

LAND REHABILITATION

TurkStream Receiving
Terminal Project



TEKFEN CONSTRUCTION



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Tekfen Construction, a leading corporation in challenging fields of contracting and a studious environmentalist, traces its roots to an engineering consulting company established in 1956 in Turkey.

ABOUT TEKFEN CONSTRUCTION

Tekfen Construction, an affiliate of Tekfen Holding, is a respectable name in the international contracting arena with over 350 projects successfully completed in Turkey, Middle East, North Africa, Caucasia & Central Asia, and East & Central Europe. Its activities range from heavy civil works to refineries and petrochemical plants; from satellite towns to large industrial processing plants; from pipelines and marine structures to power plants, electrical and communication works.

With its sister companies in engineering and steel manufacturing as well as strategic partnerships, Tekfen is a dynamic and sought-after EPC contractor, specialising in oil & gas, pipeline, infrastructure and civil works.

As an ISO 9001, ISO 14001 and OHSAS 18001 certified (in the process of ISO 45001 certification) company, Tekfen is dedicated to the highest quality standards and aiming excellence through «continuous improvement».

Tekfen Construction is a large family of 18,000 employees, including subcontractor's personnel.



TURKSTREAM RECEIVING TERMINAL PROJECT

TurkStream Project, owned by South Stream Transport B.V., whose budget is 11.4 billion Pounds, directly connects the large gas reserves in Russia to the Turkish and European gas transportation networks.

The pipeline enters the water near Anapa on the Russian coast, after crossing through Black Sea, comes ashore on the Turkish coast in the Thrace region, near the town of Kiyıköy.

Activities which pose high risk such as; working at height, hot works, confined space entry, lifting, excavation, electrical works etc. have been carried out during the project.

During the initial pre-construction survey and mobilization phase of the Project, TEKFEN Management paid extra effort to identify the measures to eliminate or minimize the possible damages by the activities and adding value to environment considering the biodiversity, natural sources and geographical structure of the region.



TURKSTREAM RECEIVING TERMINAL PROJECT



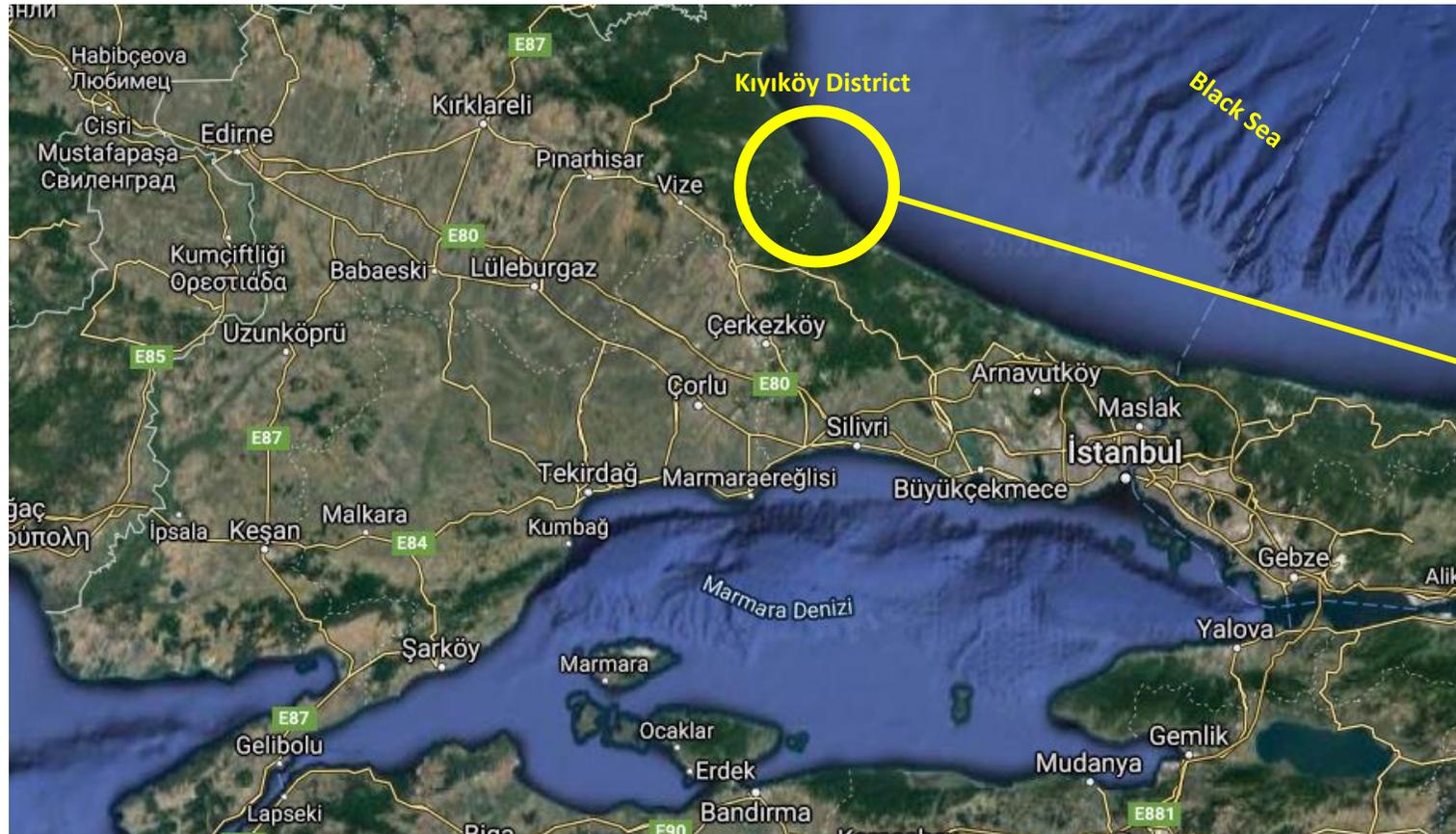
Project started in November 2017 and completed in March 2020 with the scope of 1.1 million m³ earthworks, 100,000 WDI (2,500 tonnes) piping, 920 km cable works and 4 km 32" pipeline from offshore to the terminal.

During its peak time, more than 2,500 employees were involved in the project. Taking into account the personnel circulation throughout the project execution period, more than 4,000 employees took part in various project-specific activities.

PROJECT LOCATION & ENVIRONMENTAL APPROACH

Project location is in the boundaries of Kiyıköy district. Kiyıköy has a vegetation cover with wide forest lands and natural habitats, with the advantage of Black Sea climate.

During the initial pre-construction survey and mobilization phase of the project, the aim was to eliminate / minimize the damage caused by the activities and adding value to environment considering the biodiversity, natural sources and geographical structure of the region.



ENVIRONMENTAL APPROACH / LAND REHABILITATION

Tekfen Construction is aware of the most important measure of success in a business is not only financial success and timing, but also creating value to all stakeholders involved such as employees, local communities and environment while performing its activities.

Therefore, a detailed value added research executed by the management in the regions where the projects are carried out.

One of these projects is the **“Rehabilitation of an Old Quarry Area”**, which was carried out in the TurkStream Receiving Terminal Project.

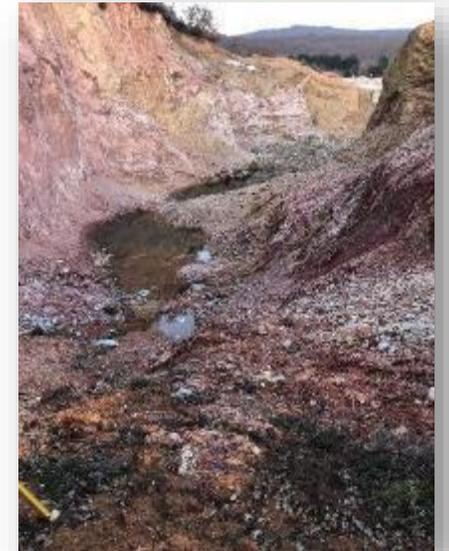


PROCESS OF THE LAND REHABILITATION

During the initial phase of the TurkStream Project, an old quarry was noticed by the Project Environmental Team.

This area was formerly used as a quarry and then it was abandoned without rehabilitation. The surrounding area is used for livestock activities and recreation purposes by the local community. Cliffs and openings in the area posed a high risk to the safety of people and animals. As it was informed by the local mukhtars, there were accidents recorded during livestock activities before the rehabilitation in the area, due to animal falls from the cliff. At the same time, families were worried about their children playing at the woodland next to the quarry. Wastes in the area and destroyed nature also caused a visual landscape disturbance.

Project Environmental Team developed an action plan, funded 100% by TEKFEN Project Management to clean the area from wastes and reinstate the quarry to its former state by using the soil excavated from the project area.



TIMELINE OF CHANGES

The older satellite images of the quarry showed that the area had been abandoned without reinstatement application for many years. In 2016, vegetation cover had begun to re-form. Afterwards, it is understood that the vegetation was destroyed again due to unauthorized soil removal and waste storage.



LOCATION AND DEVELOPMENT STUDIES

Considering that soil formation takes long time and soil is a nest for a large number of living organisms, reuse of the excess soil made remarkable gain not only for the local community but also for the nature.

Approx. 35 km

Although excess excavation material/soil was planned to be transferred to an authorized landfill at around 200 km distance for disposal as inert waste, rehabilitation of the quarry around 35 km away was considered as an opportunity to reuse and prevent the lose fertile soil instead.

Hence, the soil was not categorized as waste and the transportation to long distances which could cause degradation of soil and high carbon emission was avoided.

STAKEHOLDER ENGAGEMENT



After obtaining necessary permits from client and local authorities, the action plan was introduced to the relevant institutions, local community, schools and non-governmental organizations. The action plan aroused great interest at all stakeholders as they involved in the process and their opinion were duly considered.

PLANING OF LAND REHABILITATION

Tekfen Construction provided all the necessary resources for the implementation of the rehabilitation plan. Land levelling activities and soil transfer had been performed for 22,000 m² area. Approximately 100,000 m³ soil transferred and used for rehabilitation purposes. Project budget for soil transportation and rehabilitation was 1,300,000 \$ including machine & equipment and manhour costs.



ACHIEVEMENTS

BEFORE THE REHABILITATION



AFTER THE REHABILITATION



TREE PLANTING FESTIVAL



When the land levelling and rehabilitation were completed, as per the local community requested, 3,000 trees were planted during the festival organized at the same area.



MAINTENANCE OF THE LAND

Considering the natural conditions of the region, working hours were limited and the activities were carried out during the day-time, to prevent possible effects on the wildlife in the area and on the access roads of the transportation route.

All the activities had been completed between August and November 2019. After that, preservation and irrigation of the area was carried out by Project Teams.

In addition, state institutions and organizations, including the mukhtars, were educated in order to ensure that the area will be correctly preserved after the Project completion.

As of March 2020 TEKFEN Construction Corporate Environmental Team has been following the preservation activities by local mukhtars to ensure the sustainability.



BENEFITS OF THE LAND REHABILITATION

Related institutions were contacted for the rehabilitation of the land, and necessary applications were made for the use of excess soil due to project land levelling activities for rehabilitation.



- ✓ The soil was not considered as waste and it was reused for rehabilitation and landscaping purposes. In this way thousands of cubic meters of waste was reduced and soil degradation was also prevented.

- ✓ The transfer and disposal costs of excess soil were decreased.

- ✓ As transportation route was shortened (35 km instead of 200 km), soil erosion and loss due to wind were reduced by avoiding long-term storage of excess soil at site.



- ✓ In addition to that, Carbon emission was reduced with shorter transportation route. As the total Carbon emission of TurkStream Receiving Terminal Project was 4,665 tCO₂e for all diesel equipment, 1,322 tCO₂e (22% of total) of carbon emission was avoided through reducing the route by 2.2 millions km.



- ✓ Although rehabilitation of destroyed lands require initial investment, it has extremely positive effects in terms of long-term social cost benefits.

ADDITIONAL BENEFITS

- ✓ Land levelling and reclamation added value to the visual landscape of the region.
- ✓ Land levelling activity reduced the risks for people and animals (slips and falls, traffic accidents etc.). Eventually, the area has become suitable for livestock activities.
- ✓ Health and safety risks on the main roads were reduced/eliminated as long-distance truck traffic avoided.
- ✓ The area and the surrounding woodland can be used for recreation by local community. The previous worry for children and their families has been eliminated.





THANK YOU