ENVIRONMENTAL MANAGEMENT

As part of Reducing Environmental Impact, one of the four principal foundations of its sustainability strategy, ENKA clearly highlights its commitment to protect the environment and reduce environmental impact arising from its activities with its Environmental Management Approach and Policy. 2027 ENKA Sustainability Goals include targets that serve for Reducing Environmental Impact. These goals are categorised under the headings carbon emissions and climate change, water efficiency, renewable energy, the present-day environmental problem of using plastic bottles and the continuity of compliance with environmental policies at ENKA Schools. In setting these goals, global trends, conditions and impacts of subsidiaries on the environment and the feasibility and observability of the goals were taken into consideration.

ENKA İnşaat and its subsidiaries run environmental management and its commitments in compliance with international environmental management systems, formulate their own environmental management systems in line with ISO 14001:2015 Environmental Management System Standards, which are then audited by independent organisations.

ENKA SYSTEMATICALLY IDENTIFIES ALL ENVIRONMENTAL IMPACTS THAT MAY RESULT FROM ITS ACTIVITIES DURING THE COURSE OF ACTIVITIES USING ENVIRONMENTAL IMPACT ASSESSMENTS AND TAKES ADEQUATE MEASURES.

Subcontractors and suppliers working with ENKA are expected to act just as sensitively, so various training and audits are carried out to this end. The environmental approach and performance ENKA expects of its suppliers is clearly expressed in ENKA Supplier Code of Conduct and in procedures governing the selection, assessment and auditing of suppliers. Detailed information on this subject may be found in the chapter Responsible Supply Chain Management in this report.

At ENKA, the Director of Quality, HSE and Integrity, who also leads the Sustainability Department, reports to senior management the outputs of the Management Systems, which includes ISO 9001:2015, ISO 14001:2015 and OHSAS 18001:2007 as components. As part of the Management Systems, all processes are audited, audit results are reported to relevant departments which then undertake the necessary corrective or improvement actions. The effectiveness of the actions run by the relevant departments are followed up. The Corporate HSE Manual, which details ENKA's policies, is distributed to all employees in hard and electronic copies and in trainings. Furthermore, relevant subjects are covered at Sustainability Committee meetings and representatives of ENKA and subsidiaries are informed accordingly.

In every region that they are active in ENKA İnşaat and its subsidiaries establish departments that are responsible for managing environmental impacts and employ environmental engineers and experts. Environmental indicators are regularly reported and assessed.

When undertaking the works in countries where national standards are lower than the requirements of the ENKA Environmental Management System, ENKA aims to establish Environmental Management Systems that go beyond the national standards, meet its own target and are exemplary.

To guarantee this output, corporate and project HSE departments continually audit the relevant activities and identified non-compliance issues are alleviated as soon as possible. The environmental, occupational health and safety performance of all activities, including the results of audits, is reported to the senior management for its assessment with semi-annually management review reports.

The impacts managed during ENKA's activities are the following environmental impacts: consumption of natural resources in activities, impact on the soil, impact on water sources, and the greenhouse gas emissions , soil erosion, impact on the flora and the fauna, impact on endangered species, impacts arising from waste, environmental impacts of dust, noise and vibration, and impacts arising from emergencies. ENKA İnşaat's Environmental Management System promises, whenever possible, to eliminate these impacts at the source. In cases when this is not possible, offsetting, isolation or the implementation of a feasible engineering measures are required. ENKA never begins activities without an environmental impact assessment and the provision of suitable measures. Various activities are undertaken such as training for employees and relevant stakeholders on the measurement of the impacts listed above, their prevention and minimisation. In 2018, ENKA İnşaat provided a total of 31,448 person-hours of environmental training.

ENVIRONMENT TRAININGS PROVIDED IN 2018

31,448 person-hours

Necessary actions are taken as a result of the monitoring of ENKA and its subsidiaries' annual environmental targets and whether they are attained. The compliance of ENKA and its subsidiaries with their environmental targets for 2018 is shown in the table at the end of this chapter.

The policy banning the use of plastic bottles throughout ENKA Group has been strictly adhered to and full compliance has been ensured for waste management, paper use and the use of purified drinking water at ENKA Schools to reduce environmental impacts.

In 2018, ENKA faced no monetary fines or other measures due to non-compliance with environmental laws and regulations.

WATER MANAGEMENT

Aware that water is the most important natural resource and the most basic need for living beings, ENKA manages water with a careful, responsible, effective and efficient approach. Opportunities for access to water vary over the many ENKA projects in different parts of the world and therefore water management requires different solutions that are suitable for the regional and operational conditions. In order to raise the awareness of employees, regular training sessions are held at all ENKA Group companies and information of water management is provided.

While ENKA İnşaat projects use groundwater and surface water resources, subsidiaries ENKA TC and Çimtaş use municipal water supplies which are drawn from surface water resources. ENKA power plant in İzmir uses groundwater as well as sea water for cooling purposes.

In projects taking place abroad, especially in Africa and the Middle East where access to clean water is limited, work and living areas are supplied with transported drinking water and water for other use from different sources and in some regions drinking water is procured through the use of advanced water treatment techniques such as reverse osmosis. As the transport of water brings extra risks and increases environmental impacts, clean water wells are sometimes dug at suitable locations with the necessary permission from the authorities. Water that is not of sufficient quality goes through suitable treatment processes before use.

At ENKA projects, the highest water consumption takes place due to watering activities to prevent dust, the manufacturing of materials such as cement and asphalt and domestic use of water at project sites.

An Environmental Impact Assessment (EIA) is undertaken before the beginning of activities on all ENKA projects and the use of water sources that are of adequate quality and capacity is preferred.

THE SITUATION OF WATER SOURCES, WATER STRESS, DRINKING WATER AND WASTEWATER QUALITY ARE INSPECTED IN ALL OPERATIONS, FIRST AT THE ONSET AND THEN AT REGULAR INTERVALS, AND IMPROVEMENT ACTIONS ARE TAKEN FOR IDENTIFIED RISKS. IN ADDITION, ENKA UNDERTAKES CONTINUOUS RESEARCH ON REDUCING WATER CONSUMPTION AND USES SUITABLE INFRASTRUCTURE SYSTEMS WITH HIGH-EFFICIENCY EQUIPMENT TO MINIMISE WATER LOSS.

If the project requires traversing a water source in the working area, such as a river or irrigation channel, the continuity of water flow is ensured with the fitting of piping of sufficient diameter and necessary fillers at the point of traversal to protect the flow bed and water quality of the source. ENKA Power requires significant amounts of water due to its energy generation activities. For the cooling system at the power plant in İzmir, the principle of protecting bio-diversity and not harming living beings in the Gulf of İzmir is observed, water is drawn in a controlled manner and with all necessary measures in place. Groundwater use at Adapazarı is carried out at a level lower than that allowed, following the principle of protecting the watershed. All water draws are controlled by meters, consumption is recorded and reported transparently.

Discharge locations for wastewater also vary greatly across ENKA projects. As water discharge standards at ENKA, the legal requirements of the country of activity and the contract requirements are taken as reference to establish the strictest standards that must be adhered to. If sanitation network infrastructure is present in the area, wastewater is discharged in to the sanitation network in keeping with ENKA procedures and applicable legislation. In locations where there is no sanitation network infrastructure, treatment systems are established to discharge wastewater at acceptable quality. Samples taken from procured and discharged water are regularly tested at accredited laboratories. Furthermore, sector specific IFC standards are followed depending on the project's scope.

Treated water may be reused to prevent dust, following cement casting or for the watering of green areas depending on the type of activity. Reuse leads to less water being drawn from sources.

With the treatment and reuse of water used in the hydro-testing work at the Compressor Station-2 field in the South Caucasia Pipeline Preliminary Work and Facilities project, savings of 72% on clean water were ensured.

Wastewater analyses primarily establish pH, BOD, COD, nitrogen, phosphorus, TSS and coliform values. Before discharge into an external receiving environment, care is taken to ensure that discharged wastewater quality is in compliance with the maximum allowed values and water that is not in compliance with standards is not discharged. Furthermore, in order to understand potential impacts on the environment, quality of the receiving medium which is subject to discharge is regularly measured and monitored.

ENKA's subsidiaries also undertake work according to their field of activity to protect water resources. For example, ENKA TC uses grease traps for tenants in the restaurant areas of its buildings and ensures their regular cleaning and maintenance is carried out by licensed waste disposal firms. Cimtas Pipe uses a rainwater toilet flushing system to reduce water consumption. Çimtaş Precision Machining commissioned a rain water collection system in 2018 to meet its flushing and garden watering needs using rainwater. Employees at ENKA and its subsidiaries are given training on water efficiency and saving.

Ensuring that Çimtaş's domestic water consumption is kept under 15 litres/person-hours and two projects being undertaken every year at ENKA Group to reduce its blue water footprint were featured among the ENKA Sustainability Goals established in 2018. In establishing these goals, operations carried out at locations with water stress and those with easy access to water were kept in mind, as well as the impacts and applicability of targets.

In 2018, ENKA's total water consumption was 1,514,533 m^3. There was a reduction of 8% in water consumption compared to 2017 and the blue water footprint was measured as 1,514,158 m^3.

In addition, ENKA Power's İzmir power plant makes use of sea water for cooling. In 2018 24,838,933 m^3 of seawater was drawn from the Bay of Nemrut and 17,742,100 m^3 was discharged to the same location.

As a result of improvement work undertaken at ENKA Power's power plants, water consumption at the plants fell by approximately 70,000 m^3 (11%) from 2017 to 2018.

AMOUNT OF WATER WITHDRAWAL BY SOURCE

As part of works on the water footprint that began systematically in 2017 the total amount of municipal water drawn decreased to 979,580 m^3 and the amount of groundwater drawn decreased to 534,578 m^3 in 2018. In addition, the subsidiaries Cimtas Pipe and ENKA TC have been collecting rainwater for use and reducing their consumption of freshwater.

As part of ENKA TC's sustainability efforts, the Rainwater Recycling Project began at the Kapitoly Outlet Shopping Centre in St. Petersburg in June 2018 and rainwater from a roof area of 1,400 m^2 was collected in tanks and connected to supply a total of eight visitor restrooms. 95 tonnes of rainwater was used to flush toilets over a six-month period with this undertaking and thanks to this project, 17% of the 6-month water consumption was provided from rainwater, saving the natural water resources. ENKA TC will continue to develop rainwater collection systems at its existing and new shopping centre projects in coming periods.

The amount of water ENKA drew in 2018 by source is shown in the table below:

AMOUNT OF FRESH WATER DRAWN BY SOURCE

Company/Facility/Project		Municipal Water (m^3)	Surface water (Lake, river etc.) (m^3)	Ground-water (m^3)	Rain-water (m^3)	Waste-water discharge (m^3)	Discharge point
Cimtas Pipe		35,811	X	X	300	35,811	Municipal Wastewater Treatment Plant
Çimtaş Steel		X	X	28,173	X	6,852	The Sea of Marmara
ENKA Power Power Plants	Adapazarı - Gebze	X	X	350,747	X	350,747	Municipal Wastewater Treatment Plant
	İzmir	X	X	33,469	X	7,296	Sea
ENKA Pazarlama		7,111	X	X	X	7,111	Municipal Wastewater Treatment Plant
ENKA Schools Kocaeli		7,587	X	X	X	7,587	Municipal Wastewater Treatment Plant
ENKA Foundation		53,114	X	X	X	48,062	Municipal Wastewater Treatment Plant
City Center Investment (CCI)		192,451	X	X	X	192,451	Municipal Wastewater Treatment Plant
ENKA TC		531,655	X	X	95	466,708	Municipal Wastewater Treatment Plant
MKH		66,540	X	X	X	66,540	Municipal Wastewater Treatment Plant
OMKH		53,154	X	X	X	13,419	Municipal Wastewater Treatment Plant
ENKA Headquarters		11,352	X	X	X	11,352	Municipal Wastewater Treatment Plant
SCPX Project	SCPX-CSG1	X	X	33,071	X	12,880	Irrigation channel (after treatment)
	SCPX-CSG2	X	X	89,118	X	54,757	River (after treatment)
TAIF Business Centre Project		20,805	X	X	X	20,805	Municipal Wastewater Treatment Plant
TOTAL (m^3)		**979,580**	**-**	**534,578**	**395**	**1,302,378**	

Calculations based on The Water Footprint Assessment Manual: Setting the Global Standard.

IDENTIFYING WATER SHORTAGE AND WATER POLLUTION RISKS

As part of work began in 2017 to identify the water footprint and water risks, the coordinates of all included facilities were matched with maps of water shortage and water pollution and water resources that could be noticeably affected from water draws were identified.

Water shortage risks for facilities that increase with the severity of water shortage are defined as increasing regional water issues in the short and long run, fall in groundwater levels and the consequent rise in water prices.

ENKA's companies and facilities in Turkey are located in regions with high water shortage levels. The main findings of the studies undertaken as part of work on reducing the blue water footprint to minimise water shortage risks for ENKA facilities are:

- Facilities included in the study use significant amounts of underground water. The continuous monitoring of underground water levels is important for continued procurement from these resources.
- Nitrogen and phosphorus water pollution levels at facility locations show that locations in Turkey and Russia face high water pollution risks. In these regions, pollution due to nitrification is a significant issue and points to an increasing trend of nitrogen pollution affecting underground water sources in the long/medium run and therefore a fall in the capacity of clean water resources.

WATER SHORTAGE AND WATER POLLUTION RISK LEVELS FOR FACILITY LOCATIONS

Company/Facility/ Project	District/City	Country	Water shortage level	Nitrogen pollution level	Phosphorus pollution level	Water shortage risk	Water pollution risk
Cimtas Pipe	Bursa	Turkey	High	Medium	Medium	+++	++
Çimtaş Steel	Bursa	Turkey	High	Medium	Medium	+++	++
Adapazarı	Adapazarı	Turkey	High	High	High	+++	+++
Gebze	Gebze	Turkey	High	High	High	+++	+++
İzmir	İzmir	Turkey	High	High	High	+++	+++
ENKA Pazarlama	İstanbul	Turkey	High	High	Medium	+++	+++
ENKA Schools Kocaeli	Kocaeli	Turkey	High	High	Medium	+++	+++
ENKA Foundation	İstanbul	Turkey	High	High	Medium	+++	+++
City Center Investment (CCI)	Moscow	Russia	Medium	High	Medium	++	+++
ENKA TC	Moscow	Russia	Medium	Low	Low	++	+
MKH	Moscow	Russia	Medium	High	Medium	++	+++
ENKA Headquarters	İstanbul	Turkey	High	High	Medium	+++	+++
SCPX-CSG1	Meskhetian	Georgia	Very low	Low	Low	+	+
SCPX-CSG2	Meskhetian	Georgia	Very low	Low	Low	+	+
TAIF Business Centre Project	Kazan	Russia	Medium	High	Medium	+++	+++
OMKH	Moscow	Russia	Medium	High	Medium	++	+++

STAKEHOLDER ASPECT

"WORKING AT ENKA MEANS TRAINING OPPORTUNITIES, SIGNIFICANCE ATTACHED TO PROFESSIONAL DEVELOPMENT AND AN ENVIRONMENT TO IMPROVE YOURSELF."

I've been working at ENKA since 2010. I worked as a HSE engineer at the Kosovo Motorway Project Route 7, Ufa Prenatal Hospital Construction in Russian Federation and most recently the SCPX Project CSG1 field in Georgia. Since 2017, I've been working at the ENKA İnşaat Corporate HSE department.

ENKA, which I joined as a newly graduated engineer, has not just been the company I worked at, but a second family that has allowed me to constantly develop professionally, ethically and in terms of worldview. ENKA is always open to new and creative ideas. It has always supported employees providing value added for the company and has offered constant incentive. ENKA is like a big home where the personal development of employees is also cherished. With a management style that combines care with respect, where higher-ups can be considered as elder brothers, it is a place where you may benefit from the experiences of all and learn so much about the world, engineering and the world of business. Being a part of ENKA family means training opportunities, significance attached to professional development and an environment to improve yourself.

While the work pace may appear to be demanding, having to face many challenges, working as a team towards the same aim and overcoming the challenges has given me professional satisfaction as an engineer and personal happiness. I think I owe it to ENKA, the ability to communicate and understand, which I developed by working with people from many nationalities.

I think for an engineer ENKA is one of the best places to work at. Knowing that all you do is observed closely, that you will be appreciated for doing the right thing and will be given opportunities to learn from your mistakes, makes working at ENKA both encouraging and exciting.

I'm proud and happy to be a member of such a large and beautiful family.

ENKA makes the utmost effort in environmental management. As an environmental engineer, I know how challenging environmental management can get, especially in construction work. I can wholeheartedly say that environmental management at ENKA projects is at the highest level given present circumstances and resources. Although practices may differ by various countries' environmental management legislation and the means available to countries, ENKA follows its own standards within the local circumstances and carries out the highest level environmental management. ENKA's HSE policy is a clear indicator of how important environmental protection is to ENKA. ENKA's environmental management system is regularly audited every year. In all of our operations, we work with professional environmental engineers, establish environmental management and back-up plans and work diligently. All of our employees are given regular training for awareness raising and on our environmental management system. Once a year senior management reviews our environmental performance and decides on measures for the coming year for continual improvement. Our environmental management has received many international awards. The Green Corridor prize given by the International Road Federation to the Kosovo Motorway Project in 2016 is just one example. Improvements at our subsidiaries for increasing energy efficiency, reducing carbon emissions and water consumption allow for continual improvements to our environmental management.

Cemil Can Aytimur
ENKA Corporate Health, Safety and Environment Lead Engineer