authorities, in particular the Ministry of Environment and Urbanization, as well as non-governmental organizations. During 2017 and 2018, Tüpraş has closely monitored international developments by participating the 23rd United

Nations Climate Change Conference (COP23) held in Bonn, Germany and 24th United Nations Climate Change Conference (COP24) held in Katowice, Poland. In addition, experiences and good practices conducted in the refineries on monitoring, reporting, and verification (MRV) of GHG, as well as on the benefits of MRV for low-carbon development were presented the in Pavilion of Turkey.

When all these are considered together, the development of efficient and low-emission fuels remains crucial for the energy sector, while responding to increasing energy needs. While Tüpraş realizes its investments to improve production capacity in product groups where expectations are intensified in line with future trends, on the other hand, it is working on the development of alternative energy products.

ENERGY EFFICIENCY



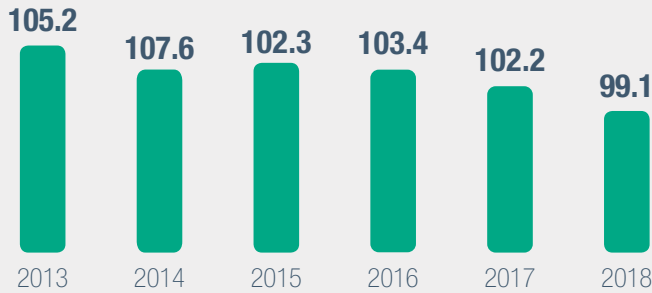
Refinery activities are composed of energy intensive processes. In order to achieve more efficient production levels and to reduce GHG emissions, efforts to increase energy efficiency are vital. In Tüpraş, common calculation criteria are used in all facilities to monitor energy consumption and greenhouse gas emissions.

Tüpraş monitors its energy consumption performance as Energy Intensity based on a certain methodology, which evaluates the performance of companies operating in the refining sector worldwide. Thanks to the energy saving and modernization projects conducted, Tüpraş's

Energy Intensity Value, which was 119.1 in 2008, was reduced to 102.2 in 2017 and 99.1 in 2018.

Tüpraş works to reduce the amount of greenhouse gas emissions resulting from production processes through its energy efficiency studies; those from operational processes through environmentally friendly technologies and practices; and those from consumption processes through R&D studies and investments. Greenhouse gas emissions arising from production processes and their impacts on the environment are analyzed in accordance with sectoral benchmarks and efforts are made to minimize them.

TÜPRAŞ ENERGY INTENSITY VALUE



	Number of Energy Efficiency Projects	Energy Saving (TJ)	Emission Savings (ton CO ₂ e)
2013	40	2,841	186,019
2014	22	1,772	126,442
2015	21	1,031	71,744
2016	18	1,054	77,666
2017	15	830	45,945
2018	21	3,620	243,666

ENERGY EFFICIENCY PROJECTS

Tüpraş aims to prevent energy losses through energy efficiency projects and to minimize the amount of energy consumed. Aiming to be among the refineries with low emission values in Europe, Tüpraş continued to implement the most advanced energy saving technologies and programs worldwide during the reporting period. Within this scope, energy efficiency activities conducted in 2017 at Tüpraş refineries have resulted in 830 TJ of energy saving and 45,945 tons CO₂ of GHG emissions reduction. With the projects realized in 2018, 3,620 TJ of energy and 243,666 tons CO₂ of GHG emissions were reduced.

Optimization Practices in İzmit Refinery Power Plants

A boiler and a turbo alternator have been deactivated and fuel consumption has been saved within the scope of the optimization works at the power plants that were put into operation in 2017 at the İzmit Refinery. A total of 174.9 TJ of energy was saved in 2017 following the launch of the optimization program.

Batman Refinery F-1101 Furnace Replacement

In Batman Refinery, the charging furnace of the Plt-1100 Crude Oil Unit was renewed. With the commissioning of the new furnace in June 2017, energy consumption per unit charged decreased and in 2017 a total of 95.6 TJ of energy was saved.

Kırıkkale Refinery Online Furnace Cleaning

In Kırıkkale Refinery, in 2017, online chemical cleaning was performed in crude oil unit, vacuum unit and hydrocracker unit furnaces. The furnace efficiency was increased by decreasing the chimney gas temperatures after the application. Thanks to the application, 80.9 TJ of energy was saved.

Kırıkkale Refinery New Power Plant Project

As a result of the refinery operations of Kırıkkale Refinery, it was decided to establish a new cogeneration plant in the refinery due to the inefficiency and downtime problems experienced in several equipments (condenser turbine etc.) and control systems working to meet the required electricity and steam production. With the project, a reduction in energy costs was achieved and operational reliability was increased. With the commissioning of the project, a total of 1,561.3 TJ was saved in 2018.

İzmir Refinery U-7000 Crude Oil Unit Revamp Project

With the revamp project carried out in the Crude Oil unit, low-efficiency furnaces were replaced with high-efficiency furnaces, air pre-heaters were included and heat exchangers were added within the scope of thermal integration in the unit. In 2018, the project decreased 802.5 TJ in energy consumption.

İzmir Refinery U-8100 Vacuum Unit Energy Saving through Burner Modification and Hot Charging Maximization

In the vacuum unit charging furnace (H-8101), the burner types were switched to modern burner types for a more efficient and safer operation within the scope of the burner modernization project and the furnace refractory were renewed. In 2018, the project reduced 263.3 TJ of energy consumption annually.

İzmit Refinery Plt-47 Hydrocracker Unit Thermal Integration Project

Within the scope of the Plant-47 thermal integration project, new heat exchangers with high corrosion resistance were placed at the integrated points affecting the energy consumption of the process unit in two stages and energy saving was achieved at various points in the unit. With the commissioning of the project, a total of 215.9 TJ of energy was saved in 2018.

WATER MANAGEMENT



Tüpraş acts with a responsible approach in the use of water resources and ensures the reduction of fresh water use waste water generated through the efficiency and recovery practices. All Tüpraş refineries adopts practices to reduce water withdrawal, to recover refinery waste water and reuse in the processes. Moreover, İzmit Refinery reuses treated urban waste water in the production.

In 2017, 31.4 million m³ and in 2018, 29.9 million m³ of water was used in Tüpraş operations. Thus, 0.5 m³/ton of water was used per processed crude oil in 2017 and 0.7 m³/ton in 2018.

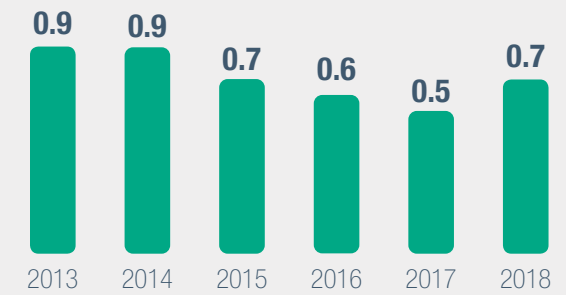
Tüpraş continued its water recovery activities during the reporting period. Within this scope, throughout Tüpraş operations, 25.7 million m³ of waste water was recovered in 2017 and 20.8 million m³ in 2018.

Tüpraş gives priority to meet the water demand of refineries from waste water recovered instead of fresh water resources in order to protect natural resources and ensure sustainability.

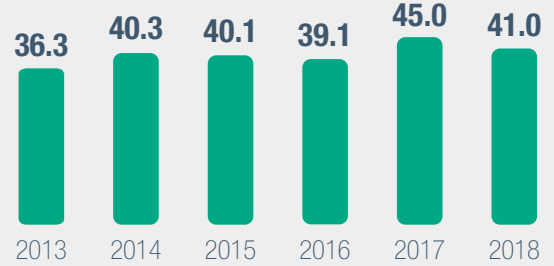
Implementations and investments in waste water treatment plants play an important role in improving the water recovery performance of Tüpraş. In this way, while the amount of water recovered for production is increased, the recovered wastewater is discharged to the natural receiving environment by reaching pollution loads far below the limit values specified in the relevant regulations. In this way, due to Tüpraş activities, there is no negative impact on the biodiversity value of water resources and natural receiving environment. Tüpraş refineries discharged 14.9 million m³ of waste water in 2017 and 14.3 million m³ in 2018 in accordance with the limit values specified in legal permits.

In the refining sector, the process water used is treated with innovative wastewater treatment systems for the protection of natural resources and this way, high quality process water can be obtained.

WATER CONSUMPTION PER PROCESSED CRUDE OIL (m³/ton)



MEETING THE WATER DEMAND WITH RECOVERED WASTE WATER RATE (%)



Compared to conventional waste water treatment methods used in refineries today, more efficient and energy-saving systems are needed by developing innovative systems. Tüpraş is a partner in the INTEGROIL Project, which is run within Horizon 2020 and supported by the European Commission. Within the scope of the project, it is aimed to develop a more efficient and advanced water treatment system compared to the conventional waste

water treatment systems currently used and to make it commercially viable. The pilot scale system was designed and manufactured in 2017, and the installation at the İzmit Refinery was completed in 2018. Being the sole refinery partner of the project, Tüpraş is also the first company to test the developed technology. If the newly developed technologies are feasible and economical, there will be an opportunity to integrate them into refineries at industrial scale.

KOÇ GROUP WATER RISKS REPORT

In 2017, within the scope of “Water Risks Detection Project“, “Koç Group Water Risks Report” was prepared. In the report, in order to establish the systematic determination of water risks, the risks that different Group companies in the same basin including Tüpraş may face are evaluated in terms of quantity and quality of water resources. In assessing water basin based risks, the impact of legal regulations in Turkey on physical risks was investigated. Company-based or joint aspects are discussed.



WASTE MANAGEMENT



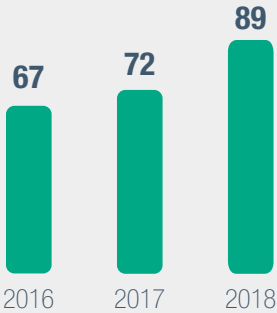
In terms of waste management, Tüpraş primarily aims to reduce the amount of waste, to recycle the wastes generated by separating at their source and to dispose the unrecoverable wastes by appropriate methods. Monitoring of all these processes, monitoring and reporting of compliance with relevant laws and regulations are carried out through the Waste Management Program. Waste management processes are carried out in accordance with Tüpraş Waste Management Standard and within the framework of legal requirements in national regulations.

Hazardous wastes are stored in hazardous waste storage areas and non-hazardous wastes are stored in scrap waste areas. In 2017, a total of 31,392 tons of waste, 17,811 tons of which is hazardous and 13,581 tons of which is non-hazardous, was generated. As a result of the activities in 2018, a total of 32,646 tons of waste, 23,617 tons of hazardous and 9,029 tons of non-hazardous waste, was generated. The waste recovery rate, which was 67% in 2016, increased to 72% in 2017 and 89% in 2018. Non-recyclable wastes are disposed by licensed companies with norms and methods defined by legal regulations. It is aimed to increase the waste recovery rate continuously.

SLUDGE DEWATERING PRACTICES

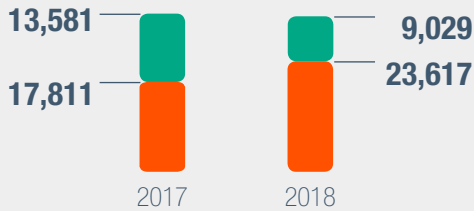
Sludge from sewer cleaning, tank bottom sludge and mechanical sludge of treatment plant contain water and oil. With the decanter system used, 20% of the oil in the sludge is recovered and all of the water is treated and discharged. Thus, the volume of sludge to be sent to disposal is reduced by about 90% and the cost of disposal is reduced. In addition, the oil retained by the decanter system is also recovered.

Waste Recovery Rate (%)



Amount of Waste (ton)

■ Non-Hazardous Wastes ■ Hazardous Wastes



RAIL TRANSPORT: SAFER, GREENER, ECONOMIC



Rail transport which has a great importance in logistics operations in developed economies has remained in the background for many years in Turkey due to lack of infrastructure. Therefore, the share of railways used in the transportation reaching up to 40% in European countries, have just stayed around 4% in Turkey, hence the logistics load concentrates upon highways.

Looking for a safer, greener and economic alternative in logistics operations, Tüpraş started to use the railway in its product transportation activities with TCDD and carried out 250,000 tons of logistics operations in 2008. Over the years, Tüpraş increased the investment in the rail transport, and with the establishment of the Körfez Ulaştırma A.Ş. during the reporting period, Tüpraş has become Turkey's first private railway train operator.

By giving railway operations a unique corporate identity and the infrastructure investments made, the volume of transported products accelerated significantly and increased by 7 times compared to 2008 and reached 1.8 million tons in 2018. With 78 employees and 90 railway personnel, Körfez Ulaştırma A.Ş. has 439 wagons as its own assets and 5 TCDD locomotives. In addition to 13 trains, 10 diesel locomotives and its own wagons, 26 wagons belonging to Opet and 200 TCDD wagons can be used for transportation.

Currently, Körfez Ulaştırma A.Ş. operates in two-way routes on İzmit-Kırıkkale, İzmit-Batman, Kırıkkale-Batman, Kırıkkale-Mersin and Batman-Mersin lines. The company will also increase third party transportations, assuming a 10% portion of the railway freight transport alone in Turkey in the near future, thus aims to become the largest fuel carrier. In line with this objective, an investment decision of 50 million USD was made in 2018.

MORE ENVIRONMENTALLY TRANSPORTATION

92% of the GHG emissions of the transportation sector in Turkey arises from road transport, and only 0.5% accounts for rail transport. By using the railway to transport 1 ton of product for 1 km; Tüpraş consumes 60% less fuel compared to the road transport and therefore generates less emissions. With the commissioning of the lines in the railway network, it is aimed to reduce the emission of approximately 8.300 tons of CO₂ annually.¹

SAFER TRANSPORTATION

Railway transport is a much safer model than highways. In Turkey, 50,000 people lost their lives in road accidents in the last 10 years, which is much less on railways. In 2018, 410,000 tons of products were withdrawn from the road and transported through railways, thus 17,000 tankers were withdrawn from the highways and total road transport was reduced by 8.5 million km. On the other hand, since the hazardous material load is far away from settlements and other vehicles, the potential risks and hazards are significantly reduced. As of 2018, Tüpraş reduced the share of road transports in domestic hazardous material transport to less than 8% and is expected to reduce this rate to 2-4% in the coming years.²

MORE ECONOMIC TRANSPORTATION

Railway transports are at almost half the cost of road transports. In 2018, Tüpraş increased its logistics efficiency by providing significant savings through rail transport.

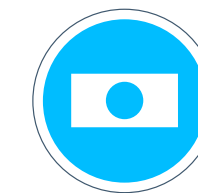
¹You can reach the GHG impacts of transportation activities in Turkey from the Ministry of Environment and Urbanization website. A trailer carrying 25 tons of Cargo load on average consumes 35 liters of fuel per 100 km.

²You can reach the statistics of road and railway accidents by years from TÜİK website



R&D, INNOVATION AND DIGITAL TRANSFORMATION

The most significant commitment of Tüpraş in R&D is to continue to produce its own technology and make a difference in the future with innovative projects. With the responsibility of being a leading company and a future-oriented perspective, Tüpraş conducts internal entrepreneurship and open innovation efforts to create value with new products, services, processes and business models. Through the Digital Transformation Program launched in 2017, Tüpraş aims to be ready in all areas of the changing energy sector.



72.1 Million TL
Total R&D Expenditure
During 2017-2018
Period



231
Total Number of
Scientific Publications
Since the Foundation
of R&D Center



22
Total Number of
Registered Patents
Since the Foundation
of R&D Center



85
Total Patent
Applications Since
the Foundation of
R&D Center

BEST R&D CENTER AWARD TO TÜPRAŞ

Tüpraş R&D Center received the Best R&D Center Award in the petroleum and petroleum products sector in the assessment made according to 2016 data at the 6th Private Sector R&D and Design Centers Summit organized by the Ministry of Science, Industry and Technology in 2017.

The most significant commitment of Tüpraş in R&D is to continue to produce its own technology and make a difference in the future with innovative projects. With its local capacities and unique engineering activities, it makes significant contributions to increase the gains of the country with its outputs. Aiming to move the R&D Center to a leading position in the petroleum and petroleum products sector, Tüpraş allocated 33.7 million TL to R&D activities in 2017 and 38.4 million TL in 2018.

R&D ACTIVITIES



In Tüpraş, two committees were established to develop R&D projects with strong innovative aspects and applicable outputs. The first of these is the Evaluation Committee founded to review the activity suggestions received from employees and targeted to be carried out as projects. The Board meets with the participation of refinery managers, related technical managers and R&D chief engineers under the chair of the Technical Assistant General Manager. This board assesses projects in various dimensions such as industrial R&D content, level of technology and innovative aspect, adequacy of project plan and company infrastructure, and project outputs being able to be transformed into economic benefits for Tüpraş and Turkey. The main objective is to maximize the added value of the projects carried out at the Tüpraş R&D Center. The second committee for strategic objectives is the Advisory Board. The objective of the Advisory Board is to lead Tüpraş R&D activities in a macro dimension, guiding and orienting R&D activities while shaping strategic objectives, enabling long-term technological and innovative work to be foreseen. The relevant committee is composed of sector representatives, academicians and consultants.

Moreover, in order to carry out the studies in a more efficient and systematic manner in parallel with the strategic goals of the company, technology roadmap identification, in-house promotion and dissemination

activities were carried out. The technology roadmap is not considered as goal for the organization, but as an administrative tool, and it is aimed to be kept as a living and active document at all times in order to achieve long-term company objectives.

Tüpraş R&D Center develops qualified and innovative projects with the aim of implementing innovative technologies, practices and sustainable solutions, developing new products that meet the needs of the sector and increasing refinery efficiency. Since its establishment, a total of 180 projects have been implemented in the Tüpraş R&D Center. While 141 of these projects were carried out with own resources, 31 projects were supported by TUBITAK TEYDEB. In addition, it participated in a total of 9 projects benefiting from EU support such as EUREKA, 7th Framework and Horizon 2020. In 2017, TEYDEB application was approved by TÜBİTAK for 4 new projects that serve Tüpraş's strategic objectives such as developing an innovative application to increase efficiency in the delayed coking unit, developing different and high quality fuel products, modeling and digitalization for refining processes at molecular level. One of the 5 projects being implemented in 2017 within the scope of European Union Horizon 2020 Grant Program was successfully completed. In 2018, two other projects with which Tüpraş was a project partner were granted the Horizon 2020 Grant Program.

SafeAST

Aboveground tanks are often used today for the storage of crude oil and liquid refinery products. However, corrosion or possible punctures due to different reasons in tanks may cause leakage of crude oil and petroleum products to underground and cause soil and groundwater pollution. For this reason, it is an important need to detect such potential damages in tanks in advance and to take proactive measures. In line with this need, SafeAST project aims to continuously monitor the tank bases and to identify possible damages in advance and to reduce maintenance costs. During the period, the system was tested on one of the tanks in Tüpraş İzmit Refinery. The project was supported by the European Commission within the scope of Horizon 2020 and was successfully completed in 2017.

BAMBOO

BAMBOO, a Horizon 2020 project launched in 2018 with the participation of 19 business partners from 9 countries, will be commercialized by testing new technologies for energy recovery from waste heat. Tüpraş, the refining partner of the project to be implemented in energy intensive sectors, is piloting the Tüpraş İzmir Refinery for the energy recovery of the innovative heat exchanger and ORC system to be developed.

A FIRST IN TURKEY: PILOT CATALYST PLANT

The official opening of the Pilot Catalyst Plant, which was established in the Tüpraş R&D Center Pilot Facilities building, was realized in 2018. The performance tests of catalysts in hydrocracker and desulfurization units are carried out continuously 24/7 in the first pilot plant having catalyst testing system in Turkey with its integrated auxiliary systems. With the results of performance tests, the development of catalysts that provide medium distillate and the efficient use of existing catalysts in the refinery make a significant contribution to the profitability of the refineries.

MOLECULAR MODELING OF COKER REACTIONS

Low-value petroleum residues produced in Tüpraş refineries, are consumed by putting into reaction at high temperatures in Coker unit of the Tüpraş İzmit Refinery; thus converted into more valuable products such as LPG, gasoline, aircraft fuel and diesel. Even a 1% increase in the efficiency of the valuable products (gasoline, aircraft fuel or diesel) produced as a result of the reactions carried out in large capacities in the Coker unit provides significant environmental and economic benefits. The aim of this project is to increase the efficiency of the unit by modeling the Coker unit reactions at the molecular level and developing optimization processes by using this model. Preliminary studies of the project have been completed and qualified to be granted by TÜBİTAK TEYDEB for modeling and optimization efforts.

HIGH VALUE ADDED FUEL PRODUCTION FROM WASTE CARBON DIOXIDE

At the Tüpraş R&D Center, a catalytic system is being developed to convert waste carbon dioxide into high value added fuels and return it to the fuel pool. In this way, it is aimed to convert process waste CO₂, which has no fuel value, into valuable fuels in a sustainable and environmentally friendly way and to reduce carbon emissions. It is foreseen that this study, which is currently at a laboratory stage, will reduce the CO₂ emissions of the hydrogen units in Tüpraş İzmit Refinery by 6,205 tons annually in the long term.

iPerm

The aim of the iPerm project, supported by the European Commission within the scope of Horizon 2020, is to develop an innovative monitoring system that enables technical control in the pipelines where it is hard to access by using "Guided Wave" technology. With this system, a measurable increase in the detection, evaluation and monitoring of the problems in the pipelines is planned. The project will also enable the minimization of scaffold costs required by traditional methods and occupational safety risks. The product developed by the project partners was installed in Tüpraş İzmit Refinery in 2018 and data collection from the field has started.

One of the prominent working principles of Tüpraş R&D Center is to work in close cooperation with internal and external stakeholders. Within the framework of Tüpraş's R&D strategy, the accumulation of knowledge that will emerge after joint studies with universities and research centers is of utmost importance for the company's sustainable success and future. Tüpraş, which aims to provide high-quality workforce to the sector, attaches great importance to the cooperation with universities. According to the results of the R&D Centers Performance Index published annually by the Ministry of Technology and Industry, Tüpraş R&D has been among the highest performing companies in the field of cooperation since its foundation. In 2017, mutual visits were made with universities in order to strengthen cooperation with universities. With the support of Tüpraş, Koç University – Tüpraş Energy Center (KÜTEM), the first energy center established with a private sector contributor in Turkey, was formed under Koç University. In addition, collaborations

with various universities in the field of academic consultancy and training services continued within the scope of the projects carried out in the R&D Center.

Tüpraş encourages R&D Center employees to follow scientific developments and scientific activities. Tüpraş R&D Center has published 27 international and national scientific articles in 2017 and 38 in 2018. Thus, the total number of articles published increased to 231. In addition to this, great importance is attached to patent studies within the scope of R&D studies. In 2017, 3 national and 3 international patent applications were made and 9 patent applications, 7 of which were national, were registered. In 2018, 4 national and 2 international patent applications were made and 1 European and 2 national patent applications were registered. Thus, as of the end of 2018, the total number of registered patents of Tüpraş reached to 22, including 16 national, 3 European, 3 USA and Canada.



FUDIPO

The objective of the FUDIPO Project, which was initiated in 2016 and to be completed in 2020, is to ensure that control and optimization, two of the basic elements of the production processes, can be used effectively at all stages of production and that these stages can be integrated to support each other. The project will enable to establish an optimization platform in which open source, multiple models can be integrated. The project, which continues to develop a model for a selected unit at Tüpraş İzmit Refinery, is supported by the European Commission within the scope of Horizon 2020.

PIANISM

Meetings were held with partners to participate in the consortium of the PIANISM project, which will be conducted within the scope of ITEA-3 cluster of the European Union EUREKA program, and the first stage application was completed. The aim of the project is to create forecasts with advanced data analysis methods in production processes and to contribute to process efficiency and operational reliability by developing an application to automate processes using these estimations. The project will serve as an example for the Industry 4.0 applications to be implemented in Tüpraş.

Indus3Es

Within the scope of the Indus3Es project, which was initiated to recover and recycle low-temperature waste heat from industrial processes, an absorption heat exchanger system was developed to recover waste heat. Design and production of the system was completed and industrial field application and verification will be implemented for the upcoming period at the Tüpraş İzmit Refinery. Indus3Es project is supported by the European Commission within the scope of Horizon 2020.

DETAILED AROMATIC CONTENT ANALYSIS OF HEAVY VACUUM GAS OIL (HPNA) PROJECT

The chemicals in heavy vacuum gas oil (HVGO) used in diesel and jet fuel production process turn into unwanted impurities (HPNA) and cause performance problems in hydrocracker units. Within the scope of the project, initiated in 2017, HPNA forming factors were examined and analysis method was developed for problem solving.

In line with the test results achieved through analysis method developed, daily operations of the refinery are managed and the efficiency increasing studies in hydrocracker unit may be conducted. Moreover, the contents of imported HVGOs are examined and those with broken product content are not sent to diesel production.

A.SPIRE

A.SPIRE is a non-profit, international platform established as part of the Horizon 2020 Framework Program, representing the private sector as a partner in the SPIRE public-private partnership. Tüpraş is the first Turkish company to join the A.SPIRE platform. The platform, which directs EU policies and projects and directly addresses the European Commission as a representative of the private sector, supports open innovation efforts. Representatives from Tüpraş Innovation and R&D departments attend the meetings.

INNOVATION



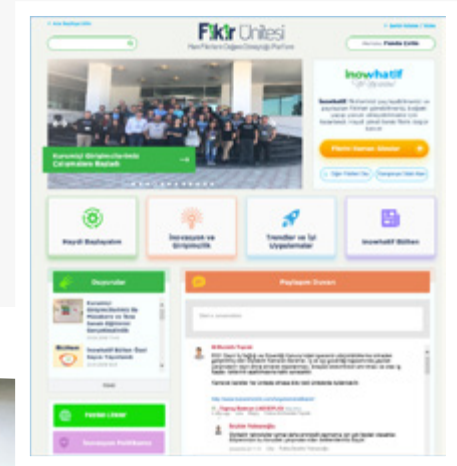
In order to create value with new products, services, processes and business models, Tüpraş carries out intrapreneurship and open innovation efforts. In this context, in 2017, Tüpraş participated in the Koç Innovation Program and founded the Innovation Directorate. Following this, the company's innovation strategy was identified; communication and training activities were carried out to initiate innovation management infrastructure studies.

Intrapreneurship Activities

Intrapreneurship programs support ideas to find new growth areas in line with innovation focus areas. Intrapreneurs who submit their ideas in certain periods through the Idea Unit Portal are supported in all steps from idea stage to implementation. Within the scope of intrapreneurship programs, in 2017-2018, more than 60 intrapreneurs had the opportunity to work with ideas similar to the working methods of start-ups by receiving entrepreneurship methodologies intensive trainings and entrepreneurship mentoring support.

IDEA UNIT PORTAL

In 2017, following the motto “Platform Converting Raw Ideas to Value”, Tüpraş launched the Idea Unit Portal, which became a tool for extending innovation culture throughout the company besides being a platform enabling employees to share their innovative ideas. Through this portal, employees can publications on innovation and entrepreneurship, get information on new trends, technological and sectoral developments besides interactive idea sharing on innovation and entrepreneurship subjects.



INNOVATION VOLUNTEER TEAMS

Innovation Volunteers teams consist of employees from various seniority levels who volunteer through the Idea Unit Portal. Special trainings and work programs are organized for the volunteer team to share the fundamentals of open innovation and corporate entrepreneurship.

SPECIFIC FUELS PROJECT

Gasoline, jet and diesel class products with special specifications are imported from abroad to Turkey. In order to comply with regulations designed to reduce the impact of fuel emissions on the environment and human health, automotive manufacturers carry out calibration, certification and emission tests of gasoline and diesel fuels with different properties than pump fuel.

Through flexible production capability, Tüpraş has the potential to increase product range and meet the demands for special fuels. When this application put into practice, Tüpraş will assume the opportunity to keep its leader role in the domestic market and open up to the EU and Middle East market by employing its expertise in a new field.

In 2017, R&D Center has developed formulations and mixture models of related fuels, within the scope of the project for the evaluation of specific fuel production. The project is included in the intrapreneurship process in 2018. With its customer-oriented and innovative perspective, Tüpraş works on commercialization and product diversification processes.

Open Innovation Activities

Within the scope of its open innovation strategy, Tüpraş aims to find innovative solutions to its needs within the company and to capture new growth areas by following the disruptive technologies. Accordingly, the areas of need of all business units are collected by the Innovation Directorate; Solutions from the domestic and international start-up ecosystem are brought to

the relevant units of the company. The Company is actively communicating with more than 40 start-ups from Turkey and abroad, working within the framework of open innovation areas and efforts are underway to develop cooperation.

Within the scope of open innovation activities, Tüpraş also participates as a speaker in various activities for early and advanced stage start-ups, supports entrepreneurs and provides mentorship support.

TÜSİAD ENTREPRENEURSHIP ECOSYSTEM WORKING GROUP

Tüpraş is a member of the TÜSİAD Entrepreneurship Ecosystem Working Group, established in order to develop the entrepreneurship ecosystem in Turkey.

ENTREPRENEUR INSTITUTIONS PLATFORM OF TURKEY

In 2018 Tüpraş has been a member of “Entrepreneur Institutions Platform of Turkey”, established with the aim of improving inter-institutional learning, raising awareness about successful practices and spreading systematic applications of intrapreneurship.

Etohum

Tüpraş, which conducts various activities in order to be in close communication with the entrepreneurship ecosystem and to reach innovative initiatives and startup network at an early stage, aims to provide early access to digital technologies with its Etohum membership. In 2018, the channel created via Etohum was launched to enable entrepreneurs to deliver their innovative ideas in certain focus areas to Tüpraş. You can reach Tüpraş Etohum web page at <https://etohum.com/tupras>.

NEW IDEAS NEW BUSINESSES

In 2018, Tüpraş became a strategic partner in the New Ideas New Business Acceleration Program in order to support the entrepreneurial ecosystem and innovative ideas within the scope of open innovation efforts. Tüpraş supports early stage entrepreneurs with its experience and contributes to the development of the ecosystem. The Tüpraş Special Awards were presented to HERA, which works on virtual reality-based personality analysis and Sensgreen teams working on energy efficiency and comfort in buildings.



DIGITAL TRANSFORMATION



In addition to R&D projects, digitalization is one of the most important issues that stand out today. Not following the developments in this area and losing the pioneer position in digital technologies, data analytical studies and applications pose a risk of falling behind in the sector. In the reporting period, important steps were taken in the field of Digital Transformation, which will lead to fundamental changes in all processes of industrial companies. With the vision of creating a digital thinking structure that adds value to all stakeholders through innovative practices in the corporate culture and preparing Tüpraş for the next Industry 4.0 era, the Company aims to support and develop activities with innovative approaches in the fields of stakeholders, field applications, processes and products.

Within the scope of digital transformation studies, developments in topics such as internet of things, big data infrastructure and data analysis systems, artificial intelligence, virtual reality and 3D printing are closely followed and new projects are launched to increase expertise and knowledge in these areas. Collaboration in these areas and the use of own resources will provide the infrastructure for spreading this new technology revolution.

Aware of the importance of initiatives that develop the right technology, Tüpraş works with techno-cities and various entrepreneurship platforms in order to achieve the success of the digital transformation process planned as a long-term journey. In this context, with the initiative of Next Generation Refinery, which was established in 2017, it is aimed to introduce not yet proven technologies to the system if they succeed in terms of proof and practice.

Within the scope of digitalization studies, great importance is given to data analysis and data analysis studies. In order to reach qualified prospect employees working on data analytics, getting closer to the technology firms and academic world, Tüpraş Data Analytics Centers have been established in METU and ITU Techno-cities in 2018. In order to evaluate data analytics projects, to receive support and orientation, monthly Senior Evaluation Committee meetings are held with participation of Associate General Managers, Digital Transformation Leaders and project related executives.

Data analytics workshops were held in the refineries in order to raise awareness on data sciences and artificial intelligence, to identify needs and improvement potentials, and increase engagement. Organized under the leadership of refinery managers, during these workshops general briefings were made, teams were introduced and exemplary projects were presented. As a result, a significant progress has been achieved in terms of enabling employees from different units and seniority to share their thought, ideas and knowledge. In data analytics field, multiple projects have been launched such as estimation of failure and performance trends of various equipment, demand-sales estimation, alarm formation and process estimation, lab analysis result estimation; and first versions were presented to user experience. Developed projects aim to serve better, applicable and logical decision making based on forecasting by employing technology driven data; and enable achieved results to be used in all processes. Big Data Platform Project is one of the studies conducted in that context. In the Big Data Platform created in 2017, 300 million lines of data are stored in real time from more than 150,000 sensors on daily basis, in order to gather and interpret the data, and to generate information out of that data. Ensuring that all applications use this environment as a process data source, processes became more than 10 times faster than commercial historical database. With this data, which is used both in managerial reporting and engineering analysis, the aim is to create and manage the data stack that will form the basis for technologies such as artificial intelligence, machine learning and deep learning.

One of the most important topics under the scope of digital transformation studies is Production Optimization with Advanced Process Control. By creating computer-aided forecasts and designing controllers, it is aimed to produce at an optimum level without exceeding the quality limits. With the new system capable of self-testing and updating, in other words, learning, the standard deviation in production has been reduced from 3% to 1%, and human intervention has been reduced by 40% with algorithms designed using thousands of data. The transition to the new system, which provides significant cost advantages, continues to be implemented in all refineries.

REFINERY 3D DIGITAL TWIN

Within the scope of the Refinery 3D Digital Twin Project, which was launched in 2017, it was aimed to scan the refinery buildings and production facilities with 3D laser scanners and transfer them to the 3D computer environment, thus creating more accurate investment plans and reaching these plans in various activities instantly. The integration of drawings and technical information of the completed units was increased with the project and the basis of applications such as virtual reality was formed. When the project is completed, advanced technology applications such as virtual unit simulations, online trainings, and wearable AR technologies will be provided.

360° CYBER SECURITY

In the project, which includes measures to be taken against the cyber threats whose effect is increasing with the spread of digitalization, it is aimed to proactively monitor the cyber-attacks and anomalies of production systems and office environments, to be aware of possible alarm conditions and to monitor all digital infrastructures. In addition to the process and technical investments, various training programs were organized to raise awareness among the employees. Through the various exercises carried out during the project, operations were tested and business continuity plans were formed against IT system based possible interruptions. In order to reduce the possible impact of cyber risks, a Cyber Risk Insurance Policy was also issued in 2017.



TALENT MANAGEMENT

Tüpraş provides its employees with a healthy and safe work environment that is fair, egalitarian, inclusive, and respectful to human rights, supports continuous development and engagement. Tüpraş aims to employ the most effective and efficient way by incorporating qualified workforce with common values, and to achieve permanent superiority in the global competitive environment by continuously improving its workforce. Tüpraş's human resources processes are managed in an objective and systematic manner within the framework of international norms and legal regulations.



11.5* %
Rate of Female
Employee in Total
Workforce by 2018



70 Hours
Average Training
Hours per Person by
2018



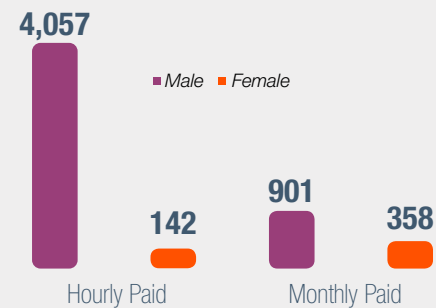
100%
Trade Union
Membership Rate
For Hourly-Paid
Employees by 2018



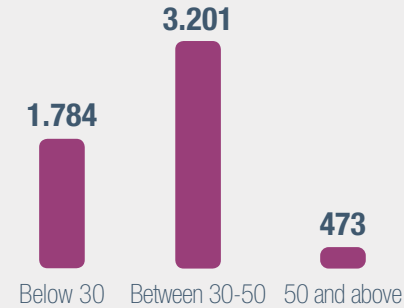
306,767 PersonxHours
Total OHS Trainings During
2017-2018 Period

* Contractor employees are included to total workforce.

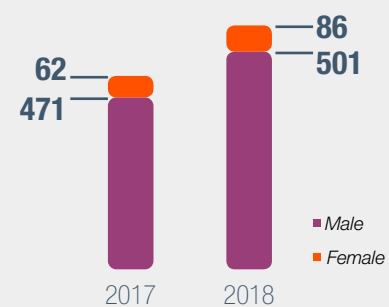
EMPLOYEE BREAKDOWN BY CATEGORY IN 2018



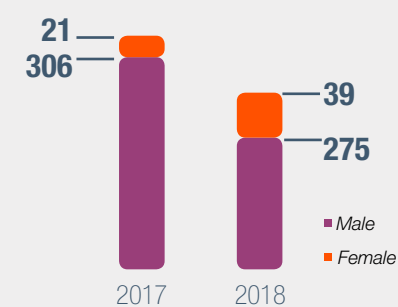
EMPLOYEE BREAKDOWN BY AGE GROUPS IN 2018



NEW HIRES



EMPLOYEES LEFT



EMPLOYEE RIGHTS



By adopting the principles of the United Nations Global Compact, Tüpraş acts in accordance with universal human rights in all its activities, does not under any circumstances be a party to human rights violations and supports the promotion of human rights within its scope of influence. Tüpraş expects suppliers and business partners to adopt similar principles and follows this understanding carefully in establishing and maintaining business relations.

Tüpraş attaches importance to the protection of the union rights of its employees. In Tüpraş, employees are encouraged to become members of trade unions

and non-governmental organizations provided that they are organized in accordance with the laws. In Tüpraş, all employees with hourly wages (77% of all employees) work under the Collective Bargaining Agreement. Tüpraş employees also take part in the management of the trade unions they are members of. As of 2018, 34 employees work in the management of trade unions. Tüpraş also expects the full implementation of trade union rights from its suppliers and business partners.

Objectivity is the basis for recruitment or other human resources processes. Tüpraş offers equal

opportunities to all employees, regardless of age, gender, belief, ethnicity or other personal characteristics, and does not allow discrimination or practices that evoke discrimination. Although there are differences in salaries and performance bonus payments for employees with monthly salaries, equal salaries are paid as long as they perform the same job. Wage payments for hourly-paid employees are made in accordance with the provisions of the Collective Bargaining Agreement along with the duty-title scale in practice.

Within the scope of its activities, Tüpraş does not allow the use of child labor, forced and compulsory labor, abuse of employee rights or situations that may evoke such practices. It also requires that these principles be adopted by suppliers and business partners. These principles, which are

explicitly regulated in the procurement contracts with suppliers, are also audited through supplier visits.

Tüpraş aims to increase female employment and the number of senior female executives within the framework of the “Declaration on Equality at Work” signed by Koç Holding. In this context, it encourages women’s employment in the refining sector through practices such as vocational training and internship opportunities for women, and extension of legal rights in favor of female employees. In 2017, the number of female employees increased by 10% to 453 and in 2018 to 500. Within the scope of Gender Equality activities, female employees participated in university activities in order to make women employees more visible and information was given about being a female employee in the refinery sector.

REFINERY MOTHERS MENTORSHIP PROGRAM

With the “Refinery Mothers Mentorship Program” initiated in 2018, Tüpraş supports female employees in facilitating the adaptation of new mothers and prospective mothers to postnatal work, and the ability to carry out motherhood and career together. Within the framework of the program implemented under the motto “My Energy is my Refinery”, experienced mothers working in Tüpraş mentor new mothers and expectant mothers.

FATHER SUPPORT PROGRAM

Tüpraş Batman Refinery employees participated in the Father Support Program provided by the Mother and Child Education Foundation (AÇEV). A total of 126 Tüpraş employees, two of whom were with their spouses, took part in the study conducted to ensure that fathers assume responsibility in childcare and to establish a healthy relationship with their children and support their development effectively. The first stage of the 10-week program took place in November 2018. Since 1996, AÇEV has been providing awareness trainings for fathers to assume responsibility for childcare.

Tüpraş Employee Engagement

The Employee Engagement Survey at Tüpraş is repeated every year with the participation of all employees. The research is carried out through the surveys conducted by an independent international research company and all employees’ opinions are obtained. In line with the feedback received from employees, new projects are implemented and practices aiming to create satisfaction are launched.

EMPLOYEE BENEFITS

Tüpraş implements human resources practices aimed at increasing employee happiness and loyalty. Promising a satisfactory work environment for its employees, Tüpraş offers various opportunities to raise the living standards of its employees and their families. Employees receive a wide range of benefits based on mutual interest. Under the KoçAilem Program, Tüpraş employees can benefit from the products and services offered by Koç Group companies for favorable costs throughout their retirement.

Upon request, Tüpraş employees and their families may benefit from Koç Holding Pension and Assistance Foundation pension insurance and the Group's private health insurance. Within the scope of the Extended Health Insurance Program, all employees who are not members of Vakıf Health are covered by complementary health insurance. 4,780 Tüpraş employees benefit from voluntary pension insurance by the end of the reporting period. While the employees included in the program pay 6% of their gross wages provided that it does not exceed the ceiling wage, the same amount is transferred to the fund by Tüpraş. In 2017-2018, 38.4 million TL was transferred to the fund as employer participation share.

With the Flextra Package, a flexible supplementary benefit practice, options such as life insurance, gift and discount checks, individual pension programs are offered to employees as options according to their lifestyles and different needs.

AVİTA Employee Support Program is a 24/7 consultancy and information service provided by the experts of the field and available to the employees and family members of the Company, in any area where the person may feel stressed and need support. It has been actively used for 2 years.

Avita Employee Support Program provides employees and their families with private psychologist, doctor, orthopedist, nutritionist, lawyer, financial advisor, and a research assistant who can assist with general information needs. Uninterrupted service is available 24/7.

In order to ensure the rapid adaptation of the newly recruited Tüpraş employees to the corporate culture and work, a Guide Support Program is implemented during the first 3-month orientation period.

In order to support the work-life balance and career development of female employees, the Nursery Benefit Package was launched during the reporting period. During the period, 43 women employees benefited from nursery assistance.

EMPLOYEE DEVELOPMENT



Within the scope of Talent Management, it is aimed to include the talents that will carry Tüpraş to the future with employer brand activities, to develop leadership and technical competencies and to make the right career planning through training and development programs designed specifically for Tüpraş. In this direction, the leadership development of the employees is supported by training and development activities designed by the sector's leading business schools and university collaborations in order to develop the professional knowledge and skills of the employees and their personal abilities.

Within the scope of leadership development programs aiming to improve the leadership competencies of employees, development programs covering topics such as effective communication, coaching and development, cooperation development and future oriented development are designed. In 2018, 173 employees have participated to training programs preparing them to leadership positions. In 2019, approximately 400 executives are expected to be included in these programs.

The talent management process, which provides the most efficient use of human resources and identifies development needs, provides guidance in backup planning, promotion and appointments. In 2018, efforts on talent management were expanded and continued. Within the scope of the Backup Planning, Tüpraş Leadership Competence Sets were used to measure the leadership competencies of the mid-level evaluation center and the top-level evaluation center, and were directed to development programs. With the internal backup system, critical positions and backup plans were created and potential talent pool was determined. With talent pools designed for different levels, it is planned to find talented employees in Tüpraş, and to design programs for leadership competencies and individual development.

Tüpraş has a successful and widespread internal training system. Training activities are managed in accordance with Tüpraş Internal Training Management Standard and training processes are monitored by training experts. There are training programs to support professional development on the basis of departments using Tüpraş's internal resources and focused on increasing the knowledge, skills and competencies of the workforce. The content of the training and the efficiency of the training operation are measured and the necessary actions are taken with the questionnaires organized after the trainings.

In order to develop the refining sector and to have fixed procedures in refining processes in Turkey, Tüpraş has established occupational standards for four different positions: Oil Refining Operator, Oil Refinery Control Operator, Oil Refinery Power Plant Operator, Oil and Products Handling Operator. Standards which were submitted to Vocational Qualifications Authority will be published upon approval.

Tüpraş conducts graduate programs in cooperation with universities in order to support education of qualified workforce that refinery sector require, to enrich sectoral studies with academic knowledge. Participation of employees to graduate programs is encouraged with various incentives. Besides Tüpraş employees following these programs as a part of their career planning, students willing to pursue their academic education may also participate.

Tüpraş aims to simplify and intensify the Refinery Training Program, which has been prepared for field workers to perform their jobs safely, with an innovative perspective. In this context, an innovative approach is applied on the program with a Scrum team created by Agile method.

In order to provide technical and professional training for Tüpraş field employees, a technical training center was established at the Kırıkkale Refinery location. It is planned that our newly recruited employees will be included in the orientation program quickly and effectively in the workshops and classrooms to be established in

this center. It is aimed for our current employees to receive a significant portion of both local and international trainings at this center. Technical Training Center which will include Rotary Equipment Workshop, Tightness & Valve Fittings Workshop, Process Equipment Workshop and Control Systems Workshop will be commissioned in 2020.

PERFORMANCE MANAGEMENT

Performance and career management system play a major role in ensuring employee development. The performance of Tüpraş employees is evaluated annually and scorecard systematic is used in the performance evaluation of office employees. Through performance evaluation meetings, feedback is provided to employees regarding performance results. Field employees are provided feedback by the senior management about the results of the period and the target expectations for the next period.

EMPLOYEE TRAININGS	2017	2018
Total Training Hours (personxhour)	233,034	384,405
By Category		
Hourly Paid Employees	129,170	281,241
Monthly Paid Employees	103,864	103,164
By Gender		
Female	35,601	34,968
Male	197,434	349,437
Average Training Hours Per Employee	45	70
By Category		
Hourly Paid Employees	32	67
Monthly Paid Employees	91	82
By Gender		
Female	79	70
Male	42	71

EMPLOYEE ENGAGEMENT



Various mechanisms have been set up to ensure that Tüpraş employees engage in decision-making, implementation and performance evaluation processes. Opinions of the employees are taken through target dissemination meetings, occupational health and safety board meetings, suggestion systems, surveys, collective bargaining agreements and social activity clubs and they are evaluated in the process improvement studies. Employees' behavior and efforts that contribute to the company's success are rewarded under the Recognition, Appreciation and Reward System. Refined Suggestions System, which is one of the basic tools in ensuring employee engagement, supports the creativity of employees by taking

improvement suggestions. Through the Refined Suggestions System, Tüpraş employees made 697 suggestions in 2017 and 392 in 2018. 4 of these proposals were implemented in 2017 and 32 in 2018.

It is important that employees participate in social responsibility activities as well as ensuring engagement in management and decision-making processes. Tüpraş employees are encouraged to participate voluntarily in projects carried out in the fields of environment, education, culture-arts, sports and health. Employees can also organize events for the benefit of the community through social activity clubs in refineries.

OCCUPATIONAL HEALTH AND SAFETY



Occupational health and safety, which is one of the main priorities of Tüpraş, is carried out in order to eliminate risks or reduce them to an acceptable level within the framework of standards. The health and safety of all employees and stakeholders in Tüpraş's operating areas is ensured with the highest level of security. HSE (Health, Safety, and Environment) Policy has been established in order to provide and protect an incident-free work environment and contractor company employees are expected to act in accordance with the rules defined within the policy. Occupational health and safety processes are carried out in accordance with OHSAS 18001 Standard and the certification is updated with independent audit activities performed regularly. Occupational health and safety processes are based on legal requirements and industry best practices are followed.

Occupational health and safety performance is monitored and continuously improved with key performance indicators. Monthly and yearly

performance is reviewed within the scope of Technical Safety Assessment Meetings. OHS Coordination meetings, including all refineries, are held twice a year to ensure control and performance evaluation.

There are 35 members in 5 OHS Boards within the Headquarters and refineries, 10 of which are employee representatives. Although this number is legally authorized to vote, close to 100 people attend the board meetings. In addition to the full members, OHS experts at refineries, unit managers and representatives from the units are among the participants.

Tüpraş organizes OHS trainings in order to inform its employees and contractor employees about OHS activities and to raise awareness and responsibility. In 2017, Tüpraş employees received 83,381 personXhours and contractor company employees received 58,348 personXhours of occupational health and safety training.

In 2018, Tüpraş employees received 87,805 personXhours and contractor company employees received 77,233 personXhours of occupational health and safety training.

In addition to training activities, Tüpraş carries out other practices in the development of OHS performances of contractor companies. In this context, in 2017, a process was initiated to carry out the services provided by the Joint Health

and Safety Units through part-time agreements, through a single JHSU capable of managing Tüpraş processes.

Work is underway to review and improve the competencies of employees at international standards. Within the scope of the Control of Work criteria, the work permit system will be made more effective and digital version trial works will be started.

ASSET MANAGEMENT

Asset management is one of the main priorities in ensuring the continuity and operational reliability of Tüpraş. The main objective of asset management practices is to ensure that production is carried out in a timely and safe manner, thus ensuring mechanical and operational integrity. Thanks to the systems and processes created within this scope, strategic decisions are implemented without interruption, without any quality or non-compliance problems, and without posing risk on human health and environmental safety.

In 2017, within the scope of Process Safety Management System and Cultural Change Project, teamwork was completed in the areas of process safety leadership program, process safety information system, process hazard analysis, mechanical integrity and quality assurance, high risk work procedures, work permit system, contractor management, change management, incident investigations, operational procedures, security management audit system, motivation and awareness. The pilot practices initiated at the İzmit Refinery are spreading to other refineries.



OCCUPATIONAL SAFETY



The basic rules and principles for occupational safety are determined by the Tüpraş Safety Principles and the “Not without 10” Tüpraş Basic Working Rules. In order to improve OHS communication, to provide information to employees on health and safety issues, weekly Incident Sharings in Tüpraş, Safety Speech, “Couldn't We Avoid These Accidents? Meetings” are organized.

Within the scope of Visible Leadership practice, behaviour-oriented safety tours are organized with the participation of Tüpraş executives, in order to support positive safe behaviors at Tüpraş refineries, to increase general safety awareness, to follow up field practices in terms of safety standards and to reduce the potential for accidents. With the active participation of executives, visible leadership is shown in safety tours, positive safety behaviors are appreciated and encouraged, risks are identified and corrected in individuals' behaviors and working conditions are strengthened, communication and dialogue for safe work environment is strengthened, awareness is provided and an environment is created where employees can share their opinions and observations about safety.

Tüpraş manages its occupational health and safety processes with an effective risk assessment and continuous learning approach in order to reduce occupational safety risks and raise the level of measures against potential risks. Many internal and international standards, risk assessment systematic and working procedures such as Risk Assessment Table (RAT), Hazard and Impact Management Process (HIMP), Incident Classification, Research and Reporting

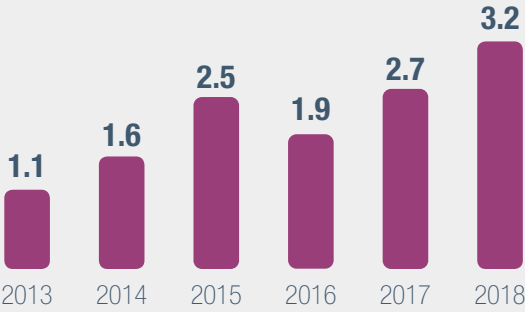
(ICRR), Contractor HSE Management System, Tüpraş Tracking System (TTS) are followed and safety risks are eliminated. In cases that reveal in spite of the measures taken, analysis and learning procedures are carried out to prevent this situation from happening again. In 2017, during the Hazard and Impact Management Process (HIMP), within the scope of preparation of risk analyzes; priority is given to recognizing and managing risks, conducting health-risk assessment studies and allocating resources to critical tasks.

The main objective of the Occupational Health and Safety System is to prevent occupational accidents and diseases through proactive approaches. In 2017, sub-KPIs were added to 14 Core Performance Indicators in order to continuously improve OHS performance and ensure performance monitoring and the total number of closely monitored indicators was increased to 21.

In the reporting period, the Business Control process was piloted at the Batman Refinery in order to improve work permit processes. It is aimed to extend the application to other refineries.

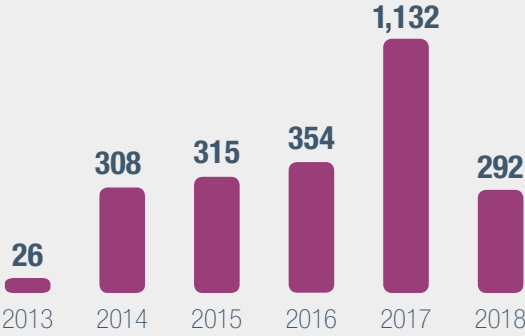
The Accident Frequency Rate indicator, which shows the frequency of occupational accidents according to the total actual working time in 2017, was realized as 2.7; accident severity rate representing the lost workday realized at 1,132 levels. In 2018, the accident frequency rate was 3.2 and the accident severity rate was 292. Analysis and learning procedures were initiated to prevent accidents and increases in occupational health and safety indicators.

ACCIDENT FREQUENCY RATE*



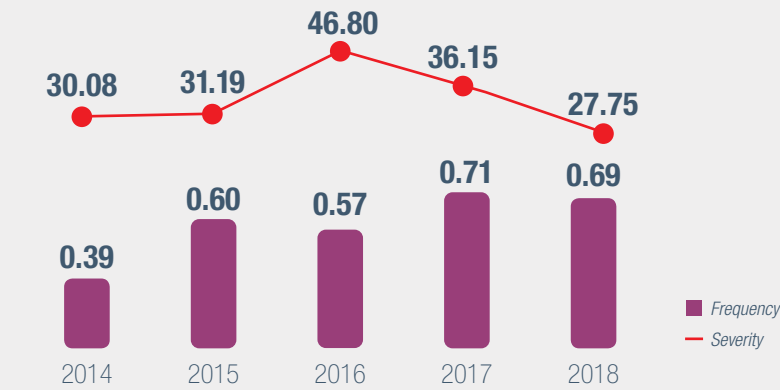
*Number of accidents x 1,000,000 / (personXhour)

ACCIDENT SEVERITY RATE*



*lost work days x 1,000,000 / (personXhour)

OSHA LTI* FREQUENCY AND SEVERITY



*Lost time injury.
 **Calculated with number of work related lost time accidents per 1,000,000 work hours and number of lost days due to these incidents.

DISASTER AND EMERGENCY MANAGEMENT

Disaster and emergency preparedness at Tüpraş are managed in line with national and international security norms and contemporary security management practices within the framework of Tüpraş Security Policy, Security Management Standard, National Marker Standard on Technical Safety, Environment and Security Measures, Search and Rescue Standard, Electronic Security Systems Standard and most particularly the Emergency Management Center Standard. At the Headquarters, the Technical Safety Directorate and the Technical Safety and Environmental Directorates at refineries fulfill their responsibilities as specified in the standards for disaster and emergency management.

In Tüpraş, practices and plans to be implemented against all extraordinary conditions and disasters such as fire, energy/water interruption, work accident, earthquake, flood, terror and sabotage have been determined in advance. Technical safety systems are equipped with state-of-the-art tools in order to minimize risks. Disaster and Emergency Management exercises are held annually in numbers and more than required by the relevant laws. Fire, disaster plan, hydrocarbon cloud / toxic gas emission and environmental spillage practices are carried out in all refineries in order to minimize and face the risks that may occur in emergencies. The performances of these exercises are evaluated at the end of the exercise evaluation meeting and the actions determined after the meeting are followed.

In 2017, Tüpraş documents were updated according to worldwide best practices by launching existing system updates within the scope of emergency response and management. The system will be put into operation after the completion of information and training activities.

The safety report prepared in accordance with the “Regulation on Prevention and Mitigation of Major Industrial Accidents” (Seveso-II Directive) was submitted to the Ministry of Labor and Social Security. Within the scope of Scenario-Based Emergency Action Plans for critical equipment in line with the Directive, relevant unit and technical safety personnel and desk and field exercises were prepared for possible emergencies. Capacity increase and renovation works of firefighting systems were started in Kırıkkale refinery in 2017 and within this scope, the first phase installation works were initiated in 2018 by completing the engineering works.

Hazard and Operability (HAZOP) studies and scenarios were prepared to identify hazards and major operational problems in existing units, to determine how deviations from normal operating conditions and intended design occur, and to systematically review every part of the process.

OCCUPATIONAL HEALTH



Providing employees with a healthy work environment is one of Tüpraş's main sustainability priorities. A series of practices are in place to protect employees against occupational and general diseases. Starting from recruitment, employees are subjected to periodic health inspections during their employment. Due to preventive measures such as health services and vaccination provided to employees, no occupational disease cases occurred among Tüpraş and contractor employees in 2017-2018.

Health Risk Assessment (HRA) studies are carried out in all Tüpraş refineries in order to identify the health hazards that may arise from the employees' environment and to assess their risks. Within the scope of HRA studies, chemical, physical, biological, ergonomic and psychological factors specific to the site are examined in detail.

In addition to its employees, Tüpraş aims to ensure a healthy life for their families and contractor employees. Employees' families and contractor employees can also benefit from training activities prepared to inform employees about healthy living and preventive measures.

PROCESS SAFETY

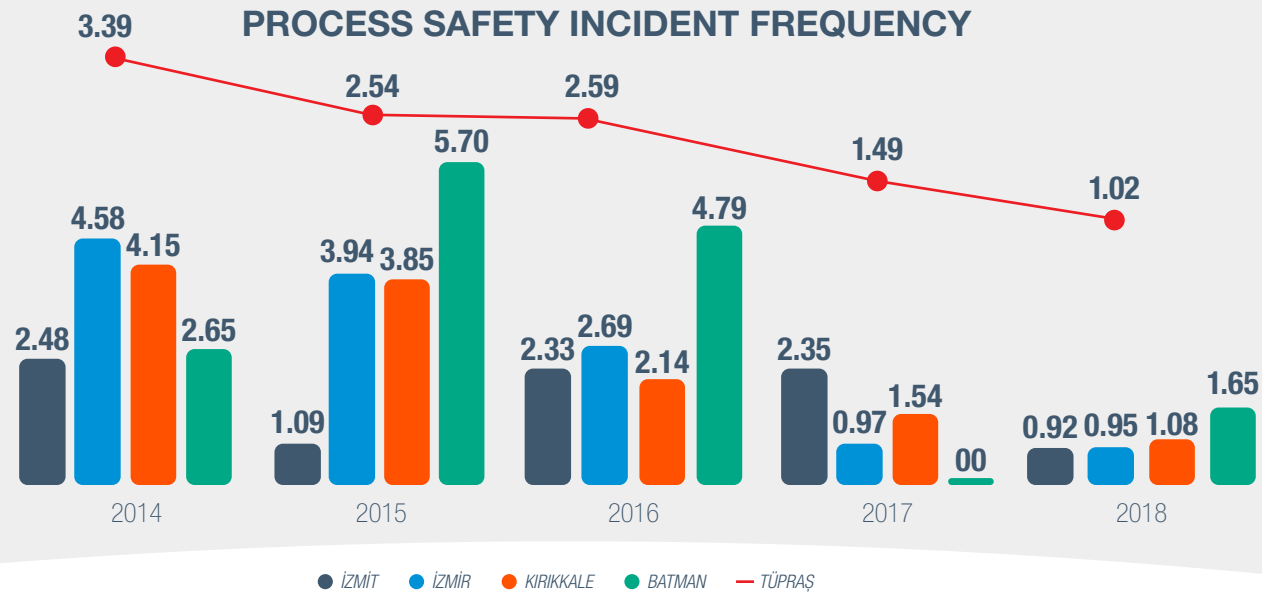


CCPS-based (Center for Chemical Process Safety) Process Safety Management System is used in Tüpraş refineries. Process Safety Management System Components are:

- Process Safety Information System
- Operating Procedures and High Risk Work Procedures
- Change Management System-Technology
- Change Management System-Facilities
- Change Management System-Personnel

- Mechanical Integrity and Quality Assurance
- Training / Competence and Performance
- Process Hazard Analysis
- Safety Controls Before Commissioning
- Contractor Management
- Incident Research and Reporting
- Emergency Planning and Response
- Process Safety Auditing

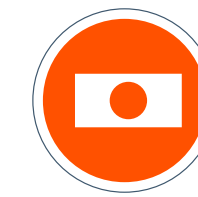
PROCESS SAFETY INCIDENT FREQUENCY



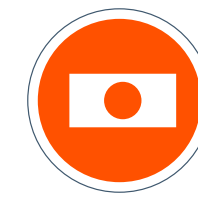


COMMUNITY DEVELOPMENT

As part of its corporate citizenship approach, Tüpraş accepts as a fundamental responsibility to contribute to community development. In this context, on the one hand, while contributing to the strengthening of the local economy with the support it provides to the national economy, it also carries out social responsibility projects that will create value for the society.



64.0 Billion TL
Total Tax Payment
During 2017-2018
Period



70.6 Million TL
Amount of Donations
and Sponsorships
During 2017-2018
Period

ENDLESS ENERGY FOR EQUALITY



Tüpraş believes that women's participation in the labor force is one of the key elements to the development of societies. With this perspective, during the reporting period, the Company continued to carry out activities that increase awareness on supporting women in many areas of life both in the workplace and in the society.

Since 2015, Tüpraş, under the leadership of Koç Holding, has supported the UN Women's HeForShe movement, which invites men from all over the world to advocate gender equality shoulder to shoulder with women. In 2017, it announced its objective to become an inclusive workplace by signing the UN Women's Empowerment Principles (WEPs), which guide companies to strengthen women's position in society and in corporate life.

Tüpraş established a global cooperation with UN Women and Fenerbahçe at the end of 2018 in order to reach a wider audience in the name of equality. It aims to create an awareness for equality with millions of Fenerbahçe fans in football, which is a world dominated by men just like refinery business.

Within the scope of the awareness movement launched on 11 November 2018 with Koç Holding's motto "We Are Equal Together" and Tüpraş's motto "Endless Energy for Equality", Fenerbahçe A Football Team has started to wear HeForShe logo on the right arm of his jersey. Cooperation is the only large-scale commitment to gender equality in the field of sports.

CONTRIBUTION TO LOCAL ECONOMY



The primary objective of Tüpraş is to fully meet the petroleum products needed by the national economy. By taking this aim one step further, Tüpraş contributes directly and indirectly to the national economy through local procurement practices, support to vocational training, tax payments and impacts on a wide economic area.

Direct and indirect tax revenues arising from Tüpraş activities have a significant share in Turkish total revenue. Tüpraş made a direct contribution to the economy of the country by making tax payments of 42.4 billion TL in 2017 and 21.5 billion TL in 2018. This amount paid by Tüpraş has an average share of 8% in the GDP of the country.

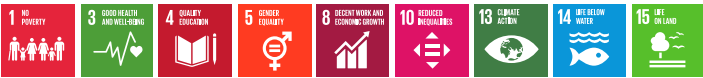
Another area where Tüpraş contributes to the local economy is local procurement practices. Priority is given to local suppliers among those who meet

the required norms when purchasing activities are carried out. 72% of procurement activities in 2017 and 62% in 2018 were conducted through local suppliers. Besides, an indirect contribution has been made to the local economy by the employment of tens of thousands of individuals throughout the wide value chain generated from Tüpraş operations.

In 2018, Tüpraş continued to support the professional training of its business partner employees, high school and university students. During the term, 815 students were offered internship opportunities at TUPRAŞ refineries within the scope of compulsory internship processes in summer and winter months. In 2019, it is aimed to recruit interns within the scope of Nextremers program, which is a long term project based internship process.



SOCIAL RESPONSIBILITY



In order to fulfill its social responsibility, Tüpraş carries out social responsibility projects in the fields of education, environment, culture-arts and health, or supports projects and initiatives established by various organizations. The results obtained from bi-annual corporate reputation and perception

surveys with different stakeholder groups are guiding in the planning of social projects. Tüpraş allocated TL 30 million in 2017 and TL 40.6 million in 2018 to its social responsibility projects, donations and sponsorship activities.

TÜPRAŞ CONTRIBUTION TO KOÇ HOLDING'S "WE SUPPORT GENDER EQUALITY FOR MY COUNTRY" PROJECT

“For My Country” Project is a umbrella project aimed at spreading the concept of social responsibility among Koç Group companies, employees, dealers and suppliers. The project aims to develop a more engaging attitude towards social problems and to implement projects that will raise the life standards by supporting local development. The aim of the “For My Country” project, whose theme is identified as Gender Equality, is to raise public awareness of the causes and consequences of gender inequality, to eliminate stereotyped judgments, to become a role model by developing a more egalitarian approach in business culture and social life.

While awareness raising seminars were held throughout the company, Tüpraş Social Activities Clubs organized events to draw attention to the topic. In 2017, SEK Kırıkkale theater group staged plays for the benefit of Turkey Family Health and Planning Foundation (TAPV) and the Turkish Education Foundation. Tüpraş İzmir Social Event Theater Club was awarded in the category of Corporate Theaters at the 17th Inter-Mast Audience Awards ceremony hosted by Manisa Metropolitan Municipality City Theater.

Through “Equality Starting with Fairy Tales” Project, designed by the volunteers of the İzmir Refinery, Turkey Family Health and Planning Foundation instructors gave gender equality trainings in a selection of pilot schools. TAPV instructors and volunteers help children to complete the tales with the perception that colors, strength, professions, games have not sharp lines separating boys and girls from each other.

EDUCATION

Strengthening Vocational Education and Training System Project (SVET)

SVET Project includes the cooperation for the training of technical workforce in the Refinery and Process branches under the field of Chemical Technology, through the protocol signed with the Ministry of National Education in 2007 within the framework of the Tüpraş Technical Training Program. In this context, SVET students continued their internships at İzmir, İzmit and Kırıkkale Refineries in 2017 and had the opportunity to visit the refineries for field practices from time to time as required by the module they conduct in their schools.

In 2018, 18 students from the 12th grade in Körfez Technical Industrial Vocational High School- Machine Maintenance and Repair branch completed the internship at the İzmit Refinery. 18 students from the 11th grade came to the refinery four times a year in accordance with the module they have worked in their schools and received training in Machine Maintenance and Refinery Operation with the help of the chief engineer and engineers and had the opportunity to transform the theoretical knowledge acquired in their schools into one-to-one practice. Within the scope of the project, the personal development of the students was supported by volunteering coaches for the 11th grade, 18 SVET students at the beginning of the semester. The students participated in İzmit Culture Trip, Koç Museum Activity, and book reading project, Refinery General Information and Refinery technical trips with their coaches.

Fireflies on the Road

Since 2008, Tüpraş has been the operating sponsor of 5 Firefly Mobile Learning Units of Turkey Education Volunteers Foundation. Mobile learning units that serve to accustom children to lifelong learning and contribute to their emotional and mental development, implement a training program consisting of activities in the fields of informatics, mathematics, science, reading and arts.

In 2017, TEGV Firefly Mobile Learning Units trained 10,304 children in Afyonkarahisar, Bilecik, Hatay, Van, Kars and Şanlıurfa. In 2018 implementation of the project, 7,397 students were reached in Afyon, Bilecik, Hatay, Iğdır, Kars, Şanlıurfa and Diyarbakır.

During the 10-year period supported by Tüpraş, a total of 262,627 students rparticipated to the program.

Batman April 23rd Children's Festival

Tüpraş continued its traditional April 23rd activities during the reporting period. On April 23rd Batman Children's Festival, which brought together Provincial Directorate of National Education of Batman Governorship, district school administrators and teachers, NGOs, Tüpraş employees and their families, hosted 1,500 children in 2018. Since 2008, 21,250 children have been hosted at the April 23rd Batman Children's Festival, which is one of the “Most Successful Koç Members Award” winning social development projects.

Koç University Anatolian Scholarship Program

Since 2011, Tüpraş has been supporting the Koç University Social Sciences Outstanding Achievement Scholarship Program, which aims to serve the development of social sciences in Turkey and has been continuing at Koç University in Turkey. In 2017-2018 academic year, two Ph.D. students in Archeology and Art History, one in Sociology and one in Economics Department continued their education with the scholarship of Tüpraş.

Within the scope of the Anatolian Scholarship Program, which provides equal opportunities in education to young people by providing scholarships to successful and students needing financial support throughout the country, Tüpraş provided scholarship to two more students in 2017-2018. To date, 14 students have been supported by Tüpraş and one of the first scholars has graduated and started to work at Kırıkkale Refinery.

TEV Endless Energy for Equality Scholarship

Tüpraş aims to provide equal opportunities in education to girls; in the 2017-2018 academic year 30 scholars benefited from the support of the Endless Energy for Equality Scholarship, which was established in cooperation with the Turkish Education Foundation (TEV). In 2017 and 2018, Tüpraş Social Activity, Music, Travel Gourmet, Photography and Theater Clubs continued to fund-raise with their activities. UNICEF Turkey and Foundation of Freedom Again to Turkish Children (TCYOV) are also among other foundations funded by clubs.

ART AND CULTURE

Anatolian Civilizations Series

Since 2009, Tüpraş, in cooperation with Yapı Kredi Culture and Arts Publishing, has carried the long-established civilizations that left their mark on the ancient lands of Anatolia to the next generations with the book series “Anatolian Civilizations”. The books of the series after Urartu, Phrygians, Hittites, Pergamon and Lycia were introduced to readers in 2017 and 2018, respectively, “Persians: Might and Splendor in Anatolia” and “Assyrians - God from Tigris to Taurus Kingdom of Assyria”.

Young Musicians in World Scenes

The project Young Musicians on the World Scenes, carried out with the aim of transferring 50 years of visionary experiences of world-renowned pianists Güher-Süher Pekinel to young people since 2013 under the sponsorship of Tüpraş, continued during the reporting period. The talented young individuals between the ages of 12-23, selected by Pekinels from various conservatories in Anatolia, continue their development and training in the most prestigious music schools of the world with the best quality instruments provided by the scholarship. To date, 16 gifted students have been given the opportunity to study, while 9 students are still in training. One of these scholars, Can Cakmur, became the first Turkish contestant to participate in the Japan Hamamatsu International Piano Competition in 2018. Çakmur won the first place in this competition, by taking full marks from the jury with his Liszt performance.

İKSV Istanbul Theater Festival

During the reporting period, 21st and 22nd Istanbul Theater Festivals were held by the Istanbul Foundation for Culture and Arts with the support of Koç Holding Energy Group Companies Aygaz, Opet and Tüpraş. In the festivals followed by nearly 45 thousand theater lovers in two years, dozens of theater, and dance and performance ensembles of Turkey and abroad have performed over one hundred shows. As of 2017, the 21st Istanbul Theater Festival Student Project was launched with the sponsorship of Aygaz, Opet and Tüpraş in order to increase students' access to the festival and thousands of students were introduced to the festival.

İKSV 15th Istanbul Biennial

In 2017, Tüpraş was one of the supporters of the İKSV Istanbul Biennial. The 15th Istanbul Biennial was curated by Elmgreen & Dragset in 6 different venues. The theme was “a Good Neighbor”, with 56 artists from 32 countries participating in 150 works and 440,000 visitors were hosted.

Aktüel Journal of Archeology

Aktüel, Journal of Archeology, which has been published with the support of Tüpraş since 2010, strives to find the place for Anatolia that it deserves in the world cultural heritage, which carries rich traces that have hosted hundreds of civilizations for centuries. With the motto “Leaving an Anatolia for the Future”, it is the only national archeology magazine that tells the history of Anatolia to the people of Anatolia.

ENVIRONMENT

DTO Fethiye Waste Collection Boat at Sea

With the cooperation of Turmepa, operating to protect the seas, coasts and waterways in Turkey, in 2017, DTO Fethiye Waste Collection Boat collected 778,693 liters of gray and black water from 1,154 boats and 1,147 liters of bilge.

In 2018, the DTO Fethiye boat in Göcek Gulf collected 410,550 liters of waste water from 579 boats equivalent to the daily waste water produced by 6,842 people. Approximately 21,607 carboys of black and gray water are prevented from entering the sea and 3,284,400 liters of sea water is kept clean.

Batman Volunteers Waste Recycling, Environmental and Health Awareness Raising Trainings

Tüpraş Batman Refinery Volunteers organized Waste Recycling, Environmental and Health Awareness Trainings in 2017 and 2018 in 2 schools in Batman, and 525 students received 1,050 personxhours of training and collected waste batteries, waste oil and plastic covers.

İzmit Refinery “One Sapling, Thousand Life” Project

A group of approximately 350 people participated in the sapling planting activity organized by İzmit SEK Nature Club in cooperation with TEV and TEMA. In the event, which was planned to instill the love of nature for the participants, information was given about cleaning the environment as well as planting saplings.

HEALTH

Safe Mothers, Happy Babies

With the support given to Turkey Family Health and Planning Foundation (TAPV)'s “Safe Mothers, Happy Baby” project in 2018, 5,297 households were visited. Within the framework of the safe motherhood programs implemented by the Turkish Family Health and Planning Foundation; sexual health programs, women's health education program, adolescent and youth works, safe motherhood service; safe and healthy care services that women need during pregnancy, childbirth and puerperium are handled.

Blood Donation from Tüpraş Volunteers to Red Crescent

Tüpraş volunteers continued to donate blood to the Red Crescent during the reporting period, and donated 316 blood units to the Red Crescent in 2017 and 529 units in 2018.

İzmir Refinery Lets Bring Goodness to Life Together

On December 3, 2018, International Day of Persons with Disabilities, İzmir Refinery volunteers organized an event with the motto “Let's Bring Goodness to Life Together”, in order to raise awareness in autism and support the education of children with autism; the income of the event was donated to Tohum Autism Foundation.

CORPORATE MEMBERSHIPS

AKİB - Mediterranean Exporters' Association
ATO - Aliğa Chamber of Commerce
BATSO - Batman Chamber of Commerce and Industry
DEK - World Energy Council Turkish National Committee
DTD - Railway Transport Association
EBSO - Egean Region Chamber of Industry
ICC - Turkish National Committe
İMMİB - İstanbul Minerals and Metal Exporters Association
İMEAK - İstanbul and Marmara, Egean, Mediterranean and Black Sea Regions Chamber of Shipping
İDTO - İstanbul Chamber of Shipping
İzmit Sailing Club Sports Association
KALDER - Turkey Quality Assocaition
KİD - Corporate Communications Association
KKTSO - Kırıkkale Chamber of Commerce and Industry
KSO - Kocaeli Chamber of Industry
KTO - Körfez Chamber of Commerce
TBD - Turkish Informatics Association
TBYDE - Technology Informatics Management and Audit Institute
TEİD - Ethics and Reputation Society
TEGEP - Education and Development Platform Association
TKOJD - Turkish Cogeneration Association
TKYD - Turkish Corporate Governance Association
TOBB - The Union of Chamber and Commodity Exchanges of Turkey
TURMEPA - Clean Sea Turmepa
TÜMAKÜDER - Tüm Accumulator Exporters and Manufacturers Association
TÜRKTRADE - Turkish Foreign Trade Association
TÜSİAD - Turkish Industry and Business Association
TÜYİD - Turkish Investor Relations Association

PERFORMANCE DATA

OPERATIONAL PERFORMANCE	2008	2014	2015	2016	2017	2018
Processed Crude Oil (thousand tons)	24,208	20,044	27,559	28,348	28,502	24,540
Production - Refining (thousand tons)	22,780	20,101	27,268	27,928	28,883	25,695
Sales (thousand tons)	25,957	22,194	28,739	30,255	31,493	29,830
Product Exports (thousand tons)	6,112	5,333	6,494	5,491	5,804	4,191
Product Imports (thousand tons)	2,931	2,920	2,999	3,749	4,388	6,252
White Product Ratio in Total Production (%)	68.6	72.2	75.4	76.6	76.3	77.4
Crude Oil Capacity Utilization (%)	86.0	71.3	98.1	100.9	101.4	87.3
Semi-product Capacity Utilization (%)	-	74.9	102.5	105.3	108.1	95.9

FINANCIAL AND ADMINISTRATIVE PERFORMANCE	2008	2014	2015	2016	2017	2018
Net Sales (million US dollars)	23,353	18,165	13,751	11,547	14,801	18,349
Operational Profit (million US dollars)	984	199	1,012	781	1,333	1,189
Profit Before Taxes (million US dollars)	421	84	819	644	1,227	772
Profit After Taxes (million US dollars)*	331	667	938	594	1,046	769
EBITDA (million US dollars)	1,099	338	1,397	1,125	1,614	1,846
Net Debt (cash) (million US dollars)	215	1,663	2,370	1,729	1,657	2,275
Return on Equity (%)	11	26	35	22	41	37
Net Working Capital (million US dollars)	202	-677	-53	286	713	953
Investment Expenditure (million US dollars)**	395	959	344	213	184	138
Profit per Share (TL)	1.73	5.83	10.18	7.16	15.22	14.83
Gross Dividend per Share (TL)	2.31	-	6.5	6.22	13.6	15.15
Net Dividend per Share (TL)	1.97	-	5.53	5.29	11.56	12.88
Paid Taxes (million TL)	19,975	23,433	31,916	37,548	42,430	21,536
Corporate Governance Rating	8	9.31	9.44	9.42	9.47	9.48
Fitch Ratings Foreign Currency Long Term Rating	BB	BBB-	BBB-	BBB-	BBB-	BB-
Fitch Ratings Local Currency Long Term Rating	BBB-	BBB-	BBB-	BBB-	BBB-	BB-
Procurement Operations (million TL)	164	769	1,573	1,921	1,692	1,911
Domestic	64	305	1,122	1,200	1,217	1,164
Special Production	27	20	12	5	4	13
Overseas	73	444	439	716	471	734
Local Procurement Rate (%)	55.49	42.21	72.10	62.72	72.16	61.60
Total Number of Suppliers	-	2,016	2,238	2,266	2,120	2,164

* Net profit attributable to the equity holders of the parent ** Tüpraş unconsolidated

ENVIRONMENTAL PERFORMANCE	2008	2014	2015	2016	2017	2018
Direct Energy Consumption (TJ)	76,432	66,529	90,313	101,639	104,749	91,752
Natural Gas	18,052	32,906	36,005	39,085	47,306	45,342
Fuel Oil	34,138	8,811	13,184	15,487	8,581	3,481
Fuel Gas	21,232	22,770	38,512	44,265	46,164	40,562
Coke	3,010	2,042	2,612	2,802	2,698	2,367
Indirect Energy Consumption – Electricity (TJ)	221	505	483	518	315	172
Total Energy Consumption (TJ)	76,653	67,034	90,796	102,156	105,851	91,924
Energy Consumption per Refined Crude Oil (GJ/Tons)	3.2	3.34	3.29	3.60	3.71	3.75
Energy Intensity Value	119.1	107.6	102.3	103.4	102.2	99.1
Number of Energy Efficiency Projects	36	22	21	18	15	21
Saving in Energy Consumption (TJ)	978	1,772	1,031	1,054	830	3,620
Reduction of Costs Through Energy Efficiency (million USD)	-	21.8	9.6	9.1	4.9	36.0
Reduction in GHG Emissions Through Energy Efficiency Projects (Ton CO ₂ e)	106,870	126,442	71,744	77,666	45,945	243,666
Total Water Withdrawal (million m³)	24.6	17.8	25.7	31.2	31.4	29.9
Underground	0.8	0	0	0	0	0
Surface	23.8	17.2	19	16.3	14.4	17.2
Municipal	0	0.5	1	1.2	1.2	1.1
Other (Treated waste water from Körfez Municipality)	0	0.1	5.7	13.7	15.7	18.2
Changes in Water Consumption (%)	9.4	-6.3	44	21	0.6	-4.8
Water Consumption per Refined Crude Oil (m³/Tons)	1.1	0.9	0.7	0.6	0.5	0.7
Volume of Water Recycled (million m³)	12.0	12.0	17.2	20.0	25.7	20.8
Percentage of Water Recycled in Total Water Consumption (%)	33.7	40.3	40.1	39.1	45.0	41.0
Total Wastewater Discharge (million m³)	9.9	10.2	11.3	17,1	14,9	14,3
Total Amount of Solid Wastes	35,588	112,664	25,538	41,506	31,392	32,646
Hazardous Waste (tons)	29,168	94,974	14,192	30,971	17,811	23,617
Non-Hazardous Waste (tons)	6,420	17,690	11,346	10,534	13,581	9,029
Wastes by Disposal Method						
Recycling (tons)	20,671	39,724	17,812	27,746	22,618	28,934
Disposal (tons)	14,917	72,940	7,726	13,759	8,774	3,712
Solid Waste Recycling Rate (%)	58	35.3	69.7	66.8	72	89
Number of Saplings Planted during Afforestation Activities (units)	114,092	1,460	223	600	400	920
Estimated Reduction in CO ₂ Emissions due to Afforestation Activities (ton CO ₂ e)	44,344	482	75	200	165	380

ENVIRONMENTAL PERFORMANCE	2008	2014	2015	2016	2017	2018
Environmental Investment and Operational Expenditures (million TL)	202	179	201	346	390	150
Environmental Training (personxhours)	-	15,512	17,787	17,331	16,012	10,391
Tüpraş Employees	-	3,302	7,438	4,310	4,010	4,168
Contractors	-	8,385	10,121	13,021	11,971	6,223
Community	-	3,825	228	-	31	-

SOCIAL PERFORMANCE	2008	2014	2015	2016	2017	2018
Total Training (personxhours)	251,121	388,696	234,311	284,878	233,034	384,405
Female	-	31,172	31,140	21,827	35,601	34,968
Male	-	357,524	203,171	263,051	197,434	349,437
Monthly-paid Employees	77,090	92,571	98,314	68,836	103,864	103,164
Hourly-paid Employees	174,031	296,125	135,997	216,042	129,170	281,241
Total Training (per employee)	58	82	49	59	45	70
Female	-	80	79	55	79	70
Male	-	83	46	59	42	71
Monthly-paid Employees	96	89	93	65	91	82
Hourly-paid Employees	49	81	36	57	32	67
Total HSE Training Hours (personxhours)	46,708	94,036	104,091	135,951	141,729	165,038
Tüpraş Employees	-	74,556	63,596	85,609	83,381	87,805
Business Partner Employees	-	19,480	40,495	50,342	58,348	77,233
Accident Frequency Rate (number of incidents x 1,000,000/personxhour)	3.6	1.6	2.5	1.9	2.7	3.2
Accident Severity Rate (lost days x 1,000,000/personxhour)	104	308	315	354	1,132	292
Number of Fatalities	0	2	1	1	1	1
Employee Satisfaction (%)	57	56	50	53	61	57.2
Customer Satisfaction (%)	86.2	83.8	88.8	89	88.2	88.8
Supplier Satisfaction (%)	97.1	92.9	95.8	88.8	86.9	88.1
Contractor Satisfaction (%)	-	82.1	80.4	84.8	78.1	80.6
Donations and Sponsorships (million TL)	13.67	8.9	17.3	24.4	30	40.6
Total Number of Interns	1,485	798	1,009	935	1,063	815
Koç Holding Pension Fund Liabilities (million TL)	4.9	54.9	63.9	74.4	89.0	103.9
Rate of Minimum Wage to Minimum Starting Salary						
Monthly-paid Employees	3.8	4.2	4.1	3.3	3.3	3.2
Hourly-paid Employees	2.6	2.6	2.6	2	2.2	2.2

EMPLOYEE DEMOGRAPHICS		2015	2016	2017	2018
Total Number of Employees		4,780	4,979	5,185	5,458
	Female	395	412	453	500
	Male	4,385	4,567	4,732	4,958
Contractor Employees		605	601	584	630
	Female	176	179	184	198
	Male	429	422	400	432
Employees by Contract Type					
Employees on Permanent Contract		4,778	4,977	5,182	5,454
	Female	395	412	453	498
	Male	4,383	4,565	4,729	4,956
Employees on Fixed-term Contract		2	2	3	4
Employees by Category					
Hourly-paid Employees		3,728	3,899	4,042	4,199
	Female	137	136	136	142
	Male	3,591	3,763	3,906	4,057
Monthly-paid Employees		1,052	1,080	1,143	1,259
	Female	258	276	317	358
	Male	794	804	826	901
Employees by Employment Type					
Full-time		4,780	4,979	5,185	5,455
	Female	395	412	453	498
	Male	4,385	4,567	4,732	4,957
Part-time		0	0	0	3
Employees by Age Groups					
	Under 30	1,305	1,435	1,633	1,784
	Between 30-50	2,857	2,979	3,036	3,201
	Above 50	618	565	516	473

EMPLOYEE DEMOGRAPHICS		2015	2016	2017	2018
Senior Executives		24	27	30	32
	Female	1	1	1	1
	Male	23	26	29	31
Mid-Level Executives		170	159	178	185
	Female	25	22	29	36
	Male	145	137	149	149
Recruitment		274	496	533	587
	Female	27	44	62	86
	Male	247	452	471	501
Employee Leaves		208	297	327	314
	Female	22	27	21	39
	Male	186	270	306	275
Number of Employees Covered by Collective Bargaining Agreements		3,728	3,899	4,042	4,199
Number of Employees on Parental Leave		20	37	20	22
Number of Employees Returned to Work After Parental Leave		14	5	26	19
Number of Employees Benefited from Nursery Service/Received Financial Support		0	0	43	67
Number of Employees Promoted		304	288	411	348
	Female	91	35	63	53
	Male	213	253	348	295
Employees Received Leadership Training		11,941	8,015	27,201	4,943
	Female	9,422	1,594	4,215	861
	Male	2,519	6,421	22,986	4,082
Employees Received Mentorship Service		0	4	5	22
	Female	0	0	1	18
	Male	0	4	4	4
Employees Received Coaching Service		25	16	18	0
	Female	2	5	5	0
	Male	23	11	13	0

GRI CONTENT INDEX



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GRI 102: General Disclosure 2016		
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102-2	http://www.tupras.com.tr/en/products	-
102-3	Contacts (p.73)	-
102-4	Contacts (p.73)	-
102-5	Tüpraş 2018 Annual Report (p.121)	-
102-6	Tüpraş 2018 Annual Report (p.64-69)	-
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102-8	Performance Data (p.68-69)	-
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102-11	Risk Management (p.14), Internal Audit and Control (p.15), Asset Management (p.52), Disaster and Emergency Management (p.54)	-
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For the Materiality Disclosures Service, GRI Services reviewed that the GRI content index is clearly presented and the references for Disclosures 102-40 to 102-49 align with appropriate sections in the body of the report. This services has been conducted on Turkish version of the report.

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GRI 103: Management Approach 2016	103-1 Explanation of the material topic and its Boundary	Sustainability Management (p.16), Environment, Climate and Energy (p.21-22)	-
	103-2 The management approach and its components	Environment, Climate and Energy (p.21-29)	-
	103-3 Evaluation of the management approach	Environment, Climate and Energy (p.21-29)	-
GRI 301:Materials 2016	301-1 Materials used by weight or volume	Tüpraş in Figures (p.5), Performance Data (p.66-67)	-
GRI 302: Energy 2016	302-1 Energy consumption within the organization	Performance Data (p.66-67)	-
	302-3 Energy intensity	Environment, Climate and Energy (p.24-25), Performance Data (p.66-67)	-
	302-4 Reduction of energy consumption	Environment, Climate and Energy (p.24-26), Performance Data (p.66-67)	-
GRI 303: Water 2016	303-1 Water withdrawal by source	Environment, Climate and Energy (p.26-28), Performance Data (p.66-67)	-
	303-2 Water sources signi cantly aaected by withdrawal of water	Environment, Climate and Energy (p.26-28), Performance Data (p.66-67)	-
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GRI 305: Emissions 2016	305-5 Reduction of GHG emissions	Environment, Climate and Energy (p.25), Performance Data (p.66-67)	-
GRI 306: Effluents and Waste 2016	306-1 Water discharge by quality and destination	Performance Data (p.66-67)	-
	306-2 Waste by type and disposal method	Environment, Climate and Energy (p.29), Performance Data (p.66-67)	-
GRI 307: Environmental Compliance 2016	307-1 Non-compliance with environmental laws and regulations	Environment, Climate and Energy (p.22), Performance Data (p.66-67)	-

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	103-2 The management approach and its components	R&D, Innovation and Digital Transformation (p.33-43)	-
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GRI 203: Indirect Economic Impacts 2016	203-1 Infrastructure investments and services supported	R&D, Innovation and Digital Transformation (p.33-43)	-
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GENDER EQUALITY			
GRI 103: Management Approach 2016	103-1 Explanation of the material topic and its Boundary	Sustainability Management (p.16), Talent Management (p.45-47), Community Development ;(p.58)	-
	103-2 The management approach and its components	Kurumsal Yönetim (p.13-14), Talent Management (p.45-47), Community Development ;(p.58)	-
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GRI 401: Employment 2016	401-1 New employee hires and employee turnover	Performance Data (p.68-69)	-
	401-3 Parental leave	Performance Data (p.68-69)	-
GRI 404: Training and Education 2016	404-1 Average hours of training per year per employee	Talent Management (p.50), Performance Data (p.67-69)	-
GRI 405: Diversity and Equal Opportunity 2016	405-1 Diversity of governance bodies and employees	Corporate Governance (p.13-14), Talent Management (p.50), Performance Data (p.68-69)	-
GRI 406: Non-Discrimination 2016	406-1 Incidents of discrimination and corrective actions taken	No such case has been occurred	-
OCCUPATIONAL HEALTH AND SAFETY			
GRI 103: Management Approach 2016	103-1 Explanation of the material topic and its Boundary	Sustainability Management (p.16), Talent Management (p.51-55)	-
	103-2 The management approach and its components	Talent Management (p.51-55)	-
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GRI 403: Occupational Health and Safety 2016	403-1 Workers representation in formal joint management-worker health and safety committees	Talent Management (p.51)	-
	403-2 Types of injury and rates of injury, occupational diseases, lost days, and absenteeism, and number of work-related fatalities	Talent Management (p.53-55), Performance Data (p.65-69)	-

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