

**TEİAŞ**

**TURKISH ELECTRICITY TRANSMISSION  
CORPORATION  
DIRECTORATE GENERAL**



**380 kV ÇİFTLİKKÖY GIS SS  
(GAS INSULATED SYSTEM SUBSTATION)  
ENVIRONMENTAL and SOCIAL MANAGEMENT  
PLAN**

**PROVINCE OF YALOVA, ÇİFTLİKKÖY DISTRICT**

**ANKARA – DECEMBER 2019**

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<b>Name of Project</b>	380 kV ÇİFTLİKKÖY GIS SS (GAS INSULATED SYSTEM SUBSTATION) ENVIRONMENTAL and SOCIAL MANAGEMENT PLAN
<b>Address of Site Selected for the Project</b>	Province of Yalova, Çiftlikköy District, İlyasköy Neighborhood

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## EXECUTIVE SUMMARY

Financed through WB loans, the construction of the 380 kV Çiftlikköy GIS SS, which shall become a part of the National Interconnected system, is planned in İlyasköy neighborhood located in Çiftlikköy district in the province of Yalova (lot 149 parcels 1, 3, 4, 5, 22, 49, 50, 51, 52, 53, 54, 55, 58).

Of the immovables within the project site, 12 are government parcels and 1 private. Negotiations for a mutual understanding were carried out with the private owner on the date of 03/04/2018, yet to no avail. A Price Determination and Registration case has been lodged with the court in line with the provisions of Article 10 of the Expropriation Law as well as the respective amount of TRY 258,237.00 has been deposited in the owner's account as per the interim judgement of the court. The court process is still ongoing. Free allocation of government property has been carried out at the Local Revenue Administration in Yalova.

154 kV Karamürsel Aslanbey-Çiftlikköy GIS SS Energy Transmission Line (7,350 km), 380 kV Bandırma NGCCP-Gemlik Energy Transmission Line-Çiftlikköy GIS SS (11,962 km), 380 kV Çiftlikköy GIS SS-Gemlik İzmit 380 Energy Transmission Line (10,335 km), 380 kV Çiftlikköy GIS SS-Hersek Interface Point Energy Transmission Line (10,953 km) projects will be connected with 380 kV Çiftlikköy GIS SS project.

A flora/fauna survey of the project site has been carried out by Mr. Tolga Çetinkaya (Biologist) on 31.07.2019.

Existing roads will be used within the scope of the project being discussed and no service roads shall be constructed for the project. Moreover, borrow pits are not required in TEIAS projects with ready-mixed concrete procured from the market being used and no situation which requires the allocation of additional land arises.

A great deal of workers to be employed during the construction of the substation, especially those who are unqualified, is met from the local community. Moreover, apart from large-scale items, the material to be utilized in the construction of the substation (hardware, concrete, sand, gravel, small hand tools, stone chips etc.) is met from

establishments operated by the local community and likewise, the catering needs of the workers are also met from establishments operated by the locals. The construction of the project will positively impact both the regional economy and the Turkish economy as a whole.

In Turkey, within the scope of environmental management the provisions of the "Regulation on Environmental Impact Assessment" which came into force by being published in the Official Gazette Issue 29186 dated 25 November 2014 are taken as basis. The 380 kV Çiftlikköy GIS Substation Project is considered to be outside of the scope of this regulation.

Çiftlikköy 318 GISS SS has been planned around Çiftlikköy in the province of Yalova in view to (i) ensure uninterrupted and secure transfer of electrical power to be generated at both existing and prospective WPPs and TPPs in South Marmara and Western Anatolia regions to consumers in Kocaeli and the Anatolian Bank (İstanbul), (ii) to upscale the transmission system in Bursa in tandem with the soaring demand as a result of the overall consumer demand in the area as well as the demand of OIZs that are already running on 70% of the region's auto-transformer capacity, (iii) to supply existing 154 kV lines as well as secure additional resources as required.

Once this SS is introduced to the system, it shall enable linking of power generated in both existing and prospective WPPs and TPPs in South Marmara and Western Anatolia regions, which shall relieve Bursa East, Bursa Natural GA and Bursa OIZ auto-transformers.

The environmental and social issues on construction stage are cultural and historical assets, dust-particle matter, noise, wastewaters originating from campsites, excavation, solid and hazardous waste originating from the construction site, wastes to originate from the vehicle park, health and safety, traffic and pedestrian safety, landscaping. Noise, EMF, health and safety, fire risk, SF6 gas, transformer oils, solid and hazardous wastes to be generated during operation stage (battery, waste oil) are the environmental and social issues on operation stage. All relevant and legal protective and preventive measures will be taken.

A great deal of workers to be employed during the construction of the substation, especially those who are unqualified, is met from the local community. Moreover, apart

from large-scale items, the material to be utilized in the construction of the substation (hardware, concrete, sand, gravel, small hand tools, stone chips etc.) is met from establishments operated by the local community and likewise, the catering needs of the workers are also met from establishments operated by the locals.

The personnel to work during the land preparation and construction stages of the project will meet their needs at existing structures located within the nearest settlements if applicable. Therefore, the drinking water which the workers will need will be brought to the construction site in returnable carboys and plastic bottles and water to be used for other purposes shall be provided from the existing facilities (Municipal water supply). No ground and surface water shall be used as service water within the scope of the project.

Establishment of substations and transmission lines are categorized as high risk according to the national OHS Law. In this respect, TEIAS has a department managing OHS issues and also capacity in the Regional Offices. TEIAS also has a detailed procedure on OHS including risk assessment procedures, training procedures, site-work procedures, procedures on working with chemicals, working at heights, OHS audit procedures, OHS incidents etc.

Land Acquisition and Livelihood Impacts: The Project will have involuntary land take impacts on private users. Therefore, as per World Bank's Operational Policy 4.12, a separate ex-post social audit has been prepared. On the Project site, 12 units of the real estate is in possession of state treasury and 1 unit of it is in possession of private property. Agricultural activities by informal users are ongoing on the chosen real estates. Decision of public interest has been obtained by the approval of the Minister. The expropriation process is commenced once the public interest decision is obtained. Reconciliation negotiations have been held with the private property owner of the parcel number 52. However, it could not be come to an agreement. Compensation payment has been paid to the private property owner with interlocutory judgement during the process of lawsuit. The lawsuit is ongoing at court of appeal.

A detailed assessment of socio-economic conditions of impacted informal users was carried out by TEIAS regional office in order to maintain whether there were any vulnerable people among the affected users. An additional field investigation was

performed on 26.04.2019 in order to identify and evaluate physical and economic losses of the informal users utilizing 12 parcels which are Treasury State land. Since the compensation for informal users were not provided under the national law but due to World Bank's OP 4.12 policy on involuntary resettlement, all 29 users affected from the expropriation for the Ciftlikkoy substation project were informed on about the compensation amounts of their economic losses. TEIAS continues to work on the necessary budget allocation regarding the economic losses calculated as explained above and the amount that all users will receive for the losses they have suffered. It was recorded that the affected immovables are not main source of living of the users. It has been recorded that they have other real estates as a result of external researches. The activities will be able to continue in the remaining parts of the real estate after partial expropriation.

Even though the Turkish Legislation does not have sufficient provisions with regard to public consultation and information on land acquisition, for the subject project, TEIAS has provided the necessary environmental and social information to the headmen with a view to informing the affected groups and a Public Information Brochure and draft ESMP have been prepared and submitted to Recep Gülçen, the Headman of İlyasköy neighborhood, for review, objections and suggestions, on 15.01.2019 and this process was made public on the official website of TEIAS on 21.01.2019 (<http://www.teias.gov.tr>).

During the process of informing the public, the local community under the lead of the headman applied to the Regional Directorate and Çiftlikköy District Governor's Office on 21.01.2019 with a petition for the relocation of the planned substation to another unused place. The District Governor's Office forwarded the relevant petition to TEIAS Directorate General on 25.01.2019. The headman was contacted during this process and a briefing meeting on the project was held on 08.02.2019 with public participation.

The environmental and social activities supported by a grievance redress mechanism established by TEIAS are notified to the affected individuals prior to the project. The system allows for proper recording of the grievances, concerns and demands of affected individuals and the timely consideration thereof.

Contact numbers of both our establishment and the authorized officers and the address of our establishment was given to headman's offices. The people were informed that for any



kind of information, the Expropriation Head Engineer and officers of the expropriation department can be reached at 0 224 243 13 30.

The Environmental and Social Management Plan Implementation report prepared/made to be prepared by the Contractor on a quarterly basis shall be submitted to the relevant Regional Directorate. The responsible person at the relevant Regional Directorate shall review the validity of the report on site and then the report shall be submitted to Directorate General along with comments from the Regional Directorate. The report as examined by the Directorate General shall then be submitted to the World Bank upon being approved. Revisions may be requested from the contractor during the examination of the reports.

## **1.PROJECT DESCRIPTION**

### **1.1 General Description of the Project**

Financed through WB loans, the construction of the 380 kV Çiftlikköy GIS SS, which shall become a part of the National Interconnected system, is planned in İlyasköy neighborhood located in Çiftlikköy district in the province of Yalova (lot 149 parcels 1, 3, 4, 5, 22, 49, 50, 51, 52, 53, 54, 55, 58).

In Turkey, within the scope of environmental management the provisions of the "Regulation on Environmental Impact Assessment" which came into force by being published in the Official Gazette Issue 29186 dated 25 November 2014 are taken as basis. The 380 kV Çiftlikköy GIS Substation Project is considered to be outside of the scope of this regulation.

### **1.2 Scope of Project**

Çiftlikköy 318 GISS SS has been planned around Çiftlikköy in the province of Yalova in view to (i) ensure uninterrupted and secure transfer of electrical power to be generated at both existing and prospective WPPs and TPPs in South Marmara and Western Anatolia regions to consumers in Kocaeli and the Anatolian Bank (İstanbul), (ii) to upscale the transmission system in Bursa in tandem with the soaring demand as a result of the overall consumer demand in the area as well as the demand of OIZs that are already running on 70% of the region's auto-transformer capacity, (iii) to supply existing 154 kV lines as well as secure additional resources as required.

Once this SS is introduced to the system, it shall enable linking of power generated in both existing and prospective WPPs and TPPs in South Marmara and Western Anatolia regions, which shall relieve Bursa East, Bursa Natural GA and Bursa OIZ auto-transformers.

### 1.3 Project Area

Of the immovables within the project site, 12 are government parcels and 1 private. Negotiations for a mutual understanding were carried out with the private owner on the date of 03/04/2018, yet to no avail. A Price Determination and Registration case has been lodged with the court in line with the provisions of Article 10 of the Expropriation Law as well as the respective amount of TRY 258,237.00 has been deposited in the owner's account as per the interim judgement of the court. The court process is still ongoing. Free allocation of government property has been carried out at the Local Revenue Administration in Yalova.

In the layout plan imposed upon the dimensional drawings for the 380 kV Çiftlikköy GIS SS, which provides the basis of expropriation an area of 67.134 m<sup>2</sup> has been identified whereby expropriation work is ongoing regarding the transfer of the ownership of a total of 85.000 m<sup>2</sup> including building gauges based on the zoning plan.

Construction of energy transmission facilities necessary for activities pertaining to the task of energy transmission is carried out by constructing transmission lines and substations throughout the country. It is aimed that the connection of such facilities to the interconnected system will be performed in the planned duration without causing delays and obligatory power cuts. By paying regard to the conditions of land acquisition, while selecting the lands on which the facilities will be constructed, the most economical and harmless areas are considered in order not to cause any issues with the facility's connection to the national interconnected system and the security system Project alternatives are always taken into account; however, in some cases alternatives may be limited to a minimum due to the geographical structure and design and engineering requirements. For instance, it may not always be possible to find alternatives which minimize the impact on unofficial users due to gradient issues, as was the case for Çiftlikköy substation project .

Existing roads will be used within the scope of the project being discussed and no service roads shall be constructed for the project. Moreover, borrow pits are not required in TEIAS projects with ready-mixed concrete procured from the market being used and no

situation which requires the allocation of additional land arises. In this project too will the ready-mixed concrete to be procured from the market be used, and since the digging of a borrow pit is out of the question, no additional land allocation will be performed. In addition, no materials shall be procured from illegal pits and it shall be conditional that all legal permits are obtained for procurement of materials, which shall remain under the control of TEIAS.

The site on which the project has been planned is located between the neighborhoods İlyasköy and Ahmediye. Also, the nearest-by residence to the project site is on the border of the project site.



**Figure1** Satellite Image Showing Project Area

154 kV Karamürsel Aslanbey-Çiftlikköy GIS SS Energy Transmission Line (7,350 km), 380 kV Bandırma NGCCP-Gemlik Energy Transmission Line-Çiftlikköy GIS SS (11,962 km), 380 kV Çiftlikköy GIS SS-Gemlik İzmit 380 Energy Transmission Line (10,335 km), 380 kV Çiftlikköy GIS SS-Hersek Interface Point Energy Transmission Line (10,953 km) projects will be connected with 380 kV Çiftlikköy GIS SS project. Satellite images below show the location of the transmission lines and the substation. The EIA not necessary opinions have been granted from the Ministry of Environment and Urbanization for all the aboveground transmission lines. Accordingly, none of the areas are overlapping with any nationally and internationally recognized protection areas.



**Figure 2** Satellite Image Displaying Underground Cables to be Connected to Çiftlikköy GIS SS-1



**Figure 3** Satellite Image Displaying Underground Cables to be Connected to Çiftlikköy GIS SS-2

**380 kV Çiftlikköy GIS SS-Hersek Interface Point ETL**

**380 kV Çiftlikköy GIS SS-Gemlik İzmit 380 ETL**

**154 kV Karamürsel Aslanbey-Çiftlikköy GIS SS ETL**

**380 kV Bandırma NGCCP-Gemlik ETL-Çiftlikköy GIS SS**

## **1.4 Technical Information on the Project**

### **Gas Insulated Switchyards:**

High voltage switchyards form a key ring of the power transmission chain between the electricity generation sources and consumers. Substations can be designed in two different ways. One of these is the continuously used air-insulated substations (AIS) with open switchyard and the other is closed or enclosed substations insulated with the SF<sub>6</sub> gas, which can be installed in both indoor and outdoor areas (GIS).

Air Insulated Substations (AIS) are used commonly where there is no spatial limitation.

Gas Insulated Substations (GIS) are replacing the conventional substations as they require very little space. Gas Insulated Substations can be easily designed and are environmentally-friendly.

GIS offers the possibility to be installed right in the middle of load centers in urban and industrial areas due to its appropriately assembled compact size and design. The use of SF<sub>6</sub> as insulation gas in gas-insulated substations allow for small facility size and significant level of compliance with environmental requirements. Most of the elements used in the facility are assembled at the factory. GIS consists of circuit breaker, disconnectors, current transformer, control and protection equipment, internal locking and tracking and similar elements. The grounded metal casing of GIS not only protects the internal units of GIS from environmental impacts but also the employees from power shocks. GIS can be installed in outdoor spaces, inside and under buildings. The small installation area required for SF<sub>6</sub> gas insulated facility ensures saving from expensive ground preparation and foundation activities. Its advantages also include short installation time and the ability of breakers installed in indoor areas to serve regardless of climatic and weather conditions.

Used all around the world since 1960, SF<sub>6</sub> gas insulated substation technology was initially not deemed necessary in Turkey as the consumption of electrical energy and urban population were not at high levels in the past. It has become inevitable to use this



technology due to safety concerns and limitations about the area of use, given the migration to urban areas during the past two decades, the growth in electricity consumption, and high voltage transmission lines remaining within city centers and industrial areas. The very first gas insulated sub-station in Turkey was commissioned on the date of 23.11.1990 in İstanbul (the 154 kV Topkapı GIS SS). Today, gas-insulated substations have been installed and are in operation in many cities (particularly big cities) of our country.

### **Electromagnetic Field (EMF)**

In order to confirm TEIAS capacity to continue the performance of works in line with international standards, the Electrical and Electronics Engineering Department of Yıldız Technical University was commissioned to carry out electrical and magnetic field measurements at the 380 kV Küçükbakkalköy GIS SS in urban İstanbul.

The report prepared by the Faculty states that based on the results of measurement conducted at 34 points inside and outside the building, electrical field and magnetic field values have been evaluated by taking into consideration the threshold values provided for human health in the technical document titled “International Commission On Non-Ionizing Radiation Protection (ICNIRP) Guidelines for Limiting Exposure to Time-Varying Electric and Magnetic Fields (1 HZ -100 kHz), Health Physics 99 (6):818-836; 2010.”.

As specified in Table-3 and Table-4 in the ICNIRP technical document (see Table-1 and Table-2 below), the threshold values for electrical field and magnetic field strength have been set as 5 kV/m (5000 V/m) and 160 A/m, respectively, for people continuously exposed to it, at an operating frequency of 50 Hz. In terms of occupational exposure, these threshold values have been set as 10 kV/m (10000 V/m) for strength of electrical field and 800 A/m for strength of magnetic field.

**Table1** ICNIRP Technical DocumentTable-3**Table 3.** Reference levels for occupational exposure to time-varying electric and magnetic fields (unperturbed rms values).

Frequency range	E-field strength E (kV m <sup>-1</sup> )	Magnetic field strength H (A m <sup>-1</sup> )	Magnetic flux density B (T)
1 Hz–8 Hz	20	$1.63 \times 10^5/f^2$	$0.2/f^2$
8 Hz–25 Hz	20	$2 \times 10^4/f$	$2.5 \times 10^{-2}/f$
25 Hz–300 Hz	$5 \times 10^2/f$	$8 \times 10^2$	$1 \times 10^{-3}$
300 Hz–3 kHz	$5 \times 10^2/f$	$2.4 \times 10^3/f$	$0.3/f$
3 kHz–10 MHz	$1.7 \times 10^{-1}$	80	$1 \times 10^{-4}$

Notes:

- f in Hz.
- See separate sections below for advice on non sinusoidal and multiple frequency exposure.
- To prevent indirect effects especially in high electric fields see chapter on “Protective measures.”
- In the frequency range above 100 kHz, RF specific reference levels need to be considered additionally.

**Table 2** ICNIRP Technical DocumentTable-4**Table 4.** Reference levels for general public exposure to time-varying electric and magnetic fields (unperturbed rms values).

Frequency range	E-field strength E (kV m <sup>-1</sup> )	Magnetic field strength H (A m <sup>-1</sup> )	Magnetic flux density B (T)
1 Hz–8 Hz	5	$3.2 \times 10^4/f^2$	$4 \times 10^{-2}/f^2$
8 Hz–25 Hz	5	$4 \times 10^3/f$	$5 \times 10^{-3}/f$
25 Hz–50 Hz	5	$1.6 \times 10^2$	$2 \times 10^{-4}$
50 Hz–400 Hz	$2.5 \times 10^2/f$	$1.6 \times 10^2$	$2 \times 10^{-4}$
400 Hz–3 kHz	$2.5 \times 10^2/f$	$6.4 \times 10^3/f$	$8 \times 10^{-2}/f$
3 kHz–10 MHz	$8.3 \times 10^{-2}$	21	$2.7 \times 10^{-5}$

Notes:

- f in Hz.
- See separate sections below for advice on non sinusoidal and multiple frequency exposure.
- In the frequency range above 100 kHz, RF specific reference levels need to be considered additionally.

As a result of the measurements conducted, it has been found that the measured values are below the threshold values of 5 kV/m and 160 A/m for strength of electrical field and magnetic field, respectively, for the continuously exposed general public at an operating frequency of 50 Hz as specified by ICNIRP (International Commission On Non-Ionizing Radiation Protection) (*Source: Yildiz Technical University, 2014, Technical Report, Istanbul*).

During operations, EMA values for the planned 380 kV Çiftlikköy GIS SS are expected to be lower than the threshold value, similar to those values measured at the 380 kV Küçükbakkalköy GIS SS in urban İstanbul.

Project also concerns the erection of 380/154 kV, 2x250 MVA + 420 kV, 160-250 MVAr Adjustable Reactor+ 154/33 kV, 50 MVA + 2nd Transformer Feeder.

**SF<sub>6</sub>:** SF<sub>6</sub> is a non-toxic, inert, non-conducting, coolant, colorless, odorless and non-flammable gas which has high dielectric strength and thermal stability. With a molecular weight that is 5 times heavier than that of air, SF<sub>6</sub> is one of the heaviest gases known to man. Under conditions of 50 Hz and 1 bar, its dielectric strength is 2.5/3 times higher than that of air and nitrogen. Such value increases with increased pressure and exceeds the dielectric strength of transformer oil at 3 bars.

With its electronegativity, SF<sub>6</sub> has an excellent ability of arc quenching. Due to increased ambient temperature caused by the arc created during the breaking process, SF<sub>6</sub> decomposes, bringing forth sulfur and fluorine atoms. Fluorine atoms with high electronegativity capture the free electrons in the environment, bringing the arc current down to near-zero. Even after SF<sub>6</sub> heats up (2000 °C) and cools down after the breaking process, the fluorine and sulfur ions are recombined to transform into SF<sub>6</sub>. In this way, the dielectric environment regains its former properties.

Being quite stable chemically, SF<sub>6</sub> is used in breaker and separator equipment along with the GIS equipment installed to GIS Substations. Due to its non-toxic nature in a pure state providing a safe working environment, SF<sub>6</sub> is a preferred solution.

Since SF<sub>6</sub> is 5 times heavier than air, when given into the atmosphere it has a tendency to gather in hollow areas on the ground. It is possible to breath a mixture of 20% oxygen and 80% SF<sub>6</sub> without any negative effects. In cases of SF<sub>6</sub> leakage, the SF<sub>6</sub> collecting on the ground level should be avoided. SF<sub>6</sub> leaks in closed quarters may cause a suffocation hazard for the personnel due to oxygen deficiency. In such case, the contaminated area needs to be aerated and evacuated, with personal protective equipment worn before re-entry.

The putrid SF<sub>6</sub> gas dispersed into the environment as a result of the arc that is generated may have toxic properties. In such case, occupational safety rules must be observed while working with SF<sub>6</sub>.

Additionally, 1kg of SF<sub>6</sub> given into the atmosphere causes an unnatural greenhouse effect that is equivalent to that which is caused by a normal, gasoline powered middle-class car driven for 120.000 km (a CO<sub>2</sub> emission of 185 g per kilometer). SF<sub>6</sub> emissions should be avoided to the extent possible. The amount of SF<sub>6</sub> required to perform certain functions should be minimized.

GIS gas control design regulation is pursuant to the international standard (IEC: International Electrotechnical Commission) which strictly requires gas leakage. Thus, under the normal operation, gas leakage is almost zero. On the other hand, GIS consists of many separated and insulated gas chambers. Each chamber is equipped with an on-line / off-line gas pressure monitoring device and each chamber has gas valves. Therefore, gas leakage can be monitored by seeing the gas pressure trend automatically or manually (i.e. if gas pressure declines over the time slowly, the gas chamber leaks gas). At the maintenance, an engineer uses SF<sub>6</sub> gas detector to check small amount of leak around the chamber and connection flanges, and he can spot the leaking point. Therefore, during normal operation and maintenance condition, SF<sub>6</sub> gas leak can be detected and repair work will be initiated. By some possibility, if rapid gas leak happens, an operator in substation is noticed by alarm, can quickly detect a specific leaking gas chamber, and can close valves of such gas chamber to minimize or stop gas leaking from the chamber, and can collect remaining gas from the identified chamber from a collecting valve, then repair work will be initiated. Therefore, the leakage of SF<sub>6</sub> gas will be very little due to design, and O&M regime of a GIS substation.

The employees working with the SF<sub>6</sub> gas will be trained with respect to risks and occupational health and safety measures and be equipped with the relevant personal protection equipment as per TEIAS OHS requirements.

### **1.5 Places with High Landscape Value, Recreation and Protected Areas**

Biosphere reserves, biogenetical reserves, wildlife protection areas, natural monuments and parks, special environmental protection areas, national parks, agricultural activities and forests are not available.

Of the property consisting of 13 parcels in the planned project area, 12 are government parcels and 1 private.

In the event of any encounters with any historical or cultural artefacts during the construction of the project, activities shall be suspended and the Provincial Directorate of Culture and Tourism in Yalova shall be notified.

A flora/fauna survey of the project site has been carried out by Mr. Tolga Çetinkaya (Biologist) on 31.07.2019, which is provided in Annex-G.

### **1.6 Environmental and Social Background of the Project Site**

Following the delivery of the site to the contractor after the signing of the agreement pertaining to the substation to be constructed, around 50 people shall be employed during the excavation stage, around 75 people during the construction works and around 75 people during electrical works, reaching a total of around 200 people employed.

A great deal of workers to be employed during the construction of the substation, especially those who are unqualified, is met from the local community. Moreover, apart from large-scale items, the material to be utilized in the construction of the substation (hardware, concrete, sand, gravel, small hand tools, stone chips etc.) is met from establishments operated by the local community and likewise, the catering needs of the workers are also met from establishments operated by the locals.

The construction of the project will positively impact both the regional economy and the Turkish economy as a whole.

## **Geographical Formations and Geology**

The geological structures in the province of Yalova, old to new are Paleozoic varieties of marble and shale, Triassic red sandstone and conglomerate, Cretaceous calcite, sandstone-like limestone and conglomerates, Eocene flysch series, Neocene conglomerates, calcite, clay stone, silt stone, marl and Quaternarian alluvium overlay with lava, tuff and agglomerate rock formations (see. Annex-I)

## **Water Resources and Hydrogeology**

Highest flow rate in streams is seen in months of February and March, in general. Flow in summer is almost minimal but water on riverbeds never depletes. The presence of forests throughout the supply basin and other sources ensure uninterrupted flow. Lowest flow rate coincides with the late summer. However, there are also other streams that generally dry out in summer.

Gökçeder Reservoir and Ortaburun, Armutlu and Sarpdere ponds are man-made waterbodies along the provincial border.

Yalova Central and its surroundings are not water-rich areas. Flysch series underlying these territories are not aquiferous. However, Yalova-Taşköprü and Hersek plains are rich in terms of underground water and favor ground water operations. The movement of ground water in Hersek and Taşköprü plains is S-N, and into the sea. Ground water supply relies on seeps from supply cone streams.

Ground water is obtained in existing plains, through aquiferous alluvium, which can reach up to 80 meters in thickness. Yalova and surroundings house about 1000 water wells, which can reach up to 250 m in depth.

Observation well (Hersek plain) measurements revealed ground water availability at an average depth of 4 m, that in the Taşköprü plain, at an average depth of 7 m, which, in areas outside of operational grounds, varies depending on the hydrogeological features of each respective geological unit.

Number of blue-flagged beaches in Yalova (as of 2017) are currently 4, including Çınarcık Serender Family Resort Beach, Mawish Beach, Ömür Kafe Beach and Altınova Kaytazdere Municipal Saralkent Public Waterfront.

The personnel to work during the land preparation and construction stages of the project will meet their needs at existing structures located within the nearest settlements if applicable. Therefore, the drinking water which the workers will need will be brought to the construction site in returnable carboys and plastic bottles and water to be used for other purposes shall be provided from the existing facilities (Municipal water supply). Since the carboys are returnable, when an order is placed for water, the empty carboy will be returned to the company bringing the water. When water is supplied with plastic bottles, the empty bottles shall be collected separately as per the provisions of “Regulation on the Control of Packaging Wastes” which became effective by being published in the Official Gazette Issue 30283 dated 27.12.2017 and of “Regulation on Zero Waste” which became effective by being published in the Official Gazette Issue 30829 dated 12.07.2019 and it shall be ensured that they are recycled by being given to the licensed companies authorized by the municipality.

For construction with concrete to be performed as part of the project and during construction works, ready-mixed concrete (which is manufactured at a concrete plant and brought to the site with mixer trucks) will be utilized. The water necessary for ready-mixed concrete is supplied by the concrete supplier firm at the place where the concrete is prepared. Since the water to be used in the mixing of concrete will remain within the material, no wastewater shall be generated. Moreover, the washing of mixer trucks which return after the concrete constructions at the work site shall not be allowed within the project site and its immediate surroundings and it will be ensured that such washing is carried out on the concrete supplier firm's own site (the concrete plant).

No ground and surface water shall be used as service water within the scope of the project.

## Climatic Characteristics

Climate in Yalova is micro-climatic and displays transitional features between the Mediterranean and the Black Sea. Continental climate features can also be occasionally encountered. In Yalova, summers are dry and hot whereas wintertime brings plenty of warm weather and precipitation, with an average temperature of 14.6oC. Lowest and highest temperatures recorded are 66 and 23.7 oC, respectively.

**Table 3** Meteorological Statistics for Yalova

YALOVA	Ocak	Şubat	Mart	Nisan	Mayıs	Haziran	Temmuz	Ağustos	Eylül	Ekim	Kasım	Aralık	Yıllık
Ölçüm Periyodu ( 1931 - 2018)													
Ortalama Sıcaklık (°C)	6.5	6.9	8.4	12.4	17.0	21.5	23.7	23.7	20.1	15.7	11.8	8.7	14.7
Ortalama En Yüksek Sıcaklık (°C)	9.9	10.7	12.6	16.9	21.4	25.9	28.4	28.5	25.0	20.6	16.2	12.1	19.0
Ortalama En Düşük Sıcaklık (°C)	3.2	3.5	4.6	8.0	12.1	15.9	18.1	18.2	15.1	11.9	8.2	5.3	10.3
Ortalama Güneşlenme Süresi (saat)	1.7	2.6	3.6	4.7	6.3	7.7	8.2	7.7	6.3	4.2	2.3	1.3	56.6
Ortalama Yağışlı Gün Sayısı	15.4	12.9	12.3	10.7	7.8	5.8	3.8	3.8	5.9	9.9	11.4	14.4	114.1
Aylık Toplam Yağış Miktarı Ortalaması (mm)	92.2	72.2	74.5	52.7	36.9	38.9	23.2	28.2	54.3	83.5	79.7	115.5	751.8
Ölçüm Periyodu ( 1931 - 2018)													
En Yüksek Sıcaklık (°C)	25.1	27.2	32.0	36.5	37.0	42.1	45.4	40.2	37.5	36.6	29.7	25.7	45.4
En Düşük Sıcaklık (°C)	-9.6	-11.0	-7.4	-1.6	1.2	7.1	10.0	9.9	6.0	1.3	-3.2	-9.2	-11.0
<i>En yüksek ve en düşük sıcaklıkların gerçekleşme tarihini görmek için fare imlecini değerlerin üstüne getiriniz.</i>													
Günlük Toplam En Yüksek Yağış Miktarı				Günlük En Hızlı Rüzgar				En Yüksek Kar					
10.09.1981 <b>181.9 mm</b>				27.02.1989 <b>82.1 km/sa</b>				19.02.2008 <b>50.0 cm</b>					

## Population

Yalova, as of 31.12.2018, has a population of 262.234. In 2018, the population in the province has risen by 11.031. Male population: 50,11% (131.403). Female population: 49,89% (130.831).

In the population-based ranking of all 81 provinces in Turkey, Yalova is 66th and the population growth rate in Yalova for 2018 was 43 per thousand.

73,3% of the population in Yalova (192.288) live in the central and surrounding provinces whereas 26,7% (69.946) live in precincts and villages. In terms of population density per km<sup>2</sup>, Yalova (328/km<sup>2</sup>) is 4th after İstanbul, Kocaeli and İzmir.



Çiftlikköy has a population of 39.110 (2018) of which 19.610 are males (50,14%) and 19.500 females (49,86%). - İlyasköy neighborhood to house the project site has a population of 459 of which, 236 are males and 223 females.

### **Occupational Health and Safety (OHS)**

Establishment of substations and transmission lines are categorized as high risk according to the national OHS Law. In this respect, TEIAS has a department managing OHS issues and also capacity in the Regional Offices. TEIAS also has a detailed procedure on OHS including risk assessment procedures, training procedures, site-work procedures, procedures on working with chemicals, working at heights, OHS audit procedures, OHS incidents etc. According to the TEIAS procedures, the contractors are obliged to submit a risk assessment study, training information and work permits of the personnel, assignment of Class A OHS expert and full time C class OHS expert, personal protective equipment supply, maintenance plan of the equipment to be used on site and emergency preparedness and response plans before the mobilization of the contractors on site.

TEIAS audits the construction sites once a month with respect to OHS, and in case of continuous non-conformities, the contractors are warned and if necessary remedies are not in place, contractual enforcement is used. TEIAS has also implemented operational phase audits through a third party monitoring for OHS and environmental aspects for the existing substations. It is planned to implement these audits for the future substations as well.

Specifically, in the event of any environmental events such as death, other events leading to lost working days, spill of materials hazardous for the environment, etc.) the contractors shall notify TEIAS in 3 working days regarding the matter, who shall further notify the Bank. The detailed accident report including root-cause analysis, measures taken and compensation measures shall be submitted to TEIAS in 30 working days and TEIAS shall forward this report to the Bank.

### **Earthquake Status**

The Map of Seismic Zones in Turkey was revised by AFAD's (the Disaster and Emergency Management Presidency) Department of Earthquake and published in the Official Gazette Repeating Issue 30364 dated 18 March 2018 and the new map became effective as of 1 January 2019.

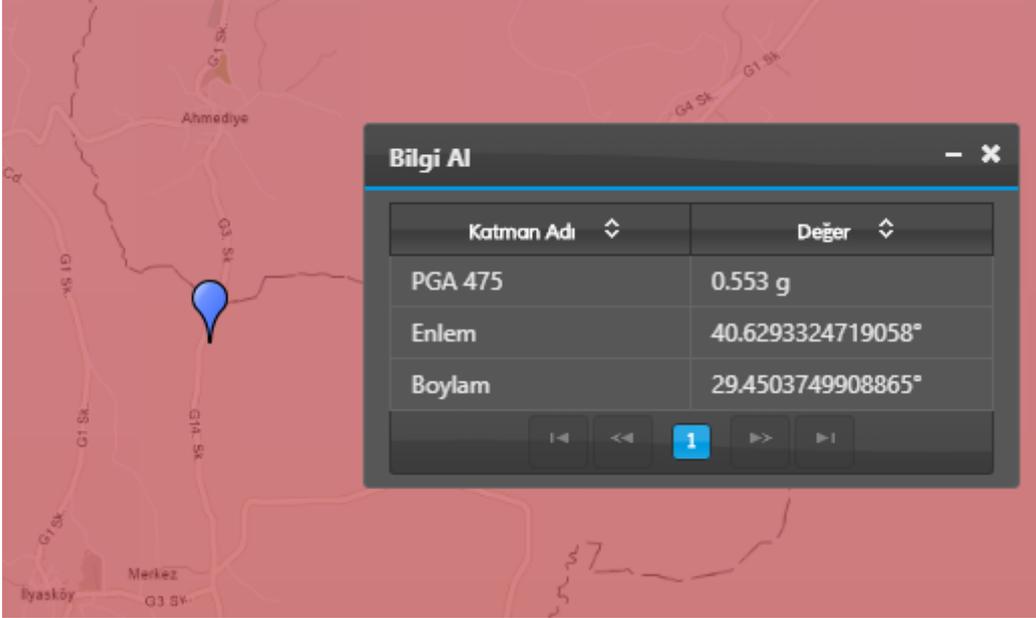
In the Turkey Earthquake Hazard Map prepared with the most up-to-date earthquake source parameters, earthquake catalogues and next generation mathematical models being taken into account and providing further and more detailed data as opposed to the Map of Seismic Zones in Turkey, the peak ground acceleration values were displayed instead of the seismic zones.

With the new Turkey Earthquake Hazard Map, the concept of "seismic zone" has become obsolete. In line with the Seismicity Map of Turkey, the largest ground acceleration on site has a PGA 475 value of 0,553, which places the area concerned in the risky zone.





**Figure 5** Kocaeli Province Earthquake Hazard Map



**Figure 6** AFAD, 2018 Turkey Earthquake Hazard Map Peak Ground Acceleration PGA 475 Value

Detailed examinations and feasibility studies concerning the measures to be taken against a potential earthquake expected in Marmara Region have been conducted by Japanese experts hired by TEIAS. The team of experts visited our country twice to study seismicity of Istanbul and the countrywide impacts of the expected earthquake. Team has had meetings with public bodies regarding this matter. The transmission system in İstanbul, power networks and transformer facilities as well as equipment have been examined. As a result of the studies, the team has concluded that no additional measure is required for the energy transmission lines and underground cables.

However, based on a prioritization study, the team has determined which equipment must be replaced at our substations, which equipment must be reinforced and how they must be reinforced. In particular, the team has determined that the 400 kV equipment is exposed to the risk of fracture due to its length, weight, and the height of its center of

gravity. Our Substation Project criteria have been modified in line with the seismic studies and necessary reinforcements have been applied on the existing projects.

Moreover, zoning plans and geological studies serving as basis for construction are made to be performed by our Enterprise on the Substation site and the projects for the facilities are prepared in line with the results of the study reports.

The 380 kV Çiftlikköy GIS SS project shall observe the provisions of the Building Earthquake Regulation effective as of its publication in the Official Gazette No. 30364 of 18.03.2018.

The emergency response plan concerning earthquakes, work accidents and fire is given in Annex-J.

## 2. POTENTIAL IMPACTS AND MEASURES

For construction with concrete to be performed as part of the project and during construction works, ready-mixed concrete (which is manufactured at a concrete plant and brought to the site with mixer trucks) will be utilized. The water necessary for ready-mixed concrete is supplied by the concrete supplier firm at the place where the concrete is prepared. Since the water to be used in the mixing of concrete will remain within the material, no wastewater shall be generated. Moreover, the washing of mixer trucks which return after the concrete constructions at the work site shall not be allowed within the project site and its immediate surroundings and it will be ensured that such washing is carried out on the concrete supplier firm's own site (the concrete plant). No ground and surface water shall be used as service water within the scope of the project.

In the event that housing units are rented for the construction site, the wastewater generated by the personnel to be employed will be fed into the existing infrastructure system and in the event that the construction site is established, the same will be collected in leak-proof-type mobile tanks (portapotties) and when the tanks are filled, it will be vacuumed with the help of sewage trucks and be fed into the nearest sewerage system which includes a Treatment Plant (a protocol shall be signed with the relevant Municipality). The principles of the Regulation on the Control of Water Pollution which became effective by being published in the Official Gazette Issue 25687 dated 31 December 2004 will be adhered to within the scope of the project.

During land preparation and construction works, only heavy duty vehicles will be used and no inflammable, explosive, hazardous, toxic or chemical material will be utilized. Therefore, no transportation and storage of hazardous and toxic materials will be performed. Dust emissions will be in question due to the excavations to be performed for the leveling works of the substation.

The 380 kV Çiftlikköy GIS SS project will require a total excavation of 63000m<sup>3</sup> throughout 130 days, 42000m<sup>3</sup> of which will be reused as filler material. 20 cm of topsoil in the area will be stripped and stored separately. The topsoil which is stored will be utilized in the landscaping of the site following construction works.

### The Possible Amount of Dust to be Generated

Considering the amount of excavated material during the excavation works carried out for the construction of the Substation will be a total of 63.000 m<sup>3</sup>:

Daily Excavation = Amount of Excavation/Levelling (days) = 63000/130 = 485 m<sup>3</sup>/d

Soil Density x total v = 1,6 ton/m<sup>3</sup> x 485 m<sup>3</sup>/d = 776 ton/d.

The amount of excavated material (since excavation work will take 8 hours/day) shall be found as follows:

776 (ton/d) / 8 (hr/d) = 97 ton/hr.

And the total hourly mass dust flow rate is (taking the dust emission factor during excavation to be 0,01 kg/ton ( 1 ) found as follows:

97 ton/hr x 0.01 kg/ton = 0,97 kg/hr.

With regard to dust and particulate matter emissions, the threshold value of 1.0 kg/hour provided for non-flue sources in Table 2.1 of Regulation on the Control of Air Pollution from Industrial Sources (SKHKKY) will be complied with. Watering will be done during dry seasons.

A flora/fauna survey of the project site has been carried out by Mr. Tolga Çetinkaya (Biologist) on 31.07.2019, which is provided in Annex-H. Precautions regarding flora/fauna have been specified in Annex-G, which are also listed here below:

- Wildlife in the vicinity of the project site will perceive noise and vibration from project activities as a threat and they would react by leaving their habitat. Accordingly, the activity owner shall ensure that measures to minimize noise have been employed.
- After the completion of the Energy Transmission Line construction, the area shall be topographically restored and the necessary landscaping work will be performed with the plant species found in the region after laying the final layer of vegetable soil on the ground.
- In the event of encounters with tortoises in the project area, that is a species under protection, such populations shall be removed from the project site to suitable environments under the supervision of TEIAS.
- Trained staff shall scan the project site for vertebrates and their dens, bird nests and rodent mounds on the ground before the activities start and species that can be captured

shall be transported and those that cannot be captured shall be distracted from the operational grounds by such staff, and so throughout the project.

- A training schedule/program shall be devised for project staff. As such, it shall be ensured that project staff handle fauna species that they would encounter throughout operations with due consideration.
- In order to keep birds away from energy transmission lines, “bird guards” shall be installed on the poles. No birds or bird nests are wanted on the top side of the connection point of isolators on traverses of the poles carrying the line. To this end, U- or V-shaped bird guard material shall be installed.
- Bird diverters shall be utilized to avoid bird-wire strikes. Bird repellents shall also be utilized on energy transmission lines.

Official letter from the Regional Directorate of Kocaeli Protection of Cultural Assets has been obtained on June 5, 2017, indicating that there are no cultural values in the designated Project area. The official letter is presented in Annex.

Land Acquisition and Livelihood Impacts: The Project will have involuntary land take impacts on private users. Therefore, as per World Bank’s Operational Policy 4.12, a separate ex-post social audit has been prepared. On the Project site, 12 units of the real estate is in possession of state treasury and 1 unit of it is in possession of private property. Agricultural activities by informal users are ongoing on the chosen real estates. Decision of public interest has been obtained by the approval of the Minister. The expropriation process is commenced once the public interest decision is obtained. Reconciliation negotiations have been held with the private property owner of the parcel number 52. However, it could not be come to an agreement. 258,237.00 TRY has been paid to the private property owner with interlocutory judgement during the process of lawsuit. The lawsuit is ongoing at court of appeal.

A detailed assessment of socio-economic conditions of impacted informal users was carried out by TEIAS regional office in order to maintain whether there were any vulnerable people among the affected users. An additional field investigation was performed on 26.04.2019 in order to identify and evaluate physical and economic losses of the informal users utilizing 12 parcels which are Treasury State land. Since the compensation for informal users were not provided under the national law but due to



World Bank's OP 4.12 policy on involuntary resettlement, all 29 users affected from the expropriation for the Ciftlikkoy substation project were informed on about the compensation amounts of their economic losses. TEIAS continues to work on the necessary budget allocation for the total amount of 116.720 TL regarding the economic losses calculated as explained above and the amount that all users will receive for the losses they have suffered. It was recorded that the affected immovables are not main source of living of the users. It has been recorded that they have other real estates as a result of external researches. The activities will be able to continue in the remaining parts of the real estate after partial expropriation.

Feasible and cost-efficient measures to prevent the potential negative impacts of 380 kV Çiftlikköy GIS Substation, reduce them to acceptable levels or redress them are presented herein. For ease of use, the mitigation measures to be implemented in each stage of the project are presented in a tabular format.

The detailed table displaying the possible environmental and social impacts of the project in question, the measures to be taken, the responsible institution and the process is provided herebelow.

**Table4** Possible Environmental Impacts and Plan of Measures

Stage	Issue	Measures**	Cost	Responsible Institution*	Start Date	End Date
<b>PRE-CONSTRUCTION</b>	Flora&Fauna	<ul style="list-style-type: none"> <li>- Relevant training on flora and fauna elements that could be found around the Project area will be provided to staff.</li> <li>- The site visit for identification of any fauna elements to be distracted from the Project site, to suitable environments.</li> </ul>	No additional cost	TEIAS	Before construction starts	Start of construction
	Land acquisition	Payment of compensation for the 29 informal users and compensation paid for the legal owner of the private parcel	Actual amount to be reported in quarterly monitoring report	TEIAS	Before construction starts	Before end of construction
<b>CONSTRUCTION</b>	Cultural and Historical Assets	<ul style="list-style-type: none"> <li>• Chance-find procedure will be established.</li> <li>• In case of a chance-find of cultural value, the construction activities will be discontinued and the related Cultural and Natural Assets Protection Boards will be informed thereof. The response of Protection Board about the facility's site will be awaited. No construction activities will be carried out meanwhile.</li> <li>• Construction activities will be resumed only after a positive response.</li> </ul>	No additional cost	Contractor	Start of construction works	Completion of construction works

Stage	Issue	Measures**	Cost	Responsible Institution*	Start Date	End Date
	Dust - particulate matter	<ul style="list-style-type: none"> <li>• With regard to dust and particulate matter emissions, the threshold value of 1.0 kg/hour provided for non-flue sources in Table 2.1 of Regulation on the Control of Air Pollution from Industrial Sources (SKHKKY) will be complied with. Watering will be done during dry seasons.</li> <li>• Loading and unloading processes will be done without scattering. In order to prevent scattering, loading and unloading processes will be carried out at places designated specifically for this purpose. Water sprinkling will be applied in order to prevent dust formation during the process. Furthermore, workers will be warned to be careful during loading/unloading. Limit-heights shall be determined for loading and/or offloading of materials that can form dust. The direction and speed of wind will be taken into account when loading and unloading materials.</li> <li>• The top of trucks will be covered and a speed limit will be applied. Speed limit on project site shall be 30 km/h and 50 km/h in the city.</li> <li>• All the vehicles to be used must have exhaust emission permits.</li> <li>• Tires of trucks operated on site shall be washed down before leaving premises (for the streets).</li> </ul>	Not high	Contractor	Start of excavation	Completion of excavation

Stage	Issue	Measures**	Cost	Responsible Institution*	Start Date	End Date
CONSTRUCTION	Noise	<ul style="list-style-type: none"> <li>• Work shall be carried out between 7:00 AM to 7:00 PM. In cases where work is required outside of these hours, the local authority and citizens shall be duly notified in advance.</li> <li>• Those living close-by shall be notified and informed throughout construction.</li> <li>• Continuous noise from the worksite shall be compliant with the level (70 dBA) stipulated in the Regulation on the Measurement and Management of Ambient Noise for daytime. To ensure this, the substation shall be fenced off and walled off with a protective concrete wall.</li> <li>• Also, in cases where the noise level has increased such measures as not operating heavy machinery simultaneously shall be taken in addition to replacing old machinery with new ones as much as possible for wear and tear is directly proportionate with level of noise.</li> </ul>	No additional cost	Contractor	Start of construction works	Completion of construction works
	Excavated matter, solid and hazardous wastes from the construction site	<ul style="list-style-type: none"> <li>• Excavation wastes shall be disposed of at the nearest dump-site duly licensed by İstanbul Metropolitan Municipality.</li> <li>• Solid wastes from the use of such construction materials as wood and metal and packaging wastes such as glass, paper and plastics shall be collected separately and handed either over to the municipality or a recycling company.</li> <li>• Domestic organic wastes shall be given to the municipality concerned to be dumped at the relevant Solid Waste Landfill.</li> <li>• Wastes such as oil, paint, etc. shall be separately collected in labeled, metal containers and handed out to a licensed recycling company.</li> </ul>	Not high although might differ depending on the municipality and/or the licensed recycling facility.	Contractor	Start of construction works	Completion of construction works

Stage	Issue	Measures**	Cost	Responsible Institution*	Start Date	End Date
CONSTRUCTION	Wastes from the Parking Lot	<ul style="list-style-type: none"> <li>To the extent possible, vehicle maintenance shall not be carried out on the construction site.</li> <li>Waste lubes, grease, etc. from construction machinery and vehicles shall be collected in stainless barrels and disposed of by the contractor, who shall ensure that these wastes are collected by licensed companies.</li> <li>Barrels shall be stored on impermeable grounds protected from rain and the sun, and in a covered area, with adequate fire protection.</li> <li>Such materials as batteries, tires, etc. to generate from the operation of machinery and vehicles shall be handed over to licensed companies for disposal.</li> </ul>	Not high	Contractor	Start of construction works	Completion of construction works
	Health and Safety	<ul style="list-style-type: none"> <li>Workers shall be provided with all required protective equipment such as hard-hats, safety harnesses, OHS overalls, goggles, gloves, hard-shoes, etc.</li> <li>Workers shall receive 'Occupational Health and Worker Safety' training. Throughout the construction phase, all staff shall be informed abouts security rules on-site as well as risks and other regulations to follow.</li> <li>Risk assessment shall be carried out per the outcome of which measures to be employed on site shall be determined.</li> <li>In the event of any on-site accidents concerning environmental, OHS or public health issues such as fatal accidents or accidents resulting in serious injury or environmental spills, etc. the contractor shall immediately notify TEIAS, which in turn shall notify the world Bank in 3 days at the latest. Detailed report on the accident including the root-cause analysis as well as information on root-cause analysis, post-accident measures employed and on damages and remedies shall be submitted to TEIAS and the World Bank in 30 days.</li> <li>SS and ETL specifications shall be observed throughout the lifecycle of the project, whereby a full-time Category C OHS expert shall be employed.</li> </ul>	Within project budget;	Contractor	Start of construction works	Completion of construction works

Stage	Issue	Measures**	Cost	Responsible Institution*	Start Date	End Date
	Traffic and Pedestrian Safety	<ul style="list-style-type: none"> <li>Measures needed to ensure safe traffic flow shall be ensured by the intermediary of respective institutions.</li> <li>Signposts that read 'Caution,' 'No trespassing,' 'Restricted Entry;' etc. shall be placed in view of safety of the locals.</li> <li>Observance of speed limits shall be ensured.</li> <li>Drivers and operators of vehicles and heavy machinery to be used throughout operations shall be informed regarding safe driving.</li> <li>Existing road network shall not incur any damages during transport operations.</li> <li>In the event of any damages on the existing road during the operation of heavy machinery and vehicles, damages shall be remedied in expense of the contractor.</li> </ul>	Not high	Contractor	Start of construction works	Completion of construction works

Stage	Issue	Measures**	Cost	Responsible Institution*	Start Date	End Date
	Flora/Fauna	<ul style="list-style-type: none"> <li>• Areas not-to-be-used following the completion of construction works shall be topographically restored.</li> <li>• Wildlife in the vicinity of the project site will perceive noise and vibration from project activities as a threat and they would react by leaving their habitat. Accordingly, the activity owner shall ensure that measures to minimize noise have been employed.</li> <li>• In the event of encounters with tortoises in the project area, that is a species under protection, such populations shall be removed from the project site to more peaceful and safe environments.</li> <li>• Trained staff shall scan the project site for vertebrates and their dens, bird nests and rodent mounds on the ground before the activities start and species that can be captured shall be transported and those that cannot be captured shall be ousted from the operational grounds by such staff, and so throughout the project.</li> <li>• A training schedule/program shall be devised for project staff. In the trainings, awareness raising activities on the endemic plants specific to the region, birds in the project site and their distribution in the region, what needs to be done when chancing upon fauna species, site scanning to be carried out before construction works etc. will be carried out.</li> </ul>	Not high	Contractor	Start of construction works	Completion of construction works

Stage	Issue	Measures**	Cost	Responsible Institution*	Start Date	End Date
	Landscaping	<ul style="list-style-type: none"> <li>Construction site shall be restored.</li> <li>No hazardous, solid, liquid and/or construction wastes shall be left behind inside the area.</li> </ul>	Within project budget;	Contractor	Completion of construction works	Commissioning of the substation
<b>OPERATION</b>	Transformer Lubes	<ul style="list-style-type: none"> <li>Transformer lubes shall not be temporarily stores on site unless compulsory.</li> <li>In cases where such storage is inevitable, transformer lubes shall be stored on impermeable grounds. They shall be covered for protection against sun and rain and the site shall be fenced-off including warning signage.</li> </ul>	Not high	Contractor	Start of storage of transformer lubes	Until lubes are transformed to the transformer
	Electromagnetic Field (EMF)	<ul style="list-style-type: none"> <li>SS construction shall observe global standards.</li> <li>In the event of grounding-related issues, grounding measurements shall be taken.</li> </ul>	Not high	Contractor/TEIAS	Start of construction	End of SS economic life
	Noise	<ul style="list-style-type: none"> <li>Measurements shall be made in the event of receiving any grievances from near-by dwellers along the SS border.</li> </ul>	Not high	TEIAS	Commissioning of the substation	End of SS economic life
	Health and Safety	<ul style="list-style-type: none"> <li>Workers shall be provided with technical training and PPE as well as respective gear.</li> <li>Worker compliance with any and all OHS requirements as well as respective regulations shall be ensured including checks as required.</li> </ul>	Under operation budget	TEIAS	Commissioning of the substation	End of SS economic life
	Risk of fire	<ul style="list-style-type: none"> <li>In the event of any fires at the SS under normal conditions, SF6 gas pressure, cable tips, insulators, cable connections as well as primaries and secondaries shall be controlled every 6 months.</li> <li>Transformers shall be fitted with automated fire extinguisher systems.</li> </ul>	High	TEIAS	Commissioning of the substation	End of SS economic life
	SF6 gas	<ul style="list-style-type: none"> <li>Gas pressure shall be measured in all sections throughout the operation period.</li> <li>Employees working with SF6 gas will be trained with respect to job hazards and occupational health and safety measures, appropriate PPEs will be provided.</li> </ul>	Under operation budget	TEIAS	Commissioning of the substation	End of SS economic life

All Regulations concerned shall be observed as respective measures are employed (i.e. Regulation on the Control of Air Pollution from Industrial Facilities, Regulation on Control of Water Pollution, Regulation on the Assessment and Management of Ambient Noise, Regulation Concerning Pits to be Built in Areas where Sewage Construction is not Possible, Regulation on Soil Pollution as well as on Sites Impacted by Local-source Pollutants, the Regulation on the Control of Solid Wastes, Regulation



on the Control of Soil Pollution, Regulation on the Control of Excavated Soil and Demolition Debris, Regulation on Packaging and Control of Packaging Wastes, Regulation on Waste Management, Regulation on Grounding in Electrical Facilities, Occupational Health and Safety Regulation, Regulation on Safety and Health Signage, Regulation Regarding the Use of Personal Protective Equipment at Workplaces, Regulation on Health and Safety Conditions Regarding the Use of Work Equipment, etc.).

### **3. MONITORING PLAN**

Environmental monitoring, during the implementation of the project, provides information regarding the efficacy especially of measures employed as well as the environmental impacts of the project during project implementation. Then, such data/information shall enable and facilitate the assessment of the level of success of the measures that constitute a part of project supervision, which also allows for correct action, as and when required. Accordingly, the ESMP defines the objective of monitoring and types of monitoring initiatives in connection with project precaution.

**Table 5** Monitoring Plan

Stage	Issue	What are the parameters to monitor?	Where to monitor such parameters?	How to monitor parameters/varieties of monitoring equipment?	When to monitor parameters - frequency of measurements to monitor/continuous measurement?	Why monitor parameters?	Cost	Controlling authority	Start Date	End Date
Pre-construction phase	Flora/Fauna	Training program Nests, holes and mounds on site	Construction site	Document check Visual	Pre-construction phase	Law on Environment and corresponding regulations	No additional cost (Project budget)	TEIAS Contractor	Before construction starts	Operational phase
	Land acquisition	Payment of compensation for the 29 informal users and compensation paid for the legal owner of the private parcel	Construction site	Payment documents	Only once after payment, before construction starts	OP 4.12		TEIAS	Before construction starts	End of construction

Stage	Issue	What are the parameters to monitor?	Where to monitor such parameters?	How to monitor parameters/varieties of monitoring equipment?	When to monitor parameters - frequency of measurements to monitor/continuous measurement?	Why monitor parameters?	Cost	Controlling authority	Start Date	End Date
<b>CONSTRUCTION</b>	Cultural and Historical Assets	New cultural assets possibly to encounter in the project area	At the construction site	Visual monitoring	In the event that cultural assets have been encountered, monitoring shall be carried out by authorities from the Cultural and Natural Assets Conservation Boards.	Protection of cultural assets, ensuring compliance with the Law on Protection of Cultural and Natural Assets	Not high in the event that any cultural assets have been damaged	Provincial Directorate of Culture and Tourism	Start of construction works	Completion of construction works
	Dust - particulate matter	Dust from the mobility and exhaust of excavation and construction machinery (mg/Nm <sup>3</sup> )  Public grievances	At the construction site	Visual monitoring  Interviews at near-by settlements	Weekly during excavation/during intensive construction/upon complaint	Regulation on the Control of Air Pollution from Industry	No additional cost (Within project budget)	TEIAS  Provincial Directorate of Environment and Urbanization	Start of construction works	Completion of construction works

Stage	Issue	What are the parameters to monitor?	Where to monitor such parameters?	How to monitor parameters/varieties of monitoring equipment?	When to monitor parameters - frequency of measurements to monitor/continuous measurement?	Why monitor parameters?	Cost	Controlling authority	Start Date	End Date
	Noise	Level of noise Public grievances	On construction site	Sound measurement using audiometer (noise level measuring device) Interviews at near-by settlements	Weekly visual observations Upon public complaint	Regulation on the Measurement and Management of Ambient Noise	Not high	TEIAS Provincial Directorate of Environment and Urbanization	Start of construction works	Completion of construction works

Stage	Issue	What are the parameters to monitor?	Where to monitor such parameters?	How to monitor parameters/varieties of monitoring equipment?	When to monitor parameters - frequency of measurements to monitor/continuous measurement?	Why monitor parameters?	Cost	Controlling authority	Start Date	End Date
	Waste water from construction sites	Connection to the sewage system  Pollution, turbidity, smell in water and soil at the substation area	In the area of sewage system connection and the substation area	Visual observation (of whether or not waste waters are discharged in areas where discharge is not permitted and of documents regarding whether or not waste waters have been disposed of through connection to the sewage system)	Weekly (flash checks and controls)	To ensure adherence to the Regulation on the Control of Water and Soil Pollution and on Locally Polluted Sites	No additional costs (within project budget)	TEIAS  Municipality	Start of construction works	Completion of construction works

Stage	Issue	What are the parameters to monitor?	Where to monitor such parameters?	How to monitor parameters/varieties of monitoring equipment?	When to monitor parameters - frequency of measurements to monitor/continuous measurement?	Why monitor parameters?	Cost	Controlling authority	Start Date	End Date
	Excavation, solid and hazardous wastes from the construction site	Smell/odor  Visual pollution	On construction and dump sites	Documentation check on waste management  Visual	Weekly (flash checks and controls)	Ensure compliance with the Regulations on the Protection of Habitats and Waste Management, on the Control of Soil Pollution and on Locally Polluted Areas, and the Control of Waste Lubes.	Not high although varies between municipalities and/or licensed recycling plant  Not high although might differ depending on the a licensed recycling facility.	TEIAS  Contractor  Municipality  Provincial Directorate of Environment and Urbanization	Start of construction works	Completion of construction works

Stage	Issue	What are the parameters to monitor?	Where to monitor such parameters?	How to monitor parameters/varieties of monitoring equipment?	When to monitor parameters - frequency of measurements to monitor/continuous measurement?	Why monitor parameters?	Cost	Controlling authority	Start Date	End Date
	Wastes from the machinery park	Waste lubes, batteries, expired tires and scrap electronic on-board materials	At the machinery park	Inspection and control of vehicle inspection documentation	During breakdown or periodical maintenance	To ensure disposal of wastes in observance of Regulations On The Control Of Hazardous Wastes, On The Control Of Waste Lubes, Waste Batteries, and Expired Tires	Not high although might differ depending on the a licensed recycling facility.	Contractor	Start of construction works	Completion of construction works
	Transformer Lubes	Leakages from barrels to store transformer lubes, barrels used (as to where they have been stored and how they have been dispatched to companies)	At the storage site in the event of storage	Documentation check on waste oils and lubricants  Visual	Throughout storage period	To prevent any leakages and seeps in the area for storing lubes	Not high	TEIAS	Start of Storage	End of Storage



Stage	Issue	What are the parameters to monitor?	Where to monitor such parameters?	How to monitor parameters/varieties of monitoring equipment?	When to monitor parameters - frequency of measurements to monitor/continuous measurement?	Why monitor parameters?	Cost	Controlling authority	Start Date	End Date
	Health and Safety	<p>safety training documents</p> <p>Training certificates to prove training participation</p> <p>Safety equipment used on construction site such as hard hats, gloves, shoes, safety harnesses, etc.</p> <p>Accidents statistics</p>	At construction sites	<p>Documentation check on the occupational health and safety</p> <p>Visual</p>	<p>At the beginning of each work process</p> <p>Daily</p>	Ensure adherence to the Regulation on Occupational Health and Safety	No additional cost (Within project budget)	TEIAS Contractor	Start of construction works	Completion of construction works
	Flora/Fauna	<p>Noise minimizing structure</p> <p>Establishment of structures for distracting birds</p>	SS site	Visual	Throughout construction period	Ensure adherence to the Environmental Law and regulations	No additional cost (Within project budget)	TEIAS Contractor	Completion of construction works	Commissioning of the substation

Stage	Issue	What are the parameters to monitor?	Where to monitor such parameters?	How to monitor parameters/varieties of monitoring equipment?	When to monitor parameters - frequency of measurements to monitor/continuous measurement?	Why monitor parameters?	Cost	Controlling authority	Start Date	End Date
	Landscaping	Wastes (excavation, solid, liquid, hazardous, etc.)  Reinstatement of unused areas	At substation area	Documentation check on waste management  Visual	During site close-down	To ensure adherence to the Environmental Law and regulations	No additional cost (Within project budget)	TEIAS Contractor	Completion of construction works	Commissioning of the substation
<b>OPERATION</b>	Noise	Level of noise  Public grievances	On the border of the substation  In near-by settlements	Interviews with dwellers of near-by settlements	Upon complaint (as required)	Control of whether or not values specified in the regulation have been met	Not high	TEIAS	Commissioning of the substation	End of SS economic life

Stage	Issue	What are the parameters to monitor?	Where to monitor such parameters?	How to monitor parameters/varieties of monitoring equipment?	When to monitor parameters - frequency of measurements to monitor/continuous measurement?	Why monitor parameters?	Cost	Controlling authority	Start Date	End Date
	EMF	Substation wall/fence gauges  Documentation regarding the procurement of substation equipment and fittings  Ground resistance (ohm)	Inside and in the area of the substation	Visual monitoring  Interviews with dwellers of near-by settlements  Grounding measurement	Before the commissioning of the substation  When there is a problem with grounding	Check whether or not national and international reference values have been met	Not high	TEIAS	Commissioning of the substation	End of SS economic life
	Health and safety	Technical and OHS Training (Operation and Maintenance)  Protective equipment and overalls (whether or not used by workers)	At substation area	Documents on training  Visual	Throughout operation (at suitable intervals)	To ensure adherence to any and all Occupational Health and Safety-related regulations	No additional cost (Under operation budget)	TEIAS	Commissioning of the substation	End of SS economic life

Stage	Issue	What are the parameters to monitor?	Where to monitor such parameters?	How to monitor parameters/varieties of monitoring equipment?	When to monitor parameters - frequency of measurements to monitor/continuous measurement?	Why monitor parameters?	Cost	Controlling authority	Start Date	End Date
	Risk of fire	SF6 gas pressure, cable terminal caps, insulators, cable connection joints  Primary and secondary controls	At substation area	With technical tests and standard maintenance works performed by control teams	Once every six months in the event of any failures or as required by the electrical system	Upon risk of fire  To ensure adherence to fire safety principles specified in the Regulation on Electrical High Current Facilities, for the maintenance of worn out, broken sections, as well as to prevent the risk of accidents and shortages	No additional cost (Under operation budget)	TEIAS	Commissioning of the substation	End of SS economic life
	SF6 Gas	SF6 gas pressure	At all sections	With pressimeter	Throughout operation (continuous)	...	No additional costs (within operational budget)	TEIAS 2. Regional Directorate	Commissioning of the substation	End of SS economic life

Stage	Issue	What are the parameters to monitor?	Where to monitor such parameters?	How to monitor parameters/varieties of monitoring equipment?	When to monitor parameters - frequency of measurements to monitor/continuous measurement?	Why monitor parameters?	Cost	Controlling authority	Start Date	End Date
	Transformer Lubes	Characteristic features of oil (density, acidity, fluidity, spark point, corrosive sulphur, PCB, color)	In transformers	Test Methodology	Daily/weekly/monthly as a result of a failure every two years	Lube quality control	No additional costs (within operational budget)	TEIAS	Commissioning of the substation	End of SS economic life

Stage	Issue	What are the parameters to monitor?	Where to monitor such parameters?	How to monitor parameters/varieties of monitoring equipment?	When to monitor parameters - frequency of measurements to monitor/continuous measurement?	Why monitor parameters?	Cost	Controlling authority	Start Date	End Date
	Solid and hazardous wastes to generate during operations (batteries, waste lubes)	<p>Pollution to generate inside the substation area (wastes, smell, etc.)</p> <p>Wastes from failed equipment and fittings</p> <p>Pollutants in waste transformer lubes (Arsenic, Cadmium, Lead, Total Hallogens, PCB, spark point)</p>	At substation area	<p>Documentation check on waste management</p> <p>Visual</p> <p>Test methodology</p>	<p>Throughout operation</p> <p>Upon failure, breakdown and expiry of economic life of equipment</p> <p>Upon expiry of the economic life of transformer lubes</p>	<p>To ensure adherence to Regulation on the Protection of Habitats and the Control of Solid Wastes, the Regulation on the Control of Soil Pollution and Areas with Point-Source Pollution, the Regulation on the Control of Hazardous Wastes and the Regulation on the Control of Waste Oils</p> <p>To ensure adherence to the Regulation on the Control of Waste Lubes</p>	<p>Not high although varies between municipalities and/or licensed recycling plant</p> <p>Not high although depends on the measurement company</p>	<p>TEIAS</p> <p>Municipalities</p> <p>Provincial Directorate of Environment and Urbanization</p>	Commissioning of the substation	End of SS economic life

#### 4. INSTITUTIONAL ARRANGEMENTS

This section shall set forth the institutional responsibility and procedures pertaining to the measures to be taken and monitoring, their links with environmental management, environmental information flow and the decision-making hierarchy related to environmental management, and enunciate how and in what way monitoring data will be used to ensure a reliable environmental performance.

##### **4.1 Institutional responsibility and procedures regarding measures to be taken and monitoring, their links to environmental management.**

The “Mitigation Measures Plan”, which covers the measures to be taken to minimize the potential negative impacts to arise from the activities to be carried out during the planing/design, construction and operation stages of 380 kV Çiftlikköy GIS Substation Project, is presented in Section 2, and the “Monitoring Plan” prepared to check the implementation conditions of the principles and procedures specified in the Mitigation Measures Plan is presented in Section 3. These plans also specify the agencies and institutions responsible for the referred actions. The Mitigation Measures and Monitoring Plans are the key components of the Environmental Management Plan prepared within the framework of the “Political, Legal and Administrative Framework” section of Environmental Impact Assessment reports.

##### ***Legal Framework***

Environmental Law No. 2872 which was published in the Official Gazette of the Republic of Turkey issue 18132 dated 11 August 1983 and amended in the Official Gazette dated 29 May 2013 (Law No. 6486) sets the basic legal framework for environmental legislation in Turkey. Article 10 of Environmental Law serves as the main framework for the Environmental Impact Assessment Regulation (ÇED/EIA Regulation) published in the Official Gazette Issue 29186 dated 25 November 2014. However, substations are not considered within the scope of the Turkish EIA Regulation. Therefore, substations are excluded from the EIA process. Apart from that, as part of the European Union accession procedures, Turkey has realized numerous institutional and legal reforms. The regulations which must be adhered to within the scope of the project are listed herebelow.

- Waste Management Regulation, published in the Official Gazette Issue 29314 dated 2 April 2015;
- Regulation on the Control of Hazardous Wastes, published in the Official Gazette Issue 25755 dated 14 March 2005 and amended most recently in the Official Gazette Issue 28812 dated 5 November 2013;
- Regulation on the Control of Waste Oils, published in the Official Gazette Issue 26952 dated 30 July 2008 and amended in the Official Gazette Issue 28812 dated 5 November 2013;
- Regulation on the Control of Waste Vegetable Oils, published in the Official Gazette Issue 29378 dated 6 June 2015;
- Regulation on the Control of Packaging Wastes, published in the Official Gazette Issue 28035 dated 24 August 2011;
- Regulation on the Control of Waste Batteries and Accumulators, published in the Official Gazette Issue 25569 dated 31 August 2004 and amended most recently in the Official Gazette Issue 28812 date 5 November 2013;
- Regulation on the Control of Medical Waste, published in the Official Gazette Issue 25883 dated 22 July 2005 and amended most recently in the Official Gazette Issue 28948 dated 21 March 2014;
- Regulation on the Control of Excavated Soil, Construction Wastes and Debris, published in the Official Gazette Issue 25406 dated 18 March 2004 and amended in the Official Gazette Issue 27533 dated 26 March 2010;
- Regulation on the Control of End-of-Life Tires, published in the Official Gazette Issue 26357 dated 25 November 2006 and amended most recently in the Official Gazette Issue 29292 dated 11 March 2015;
- Sanitary Landfill Regulation, published in the Official Gazette Issue 27533 dated 26 March 2010 and amended most recently in the Official Gazette Issue 29292 dated 11 March 2015;
- Communique on the Recovery of Some Non-Hazardous Wastes, published in the Official Gazette Issue 27967 dated 17 June 2011 and amended in the Official Gazette Issue 29292 dated 11 March 2015;
- Control of Waste Electrical and Electronic Devices, published in the Official Gazette Issue 28300 dated 22 May 2012;



- Regulation on the Control of Soil Pollution and Sites with Point-Source Pollution, published in the Official Gazette Issue 27605 dated 8 June 2010 and amended in the Official Gazette Issue 28704 dated 7 June 2013;
- Regulation on the Control of Water Pollution, published in the Official Gazette Issue 25687 dated 31 December 2014;
- Regulation on the Monitoring of Surface Waters and Ground Waters, published in the Official Gazette Issue 28910 dated 11 February 2014;
- Regulation on the Protection of Ground Waters Against Pollution and Deterioration, published in the Official Gazette Issue 28257 dated 07 April 2012;
- Regulation on Amendments to the Regulation on the Control of the Pollution Caused by Hazardous Materials In and Around Waters, published in the Official Gazette Issue 26005 dated 26 November 2005;
- Regulation on Waters Intended for Human Consumption, published in the Official Gazette Issue 25730 dated 17 February 2005;
- Regulation on Urban Waste Water Treatment, published in the Official Gazette Issue 26047 dated 01 January 2006;
- Regulation on the Evaluation and Management of Air Quality, published in the Official Gazette Issue 26898 dated 06 June 2008;
- Regulation on the Evaluation and Management of Ambient Noise, published in the Official Gazette Issue 27601 dated 04 June 2010;
- Law on Ground Waters (Law No. 167), published in the Official Gazette Issue 10688 dated 23 December 1960;
- Law on the Protection of Cultural and Natural Heritage (Law No. 2863), published in the Official Gazette Issue 18113 date 23 July 1983;
- Highway Traffic Law (Law No. 2918), published in the Official Gazette Issue 18195 dated 18 October 1983;
- Regulation on Road Traffic, published in the Official Gazette Issue 23053 dated 18 July 1997;
- Turkey Building Earthquake Regulation, published in the Official Gazette Issue 30364 dated 18 March 2018;
- Regulation Pertaining to Cesspits to be Built in Places where the Construction of a Sewerage System Is Not Possible, published in the Official Gazette Issue 13783 dated 19 March 1971.

- Law No. 6331 on Occupational Health and Safety published in the Official Gazette Issue 28339 dated 30 June 2010 and the relevant legislation.

Some of the legal arrangements in Turkey within the scope of expropriation works are also listed herebelow:

- Expropriation Law No. 2942 published in the Official Gazette Issue 18215 dated 8 November 1983 and the relevant legislation
- Law No. 4650 on Amendments to the Expropriation Law published in the Official Gazette Issue 24393 dated 5 May 2011

Requirements of the Turkish Environmental Legislation and Procedures and of World Bank Operational Policies (World Bank Principle OP/BP/GP 4.01 (Environmental Assessment), OP/BP 4.04 (Natural Habitats), OP/BP 4.11 (Physical Cultural Resources), OP 4.12 (Involuntary Resettlement) which are the four principles which commence environmental policies during project planning) shall be met, the basic differences between requirements in Turkey and World Bank requirements shall be determined and steps shall be taken to fill such gaps.

#### ***Environmental Assessment Policy OP. 4.01***

Projects under the Environmental Assessment System of the World Bank (OP. 4.01) are classified as Category A, B, or Category C in view of the estimated potential risk.

Category A projects are those that can negatively impact environmentally and socially-important areas such as humans, forest areas and other natural habitats. These impacts, in general, are large scale impacts and irreversible, sensitive, diverse, cumulative, exemplary and might be impacting an area that is in effect larger than the location and facility financed under the project.

Category B can include projects with a variety of potential environmental and social challenges on a larger scale.

Category C projects include no activities that might have a negative impact on the environment. Thanks to the integration of good practices, potential impacts of such projects in this category can be almost zeroed-out.

380 kV Çiftlikköy GIS Substation Project is considered to be of a Category B or lower risk classification.

### ***The World Bank Operational Policy OP 4.11 on Physical Cultural Resources***

Cultural assets are critical for economic and social development, hence shall be taken into consideration in all project practices. Potential impacts are demonstrated as integral parts of the environmental assessment process. TEIAS is responsible for the prevention or mitigation of the impact of financed projects on physical or cultural resources. Therefore, TEIAS shall meet all the requirements of the legislation in Turkey.

Moreover, the measures to be taken in the event of a chance-find of any cultural asset and the follow-up to be carried out is explained in the ESMP.

### ***The World Bank Operational Policy OP 4.04 on Natural Habitats***

There is the possibility that construction works within the scope of the project can affect critical or not-critical natural (as per the definition in OP 4.01) habitats. It has no significant impact on an accepted critical natural habitat or ecosystem.

### ***World Bank Operational Policy OP 4.12 on Involuntary Resettlement***

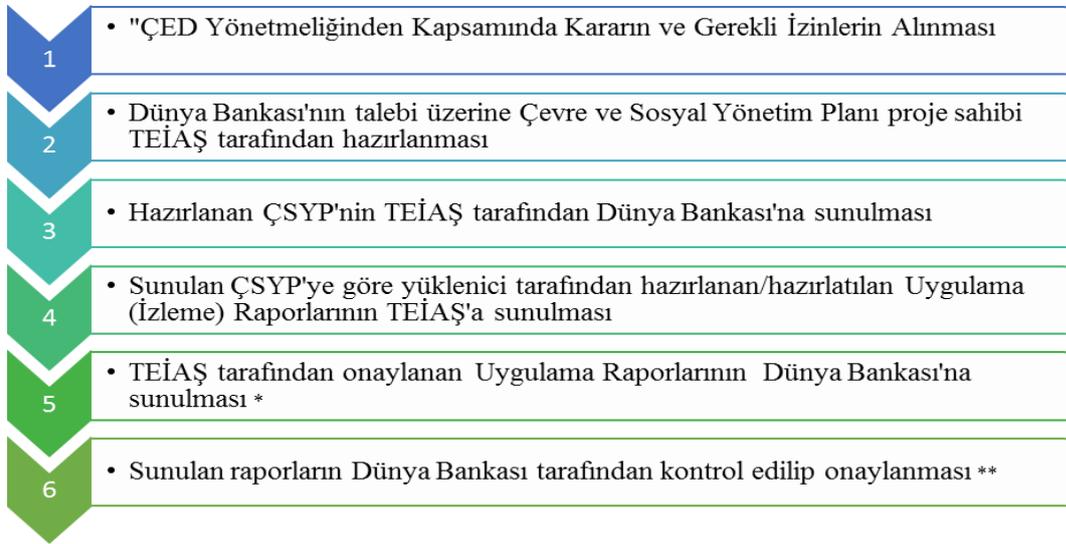
TEIAS acquires the immovables which coincide with transmission facilities by way of expropriation as per the national legislation. Since land acquisition impacts the owners of such immovables, the situation is considered within the scope of World Bank's involuntary resettlement policy (OP 4.12). Even though OP 4.12 policy implementations encompass involuntary resettlement, people are not displaced in TEIAS' expropriation procedures. That being said, sensitivities set forth by OP 4.12 are taken into consideration in World Bank loan projects.

#### 4.2 Environmental Information Flow (Reporting, by whom, to whom and how often reports will be submitted, etc.)

To create and implement a well-functioning environmental management plan, the principles applicable to monitoring data must be established very well. In this context, the published national regulations and communiqués must be observed. In Turkey, within the scope of environmental management the provisions of the "Regulation on Environmental Impact Assessment" which came into force by being published in the Official Gazette Issue 29186 dated 25 November 2014 are taken as basis. The 380 kV Çiftlikköy GIS Substation Project is considered to be outside of the scope of this regulation.

The measures included in the Environmental and Social Management Plan will be monitored by the contractor or an environmental consultant to be hired by the contractor. The monitoring reports to be created by collecting monitoring data will be submitted to the project owner (TEİAŞ) on a quarterly basis.

The environmental information flow contemplated for the planned construction projects is shown below.



**Figure7:** Environmental Information Flow

### 4.3 Project Information Flow

The environmental information flow contemplated for the planned 380 kV Çiftlikköy GIS Substation Project is shown below



**Figure8** Project Information Flow

Once the proposed project proceeds into the construction stage, the project owner (TEIAS) will supervise the performance of contractor in complying with the ESMP provisions, together with its Regional Directorates. In this scope, the contractor is obliged to comply with the requirements set out in the Mitigation Measures and Monitoring Plan, and shall report construction activities periodically (quarterly) to TEIAS.

The Environmental and Social Management Plan Implementation report prepared/made to be prepared by the Contractor on a quarterly basis shall be submitted to the relevant Regional Directorate. The responsible person at the relevant Regional

Directorate shall review the validity of the report on site and then the report shall be submitted to Directorate General along with comments from the Regional Directorate. The report as examined by the Directorate General shall then be submitted to the World Bank upon being approved. Revisions may be requested from the contractor during the examination of the reports.

The World Bank reviews the site-specific environmental and social documents prepared and approves the instruments. The compliance with the mitigation and monitoring measures committed by TEIAS are followed up through support missions, when necessary. Furthermore, TEIAS is to provide site-specific implementation monitoring reports to World Bank on quarterly basis.

**Table6** Organization Table

<b>Activity</b>	<b>Institutional Responsibility</b>
<i>Collection of Monitoring Data</i>  Construction	The measures included in the Environmental Management Plan will be monitored by the contractor or an environmental consultant to be hired by the contractor. The monitoring reports to be created by collecting monitoring data will be submitted to the project owner (TEIAS) on a quarterly basis.
<i>Data Analysis</i>  Construction	The related Regional Directorate of TEIAS (2nd Regional Directorate) verifies that the data presented in reports are correct (by reviewing the validity of data on site). Then the checked reports will be submitted to TEIAS Directorate General (Ankara) for control and approval. The report will then be submitted to the World Bank if it is approved by TEIAS Directorate General (Environment and Expropriation Department).
<i>Management</i>  Construction	If something illegal or non-compliant with regulations is observed, the Ministry of Environment and Urbanization is authorized to stop activities or change operations.

## **CONSULTATIONS WITH PROJECT AFFECTED PEOPLE AND VOLUNTEERING BODIES (NGOs)**

İlyasköy neighborhood of Çiftlikköy district of Yalova province has been identified as the target local people who may be potentially affected negatively in terms of environmental aspects, from the proposed 380 kV Çiftlikköy GIS Substation.

Even though the Turkish Legislation does not have sufficient provisions with regard to public consultation and information on land acquisition, for the subject project, TEIAS has provided the necessary environmental and social information to the headmen with a view to informing the affected groups and a Public Information Brochure (Annex-C) and draft ESMP have been prepared and submitted to Recep Gülçen, the Headman of İlyasköy neighborhood, for review, objections and suggestions, on 15.01.2019 (Annex-C) and this process was made public on the official website of TEIAS on 21.01.2019 (<http://www.teias.gov.tr>) (Annex-E). Additionally, the public was informed through the official Instagram, Twitter and Facebook pages of TEIAS (Annex-E). Within the scope of the grievance mechanism of the project, it was made sure that the affected individuals were provided with the names and contact information of the people they can contact with.

During the process of informing the public, the local community under the lead of the headman applied to the Regional Directorate and Çiftlikköy District Governor's Office on 21.01.2019 with a petition for the relocation of the planned substation to another unused place. The District Governor's Office forwarded the relevant petition to TEIAS Directorate General on 25.01.2019. The headman was contacted during this process and a briefing meeting on the project was held on 08.02.2019 with public participation.

A minute was signed off at the closing of the meeting (Annex-D). In the mentioned minutes, it was stated that the locals were involved in agricultural activities in the site and requested that Block 122 Parcel 4 in İlyasköy be considered as an alternative, that concerns about the safety of life and property were present due to the power lines to be connected after the construction of the substation being close to the center of the village and that since villagers object to this, it is requested that the facilities be built elsewhere.

As a reply to the petition dated 25.01.2019 forwarded to our Organization by Çiftlikköy District Governor's Office, TEIAS Directorate General sent an official letter on

28.02.2019 stating that information was provided on the mentioned project by posting announcements in İlyasköy Headman's Office and on the web site and social media accounts of our organization; that the construction of the mentioned project would provide benefits to our country; that Çiftlikköy GIS Substation is one of the steps in Gulf of İzmit Passage projects which is planned for the secure and safe transmission to Adapazarı and İstanbul regions of the electrical energy to be generated by the TPPs in Southern Marmara and Western Anatolia Regions and by the existing and planned WPPs considering the high wind potential, for avoiding restrictions to power plants in cases of malfunction, for the provision of N-1 security and a planned transmission network maintenance; that Çiftlikköy 380 GIS was included within the investment program of our Organization with the purpose of reliably meeting the increasing loads of Bursa and Yalova provinces; that the construction of the Substation in that area posed to be imperative considering the route of the Gulf Passage cables to be installed, the nearness of the existing 154 kV Energy Transmission Lines feeding the area and which will be connected to Çiftlikköy Substation and the possibility of meeting the possible new consumptions which may arise in the area around Osmangazi Bridge; that with this Substation which shall be built near Yalova Province, Çiftlikköy District, the supply security for the region would be increased by providing an additional source to the 154 kV transmission lines feeding the Yalova Bursa region; that the surfacing of a risk concerning possible restrictions in the autotransformer N-1 conditions due to autotransformers in Bursa Sanayi and Bursa Doğalgaz Substations which feed Bursa province being loaded at around 70% and to increasing urban loads was effective in the planning of this new substation; that with the construction of Çiftlikköy 380 GIS Substation the existing autotransformer loads will be relieved, and that additionally, almost 67 billion Turkish liras worth of annual gains is expected with decreasing losses due to local consumption being met on-site instead of from far-away sources.

On 26.04.2019, representatives from the World Bank and TEIAS made a site visit during which a small-scale public meeting was held. The headman and some of the land users whose land parcels are affected by the situation attended the meeting and reiterated that TEIAS needs to select an alternative land. In addition to the up to date efforts, TEIAS will also make sure that affected people in Ciftlikkoy GIS project will attend the public consultation meeting to be held for Izmit Gulf Crossing so that detailed technical information on the site selection of Ciflikkoy GIS is explained to the public.



Although there are not enough provisions in the Turkish Legislation on public consultation and information on land acquisition, TEİAŞ has announced a physical public participation and land acquisition meeting on 10.12.2019 for the purpose of informing the affected community about İzmit Gulf Transition in addition a public participation meeting was held for Sütlüce in order to explain the documents of environmental and social security measures.

Prior to the meetings, the draft of ESMP and ESIA in English and Turkish (Annex-M) and announcement text was published on the Official Web Site of TEİAŞ ([www.teias.gov.tr](http://www.teias.gov.tr)), furthermore, the Regional Directorate officials of TEİAŞ visited the relevant mukhtar to inform about the meeting (Annex-N).

During the meeting TEİAŞ made a presentation including the content of the project, possible environmental and social impacts and the mitigation measures, monitoring these measures and the grievance mechanism prepared for the grievance and requests for the project

During the meeting, there were no questions regarding the Ciftlikkoy Project.

As of yet, no new complaint has been received apart from the above mentioned petition.

Additionally, TEİAŞ' expropriation team maintains one-on-one contact (mostly through telephone calls) with property owners and other affected individuals. If required, collection of socio-economic information shall continue.

Negotiations and briefings shall continue through the land acquisition process and during visits made by the TEİAŞ Regional Directorate team. The meetings held, participants thereof and issues discussed shall be documented to the World Bank in the monitoring reports to be prepared in a quarterly manner.

The "TEİAŞ Stakeholder Relations Grievance and Demand Management Procedure" prepared by TEİAŞ Directorate of Corporate Communication was published within the scope of quality management.

### **Grievance Redress Mechanism**

The environmental and social activities supported by a grievance redress mechanism established by TEIAS are notified to the affected individuals prior to the project. The system allows for proper recording of the grievances, concerns and demands of affected individuals and the timely consideration thereof.

Various issues ranging from the environmental impacts over the areas coinciding with project components to the issue of compensation can be the subject of grievances. TEIAS will provide the suitable procedures to relieve the suffering of affected individuals in a timely and satisfactory manner and without causing any victimization.

Through the project duration, TEIAS will make the necessary efforts to amend the project grievance mechanism during any and all kinds of briefings and negotiations with the affected individuals and settlements. During the construction, TEIAS may assign an accessible point of contact (name / position) to whom all kinds of issues pertaining to the project (concerns, grievances and similar demands) can be communicated. This person shall be responsible for keeping records of the filed grievances. TEIAS and its Regional Directorate shall ensure that all grievances are addressed and resolved in a timely manner and in line with the requirements of World Bank Policy.

Contact numbers of both our establishment and the authorized officers and the address of our establishment was given to headman's offices. The people were informed that for any kind of information, the Expropriation Head Engineer and officers of the expropriation department can be reached at 0 224 243 13 30.

Grievances shall be addressed firstly at the local offices opened by TEIAS. A grievance mechanism was established as illustrated in the below provided table.

**Table 7** Grievance Mechanism

Level	Authority	Manner of Application	What Is Done	Duration
1	<b>TEIAS 2.Regional Directorate</b> N.Kemal Mah.Sütçü Cad.Şeker Maslak Sok.No:9 PK:50 16140 Nilüfer/BURSA <b>Phone:</b> 0 224 243 13 30 <b>Fax:</b> 0 224 243 50 23	Face-to-face, phone call, written correspondence	Question or grievance is evaluated. Feedback is provided to the individual. If no resolution is found, s/he is directed to legal remedy.	1 week
2	<b>TEIAS General Directorate Department of Environment and Expropriation</b> Nasuh Akar Mah. Türkocağı Cad. No:2/14 Çankaya/ANKARA Tel : 0 312 203 86 11 Fax : 0 312 203 87 17	Phone call, written correspondence, e-mail	Question or grievance is evaluated. Feedback is provided to the individual. If no resolution is found, s/he is directed to legal remedy.	2 weeks
3	Relevant Civil Court of First Instance	Written correspondence	In line with the legislation	In line with the legal duration

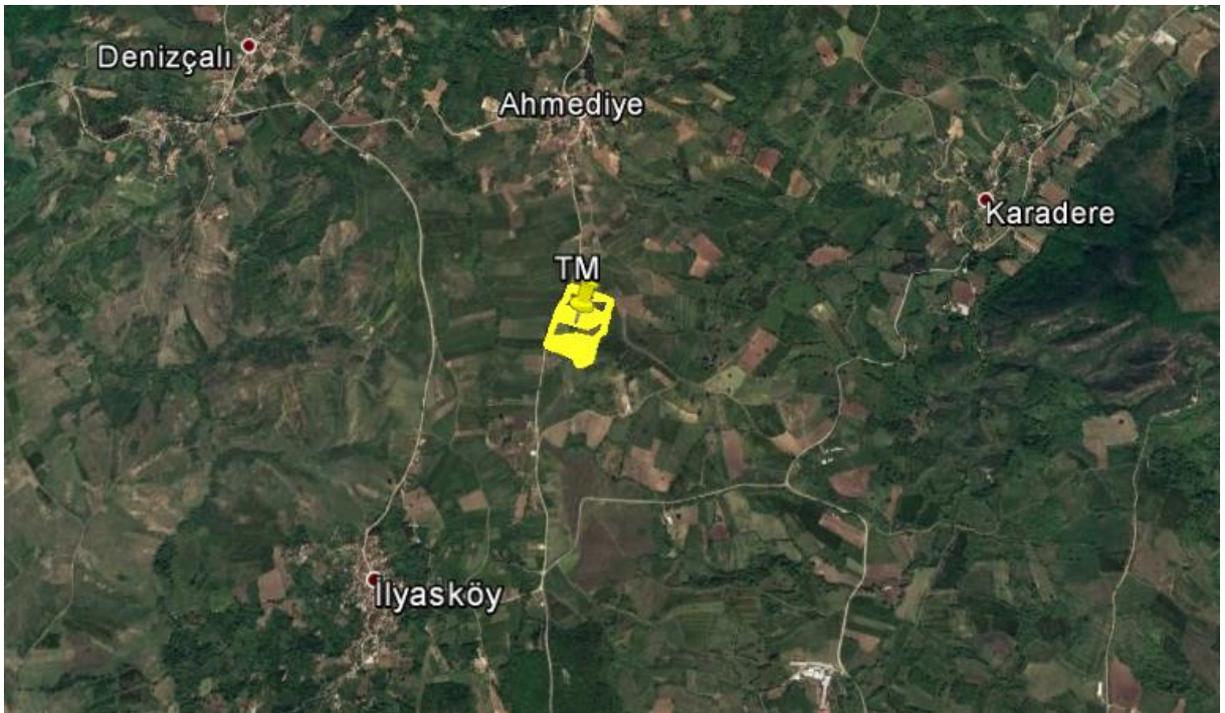
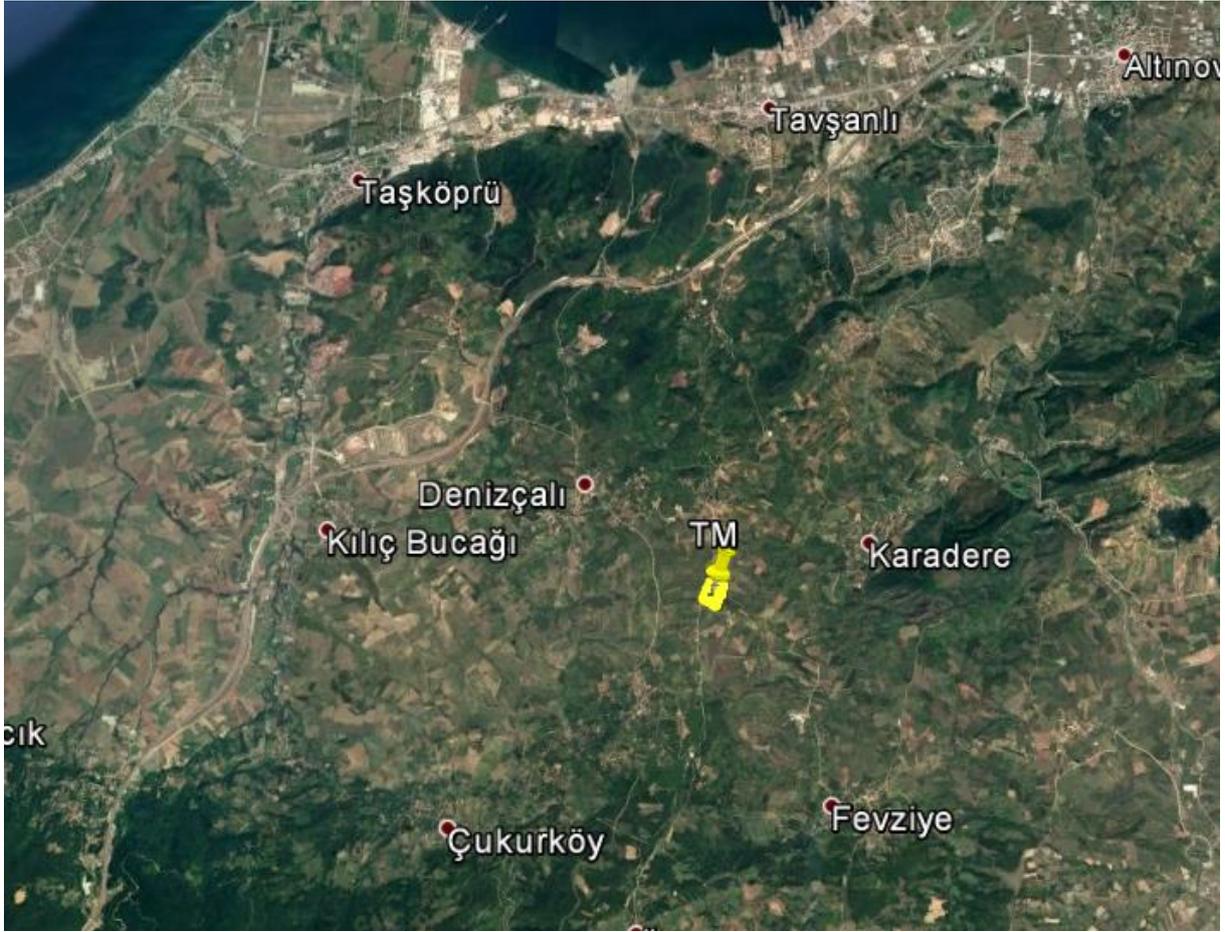
The people have been informed that they could apply to TEIAS Directorate General or 4th Regional Directorate in case they have any complaint or want to obtain any information during the project's construction and operation stages. The necessary contact details (phone number, fax number, address, etc.) have been shared with the neighborhood headman.

# ANNEXES

## **LIST OF ANNEXES**

Annex-A	Satellite Imagery and Photos
Annex-B	Pictures of Existing GIS Substations
Annex-C	Public Information Brochure and Minutes
Annex-D	Feedback Form and Visuals from the Meeting
Annex-E	Visuals for the Web and Social Media Announcements
Annex-F	Site Dimensions
Annex-G	Flora-Fauna Study of the Project Site
Annex-H	Chance Find Procedure
Annex-I	Geological Map
Annex-J	Emergency Response Plans
Annex-K	Correspondences with Regional Board of Protection of Cultural Heritage
Annex-L	Mukhtar's Minutes
Annex-M	Visuals of Web Announcement
Annex-N	Photographs of the Public Consultation Meetings

## **Annex-A Satellite Imagery and Photos**



















# **Annex-B Pictures of Existing GIS Substations**

AÇIK ŞALT



GIS TM







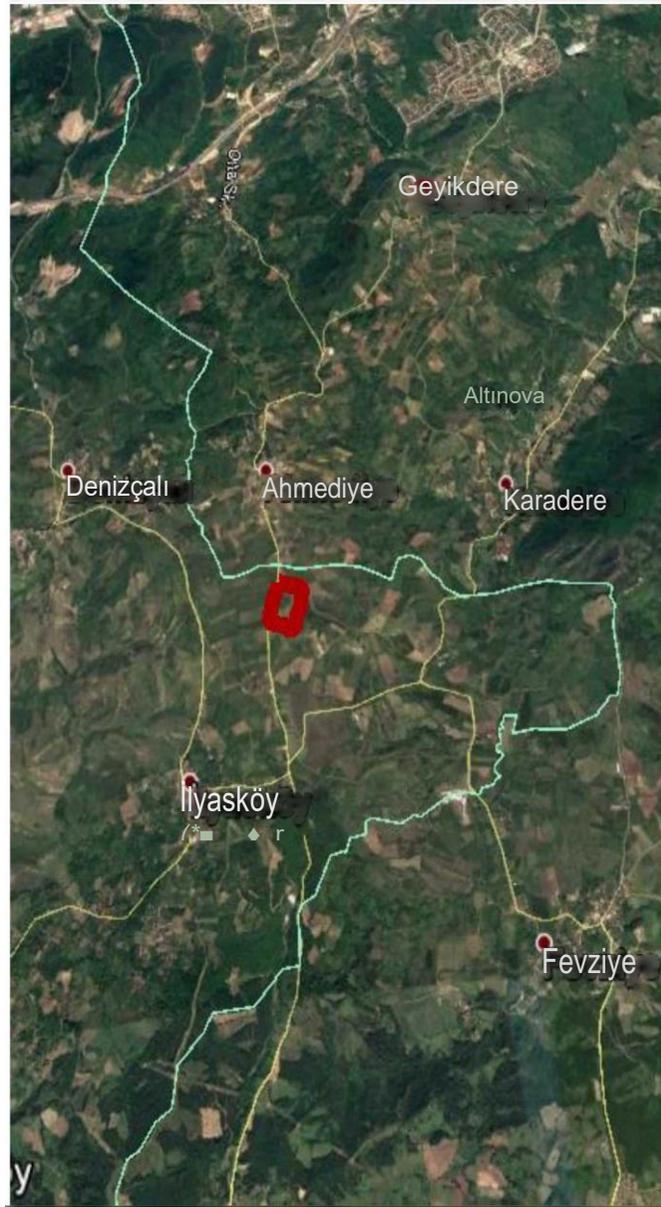
# **Annex-C Public Information Brochure and Minutes**

## Waste Disposal:

- Waste water generated by staff shall be discharged to the sewage system or in the absence of such a system waste waters shall be collected in impermeable septic tanks.
- Solid wastes on the construction site shall be separately collected in containers, which shall then be collected by the nearest municipality.
- Excavation debris to generate shall be used as filler material at the construction site. In the event of generation of excavation wastes, such wastes shall be disposed of in areas permitted by the municipality.

## Air Pollution

- New construction machinery shall be used as much as possible during the construction phase.
- ^Construction site shall be hydrated as required to prevent formation of dust and truck dumpers shall be covered during transport.
- ^Vehicles' exhaust emissions shall be regularly gauged.



**TEİAŞ General Directorate**  
**Department of Environment and Expropriation**  
Nasuh Akar Mah. Türkocağı Cad. No:2/14 Çankaya/ANKARA  
Tel : 0 312 203 86 11 Fax : 0 312 203 87 17

**TEİAŞ 2. Regional Directorate**  
Fethiye Mahallesi Bursa Organize Sanayi Bölgesi Sarı Cadde  
P.K.50 16140 Nilüfer/BURSA  
Tel: 0 224 243 13 30 Fax: 0 224 243 50 23



**TEİAŞ**

**Turkish Electricity Transmission Corporation**  
**General Directorate**  
**Department of Environment and Expropriation**



**380 kV ÇİFTLİKKÖY GIS SS (GAS  
INSULATED SUB-STATION)**

**PUBLIC INFORMATION BRO-**

**CHURE**

**PROVINCE OF YALOVA, ÇİFTLİKKÖY DISTRICT  
İLYASKÖY PRECINCT**

## Project Description and Objective

### Project Description

Availing of the WB loan, the project aims to erect the 380 kV Çiftlikköy GIS SS in the Province of Yalova, District of Çiftlikköy, İlyasköy Precinct (Lot 149, Parcels 1, 3, 4, 5, 22, 49, 50, 51, 52, 53, 54, 55, 58), which shall be connected to the National Interconnected System.

### Objective of the Project:

Çiftlikköy GIS Project has been designed to relay electrical power generated in WPPs and TPPs already available and which will be further erected in Southern Marmara and Western Anatolia regions safely and uninterruptedly to the transmission network, for further use by consumers in Kocaeli and the Anatolian Bank of İstanbul.

Furthermore, in consideration of the increasing consumer demand in Bursa and the expansion of OIZs in the area, the capacity of auto-transformers in the area shall increase to 70% of their respective capacities. Additional resources are required so as to reinforce the regional transmission system as well as to feed the existing 154 kV lines on the face of such an increasing demand. Accordingly, the Çiftlikköy 380 GIS has been planned, which shall be erected in Çiftlikköy, Yalova. Once the SS is in place, auto-transformers in Bursa East, Bursa Natural Gas and Bursa OIZ will be relieved.

### Project Stages

- Pre-survey and Lan Selection
- Preparation of the EIA and the EMP
- Receipt of Permits from Respective Authorities
- Construction (Facility)

## Environmental Impacts of the Project and Mitigations

GIS SS and its surroundings are surveyed to see the environmental impacts of the project.

### Design and Construction from Safety Perspective

The GIS SS shall be built without any damages on other infrastructure facilities as well as in observance of Regulations, Specifications and World Standards in effect. The 'Regulation on High Current Potential Facilities' shall be adhered to throughout all project, construction and operational stages of the project.

All equipment (transformers, breakers, separators, surge protectors, current voltage transformers, etc.) at the SS shall be supplied as per Electric Commission (IEC) 60076-10 Standards and subject to 'Type Tests,' 'Specific Tests,' 'Routine Tests' and 'Field Tests' during construction and commissioning. The SS shall be energized and commissioned following such tests.

The SS shall be fenced and walled-off so as to ensure controlled access and interventions as well as other measures for any negative impacts shall be in place. Also, the vicinity of the SS shall be fitted with adequate signage and climbing barriers.

### Noise:

- Construction works shall be carried out between 7 Am to / PM, during daytime.
- Construction machinery to be used shall be regularly inspected and maintained for observance of limit values as set forth in the regulation.

^Project shall seek to operate the minimum number of vehicles as much as possible.

### Electro-magnetic Field (EMF):

TEIAS complies with world standards in all projects, and all of the equipment it uses pass the international quality tests. While it is known that the project's EMF strength cannot exceed the established threshold values, Yıldız Technical University Faculty of Electrical and Electronics Engineering was hired to conduct electrical and magnetic measurements at the 380 kV Küçükbakkalköy GIS Substation, which is operational within the urban area of İstanbul, to relieve the concerns of the public and reassure them that international standards are complied with in executing the project.

As a result of the measurements conducted, it has been found that the measured values are below the threshold values of 5 kV/m and 160 A/m for strength of electrical field and magnetic field, respectively, for the continuously exposed general public at an operating frequency of 50 Hz as specified by ICNIRP (International Commission On Non-Ionizing Radiation Protection) (Source: Yıldız Technical University, 2014, Technical Report, İstanbul).

- The EAAA strength of the planned 380 kV Çiftlikköy GIS SS shall also remain below threshold values.

## MINUTES

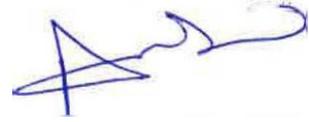
The public information brochure and the draft EMP for 380 kV Çiftlikk y GIS SS has been submitted to the İlyask y Mukhtar. This minutes has been signed on the date of 15.01.2019.

Delivered by:

İlyas SERPİL  


Recipient:

Recep G L EN  
İLYASK Y MUKHTAR



  
İLYAS K S

# **Annex-D Feedback Form and Visuals from the Meeting**

## TUTANAKTIR

Halkın bilgilendirilmesi, görüş ve önerilerini belirtmesi amacıyla tarafımıza broşürleri ve taslak çevre yönetim planları iletilen "380 kV Çiftlikköy GIS TM" projesi için;

	Herhangi bir geri dönüş olmamıştır.
X	Geri dönüşler aşağıdaki hususları kapsamaktadır. (İlgili evrak, dilekçe, belge vb.)

08.02.2019 tarihinde İlyasköy Köy Kurulunda yapılan görüşmeler neticesinde, köy sakinleri ve muhtarlık tarafından aşağıdaki hususlar talep edilmiştir:

- \* Serileri TM alanı tarım alanı olması, kullanıcılarının alternatif tarım yapabilecekleri yerlerinin alınması ve ilki köy merkezine yakın olması sebebiyle TM'nin yerinin değiştirilmesi istenmektedir.
- \* Alternatif olarak İlyasköy 122 ada 4 parsel rasu taşınmazın haceleneret deparlendirilmesi istenmektedir.
- \* Trofo merkez yapımı sonrası bağlanacak hatların köy merkezlerine yakın geçmesi sebebiyle can ve mal güvenliği açısından endişe bulunmaktadır.
- \* Trofo Merkezinin köy halkının karşı çıkması sebebiyle başka yere yapılması istenmektedir.

BÖLGE MÜDÜRLÜĞÜ PERSONELİ

İLGİLİ MUHTAR

  
**Burak OKUDUCU**  
Harita Mühendisi

  
**Eren KÖKTÜRK**  
Çevre Mühendisi

  
Eren KÖKTÜRK  
Harita ve Bölge Plancısı  
Etil: No:3189

  
İLYASKÖY MUHTARI  
Rıdvan GÜLÇEN

## TUTANAKTIR

Halkın bilgilendirilmesi, görüş ve önerilerini belirtmesi amacıyla tarafımıza broşürleri ve taslak çevre yönetim planları iletilen "380 kV Çiftlikköy GIS TM" projesi için;

Herhangi bir geri dönüş olmamıştır.
Geri dönüşler aşağıdaki hususları kapsamaktadır. (İlgili evrak, dilekçe, belge vb.)

\* Köy halkının maduniyeti giderilmeden projenin yapılması istenmektedir.

İşbu tutanak İlyasköy'de taraflarca 08.02.2019 tarihinde karşılıklı olarak imza altına alınmıştır.

Görüşmeye katılanlar:

Hüseyin SALKIN   
Feridun KALKAN  
Mehmet KAMAR  
Abdurrahman KAMAR  
Sait KAMAR  
Mehmut KAMAR  
Enver KAMAR  
Semsettin TOMAK 

BÖLGE MÜDÜRLÜĞÜ PERSONELİ

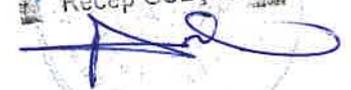
İLGİLİ MUHTAR

  
Burak OKUDUCU  
Harita Mühendisi

  
Eren KÖKTÜRK  
Çevre Mühendisi

  
Mustafa KAN  
Şehir ve Bölge Plancısı  
Çift. No: 2189

İLYASKÖY MUHTARI  
Recep GÜLÇEN













**ÇİFTLİKKÖY ZİRAAT ODASI**

KARŞIYAKA	YALOVA
07:00	08:00
07:20	10:00
08:00	11:00
09:00	13:00
10:00	15:00
11:00	16:15
13:00	17:00
15:00	17:30
17:00	19:00

The bulletin board contains several documents and notices. A large white sheet of paper is hanging from the top. Below it, there are several smaller documents, including a large one on the left and a multi-column one in the center. A small portrait of a man is visible in the top right corner of the board. The board is titled 'ÇİFTLİKKÖY ZİRAAT ODASI' (Çiftlikköy Farmers' Association).











# **Annex-E Visuals for the Web and Social Media Announcements**



## HABERLER



**Planlama ve Yatırım Yönetimi Daire Başkanı Serhat METİN Med-TSO Başkan Yardımcılığına Seçildi**  
Planlama ve Yatırım Yönetimi Daire Başkanı Serhat METİN Med-TSO Başkan Yardımcılığına Seçildi **Devamı**

13.12.2018

## DUYURULAR



Kapasite Mekanizması Aralık Ayı Faturaya Esas Ödeme Listesi **Devamı**

22.01.2019



TEİAŞ 380 kV Çiftlikköy GIS TM Projesi Bilgilendirme **Devamı**

21.01.2019



Kullanıcı taleplerinin elektronik ortamda alınmasını sağlayan E-Müşteri Sistemi hizmete açıldı. **Devamı**

17.01.2019

## ETKİNLİKLER



3 Aralık Dünya Engelliler Günü Münasebetiyle Öğle Yemeği Etkinliği Düzenlendi **Devamı**

05.12.2018



Genel Müdürlüğümüz tarafından düzenlenen 2018 Yılı Birimler Arası Futbol Turnuvası şampiyonu Yüksektezi takımı o... **Devamı**

23.11.2018



TEİAŞ Gölbaşı Sosyal Tesisleri'nde çocuk ve gençlere yönelik futbol turnuvası final karşılaşmaları ve kupa tö... **Devamı**

22.06.2018

## DUYURULAR

### TEİAŞ 380 KV ÇİFTLİKKÖY GIS TM PROJESİ BİLGİLENDİRME

TEİAŞ 380 KV Çiftlikköy GIS TM projesi ile ilgili broşür ve taslak ÇYP dokümanı Yalova İli, Çiftlikköy İlçesi, İlyasköy Muhtarlığı'nda görüşe açılmış olup, yorumlarınızı, fikirlerinizi sahada muhtarlığa, ilgili TEİAŞ Bölge Müdürlüğüne veya TEİAŞ Çevre ve Kamulaştırma Dairesi Başkanlığı'na iletebilirsiniz. Dokümanı bu web sayfasından da indirebilirsiniz.

📄 Çiftlikköy GIS Broşür

📄 Çiftlikköy GIS Taslak ÇYP

### DiĞER DUYURULAR

#### KAPASİTE MEKANİZMASI ARIKLIK AYI FATURAYA ESAS ÖDEME LİSTESİ

Kapasite Mekanizması Aralık Ayı Faturaya Esas Ödeme Listesi [Devami](#)

#### E-MÜŞTERİ SİSTEMİ HİZMETE AÇILDI

Kullanıcı taleplerinin elektronik ortamda alınmasını sağlayan E-Müşteri Sistemi hizmete açıldı.

[Devami](#)

#### 2018 LİSANSIZ SANTRALLER YILLIK SORU FORMLARI

2018 Lisanssız Santraller Yıllık Soru Formları

[Devami](#)

The screenshot shows the TEİAŞ Twitter profile page. The profile name is TEİAŞ (@kurumsalTEIAS) and the bio is 'Türkiye Elektrik İletim A.Ş. Resmi Twitter sayfasıdır. "Enerjinin Gücü"'. The profile location is Ankara, Türkiye, and the website is teias.gov.tr. The profile was created in July 2017 and the user was born in October 2001. There are 140 photos and videos. The tweet shown is from 21 hours ago, stating: 'TEİAŞ 380 KV Çiftlikköy GIS TM Projesi bilgilendirme duyurusuna ve ilgili dokümanlara web sitemizden ulaşabilirsiniz: teias.gov.tr #TEIAS'. The tweet includes a link to the project information page and a quote: 'TEİAŞ 380 KV Çiftlikköy GIS TM projesi bilgilendirme duyurusuna ve ilgili dokümanlara web sitemizden ulaşabilirsiniz.' The tweet has 1 reply, 18 likes, and 1 retweet. The profile also shows a 'Tweet etkinliği' (Tweet activity) section with a bar chart showing 9,469 impressions over the last week. There is also a 'Kimi takip etmeli' (Who to follow) section with recommendations for Petroturk.com, Elektrik Üretim A.Ş., and ELDER.



kurumsalteias

Profil Düzenle

107 gönderi 2.117 takipçi 0 takip

Türkiye Elektrik İletim A.Ş.  
Resmi Instagram Hesabı  
'Enerjinin Gücü'  
www.teias.gov.tr



Arıza Bakım



Canlı Bakım



Kış Çalışma...



Kış Çalışma...



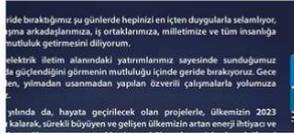
Kış Çalışma...

GÖNDERİLER

IGTV

KAYDEDİLENLER

ETİKETLENENLER





Türkiye Elektrik  
İletim A.Ş.

@kurumsalTEIAS

Ana Sayfa

Gönderiler

Hakkında

Fotoğraflar

Videolar

Topluluk

Bilgiler ve Reklamlar

Sayfa Oluştur

Beğen Paylaş Mesaj Gönder



Türkiye Elektrik İletim A.Ş.

21 saat ·

TEİAŞ 380 kV Çiftlikköy GIS TM Projesi bilgilendirme duyurusuna ve ilgili dokümanlara web sitemizden ulaşabilirsiniz: [www.teias.gov.tr](http://www.teias.gov.tr) #TEIAS

## ÇEVRE YÖNETİM PLANI (ÇYP) BİLGİLENDİRME

“ TEİAŞ 380 kV Çiftlikköy GIS TM projesi bilgilendirme duyurusuna ve ilgili dokümanlara web sitemizden ulaşabilirsiniz. ”

[www.teias.gov.tr](http://www.teias.gov.tr)



[www.teias.gov.tr](http://www.teias.gov.tr)

Beğen

Yorum Yap

Abduselam Genç, Tayfun Toprakçı, Mustafa Hayırlı ve 99 diğer kişi En Alakalı bunu beğendi.

4 Paylaşım

1 yorumu gör

Tümünü Gör

Mesaj Gönder

Kişiler

7.063 beğenme  
499 ziyaret

İlgili Sayfalar



Yüksek Gerilim Mühendisliği Por...  
Enerji Şirketi



İŞLETME TEKNİSYENLERİ (TAB...  
Kuruluş



Türkiye Elektrik İletim 20. Bölge ...  
Devlet Kurumu



Çiftay İnşaat Taahhüt ve Ticaret ...  
İnşaat Şirketi



Enerji Bir-Sen  
Sivil Toplum Örgütü

Diğerlerini Gör

Yerler Çankaya, Ankara Türkiye Elektrik İletim A.Ş.

Türkçe · Kurdî (Kurmancî) · العربية · English (UK) · Español

+

Gizlilik · Koşullar · Reklamlar · Ad Choices · Çerezler · Diğer · Facebook © 2019

## **Annex-F Site Dimensions**



# **Annex-G Flora-Fauna Study of the Project Site**



## Flora and Fauna

The flora of the project site and the impact area have been determined through site observations and literature review. Field work has been carried out by Mr. Tolga Çetinkaya, biologist, during the vegetation period of July.

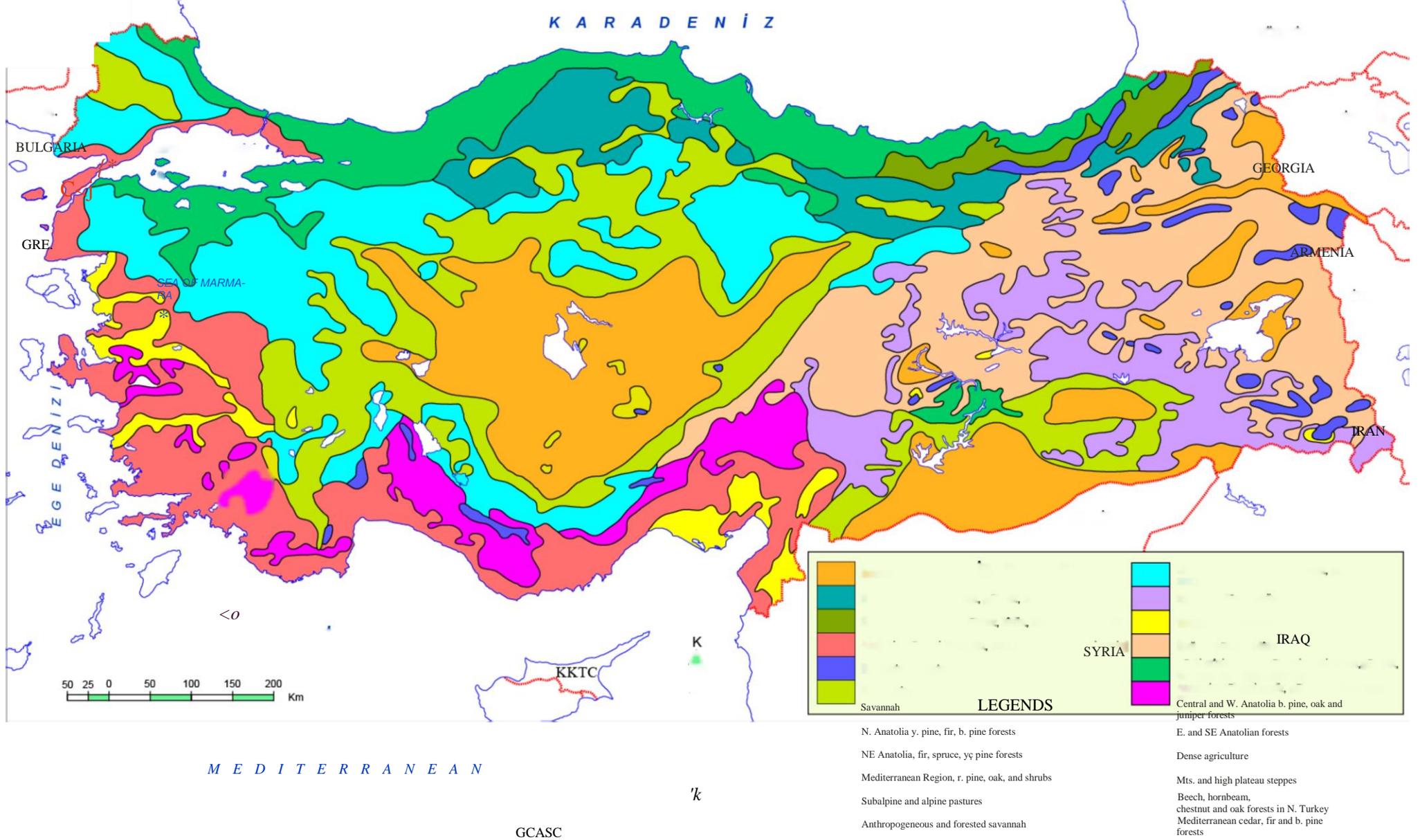
Floristic work has been carried out in an area with a diameter of 1000 m including the project site and the area of impact.

Books, "Türkiye bitkileri kırmızı kitabı" "Flora of Turkey and East Aegean Islands (Davis, 1965-1985; Davis et al. 1988)", "Türkiye Orman Vejetasyonu" (Y. Akman) and the "Türkçe Bitki Adları Sözlüğü" (T. Baytop) have been the literature sources of the floristic works carried out for the project. Also, within the scope of the said project and in relation with the flora to be negatively effected inside and around the project site, information at <https://www.tubives.com>. <https://bizimbitkiler.org.tr> ave been availed.

Accordingly, vegetation and plants in the project area and the area of impact have been investigated as per BERN and IUCN classifications as well as endemism, and species found in the area have been provided in the table below.

The dominant flora of the region is composed of deciduous forests covering central and southern slopes and valleys. Similarly, among the pine vegetation at higher elevations and steep slopes some clearings and replanted areas can be seen, alluding to the fact that these were cleared for commercial timber production. These pine forests include a significant amount of coniferous species. High and steep slopes in areas closer to shore are covered with shrubs and rocks, the flora of which mainly consists of thick shrubs and rocky ground. Agricultural activities can still be encountered on relatively steep areas, plateaus and valley shoulders.

A flora characterized by a transitory climate dominates the area and its surroundings, which is geographically categorized as a transitory field between Euro-Siberian and Turano-Iranian phyto-geographical regions. In these fields, significant amounts of vegetables and fruits are produced. In the project area, also, there are significant numbers of cultivated land and orchards/gardens.

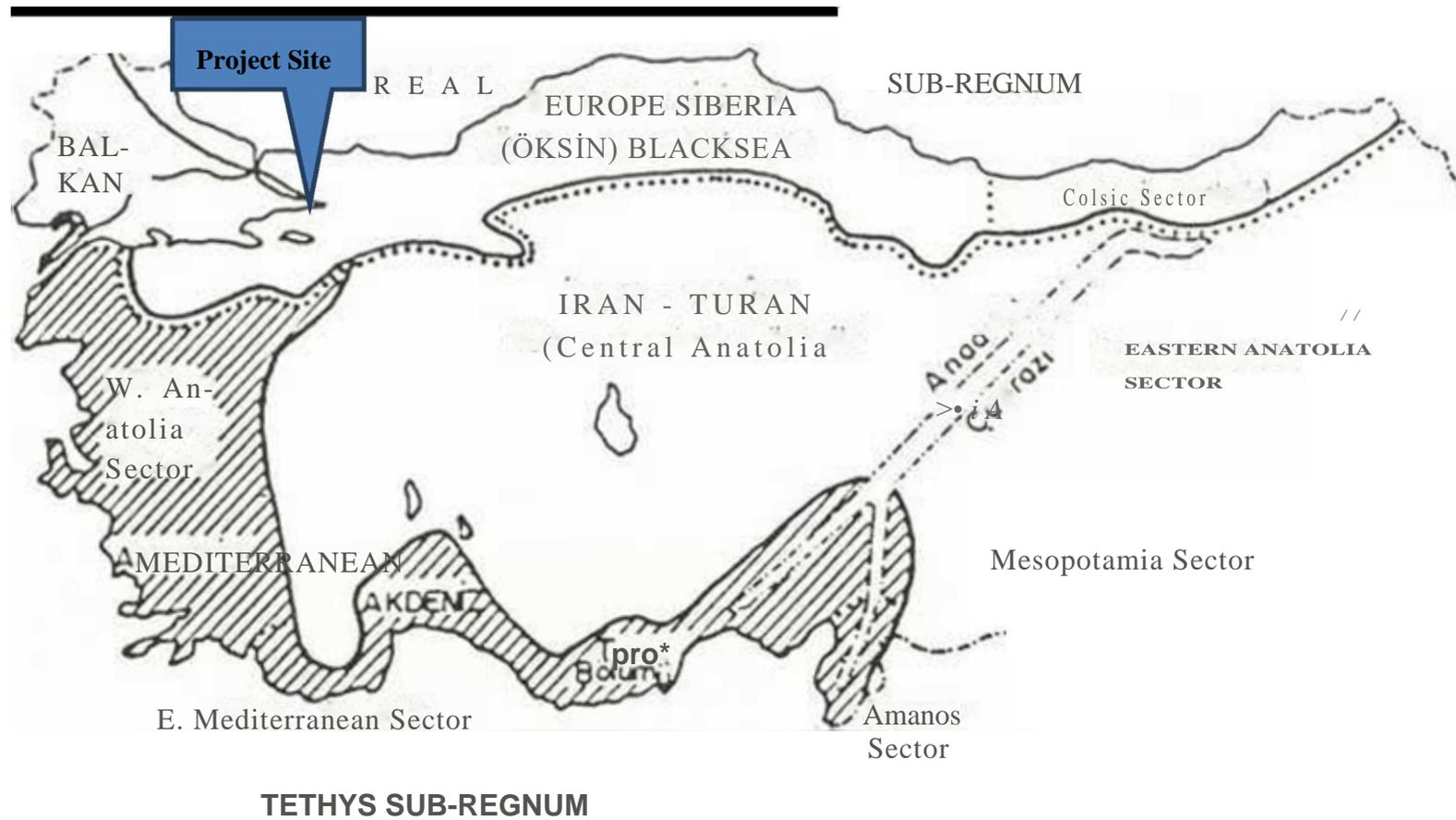


Source: H. GÖKMEN 1962 Citation İ. ATALAY 1983

### TURKEY'S FLORA MAP

R.SAYGILI 2013

Figure 1: Turkey's Flora Map



## Phyto-geographical Regions of Turkey

Figure 2: Flora Zones of Turkey



The categories and the definitions of abbreviations used in the determination of such categories provided in the The Red List prepared by the IUCN with the aim to classify species with a high risk of extinction are as follows: This classification seeks to draw attention on plants and animals facing the risk of extinction on a global scale. IUCN List of Protection Statuses:

EX	: Extinct	VU	: Vulnerable
EW	: Extinct in the Wild	LR	: Low Risk
CR	: Critical Risk	a-(cd)	: Requires Protective
EN	: Endangered	b- (nt)	: Can be Under Threat
DD	: Data Deficient	c- (lc)	: Least Concern
NE	: Not Evaluated		

- EX (EXTINCT - Extinct): Species proven to be extinct.
- EW (EXTINCT IN THE WILD - Extinct in its natural habitat): Species extinct in the wild but still exist for reproduction or exhibition purposes.
- CR (CRITICALLY ENDANGERED - Critically Endangered): Species facing high and imminent risk of extinction unless measures are in place.
- EN (ENDANGERED - Endangered): Species facing lesser threat of extinction than category CR.
- VU (VULNARABLE - Vulnerable): Species to face extinction in the medium-term in the wild.

LR (LOWER RISK - Under Lesser Risk): Plants that do not fall in any of the above categories and the population of which thrive better are placed in this category. Those with significantly thriving populations, which are known at least five locations are in this category. There are three sub-categories per future threats:

NT (NEAR THREATENED - Near Threatened): Candidates excluded from the previous group but that can soon be categorized as VU.

- LC (Least Concern-Least Concern): Those that do not require any protection and that are not under threat.
- CD (Conservation Dependent): Those, the taxon of which will be included in one of the categories above in a matter of five years that require a special protection status for both the species and the habitat.
- DD (DATA DEFICIENT - Deficient Data): In cases where information on a particular taxon is insufficient, that taxon falls in this category.

### Central Hunting Commission

In line with the decision of the Central Hunting Commission for 2019-2020 effective following its publication in the Official Gazette No. 30808 dated 21.06.2019, the Annex Lists I and II have been published to regulate issues pertaining to the protection of game and wild animals, the prohibition of hunting thereof as well as determination of the hunting period for those the hunting of which is permitted. Clarifications in the Annex Lists of the Central Hunting Commission Decision are as follows.

Annex Lists of the Central Hunting Commission:

<b>Annex List I:</b>	<b>Game Animals Placed Under Protection by the Central Hunting Commission</b>
<b>Annex List II:</b>	<b>Game animals the hunting of which has been temporarily permitted by the Central Hunting Commission</b>

Bern Convention

BERN Convention (European Convention on the Protection of Wild Life and Habitats) is an international convention seeking to protect flora and fauna that are or can be endangered, prioritizing migrant species over others, as well as to protect the habitats thereof through enhanced cooperation among several states.

In line with the provisions of this Convention, parties shall handle endangered species or those under threat of extinction and especially endemic species with utmost caution and establish national policies for the protection of wild flora and fauna habitats. Bern Convention strictly bans, deliberate damaging, collection, cutting or reproduction of flora species under protection.

Annexes of the Bern Convention:

Annex I: Flora species under strict protection Annex II: Fauna species under protection Annex III: Fauna species already under protection Annex IV: Restricted methods of catching and killing animals.
--

Being subject to IUCN Categories and the Bern Convention, fauna and flora species identified inside and in immediate vicinity of the project site have been provided in Tables below.



<b>Amaranthaceae</b>	<i>Amaranthus retroflexus</i>	Tilki kuyruğu	-	-	-	X							X	-	L
<b>Malvaceae</b>	<i>Malva sylvestris</i>	Ebegümece	-	-	-		X						X	-	G
<b>Geraniaceae</b>	<i>Erodium cicutarium</i> subsp. <i>cicutarium</i>	Turna gagası	-	-	-	X	X						X	-	G
	<i>Geranium molle</i>	Turna gagası	-	-	-	X	X							-	L
	<i>Cytisus hirsutus</i>	Keçi tirfili	-	-	-	X	X							-	L
<b>Fabaceae</b>	<i>Dorycnium hirsutum</i>	Kıllı kaplanotu	-	Akd. ele.	-	X	X							-	L
	<i>Medicago lupulina</i>	Yonca	-	-	-								X	-	L
	<i>Onobrychis caput-galli</i>	Korunga	-	Akd. ele.	-								X	-	L
	<i>Robinia pseudoacacia</i>	Yalancı akasya	-	-	-	X	X							-	L
	<i>Trifolium campestre</i>	Üçgül	-	-	-					X				-	L
<b>Rosaceae</b>	<i>Agrimonia repens</i>	Yer fitkotu	-	-	-					X					L
	<i>Prunus x domestica</i>	Erik	-	-	-					X					G
	<i>Mespilus germanica</i>	Muşmula		Karadeniz (Öksin) ele.			X							Lc	L
	<i>Potentilla argentea</i>	Beşparmak otu	-	-	-					X	X			-	L
	<i>Rosa canina</i>	Gül	-	-	-	X							X	-	L
	<i>Rubus canescens</i> var. <i>canescens</i>	Böğürtlen	-	-	-	X							X	-	L
<b>Apiaceae</b>	<i>Berula erecta</i>	Gendeme	-	-	-					X				-	L



	<i>Caucalis platycarpos</i>	Kavkal	-	-	-					X				-	L
	<i>Daucus carota</i>	Havuç	-	-	-		X						-	-	L
	<i>Eryngium campestre</i> var. <i>campestre</i>	Çakırdikeni	-	-	-						X			-	L
<b>Asteraceae</b>	<i>Antemis cretica</i> subsp. <i>pontica</i>	Papatya	-	-	-					X				-	G
	<i>Anthemis tmctona</i> var. <i>discoidea</i>	Sarı papatya	-	-	-	X								-	L
	<i>Echinops ritro</i>	Topuz	-	-	-					X					G
	<i>Bellis perennis</i>	Koyungözü	-	Avr.-Sib. ele.	-	X								-	L
	<i>Carlina corymbosa</i>	Kırkbaşdikeni		Akd. ele.			X								L
	<i>Crepis smyrnaea</i>	Hindiba	-	Akd. ele.	-					X				-	L
	<i>Inula salicina</i>	Anduz otu	-	Avr.-Sib. ele.	-	X								-	L
	<i>Sonchus asper</i> subsp. <i>glaucescens</i>	Eşek marulu	-	-	-						X			-	L
<b>Thymelaeaceae</b>	<i>Daphne pontica</i>	Yalancı defne	-	Öksin ele.	-		X							-	L
<b>Juglandaceae</b>	<i>Juglans regia</i>	Ceviz	-	-	-	X			X						G
<b>Scrophulariaceae</b>	<i>Verbascum sinuatum</i> var. <i>sinuatum</i>	Sığırkuyruğu	-	Akd. ele.	-		X							-	L
	<i>Veronica arvensis</i>	Yavşan otu	-	Avr.-Sib. ele.	-	X	X							-	L
<b>Boraginaceae</b>	<i>Heliotropium europaeum</i>	Akrep otu	-	Akdeniz	-				X					-	G

<b>Lamiaceae</b>	<i>Stachys cretica subsp. anatolica</i>	<b>Dağçayı</b>	-	<b>Ir.-Tur. ele.</b>	-	X									-	<b>L</b>
<b>Plantaginaceae</b>	<i>Plantago lanceolata</i>	<b>Sinir otu</b>	-	-	-		X				X				-	<b>L</b>
<b>Fagaceae</b>	<i>Quercus infectoria subsp. infectoria</i>	<b>Meşe</b>	-	<b>Avr.-Sib. ele.</b>	-		X								<b>Lc</b>	<b>L</b>
	<i>Quercus robur subsp. robur</i>	<b>Saplı Meşe</b>	-	-	-		X								<b>Lc</b>	<b>G</b>
<b>Guttiferae</b>	<i>Hypericum perforatum</i>	<b>Binbirdelik otu</b>	-	-	-					X						<b>G</b>
<b>Poaceae</b>	<i>Aegilops umbellulata subsp. umbellulata</i>	<b>Hanım Buğdayı</b>	-	<b>Ir.-Tur. ele.</b>	-		X			X	X				-	<b>L</b>
	<i>Briza media</i>	<b>Kuş ekmeği</b>	-	-	-						X				-	<b>L</b>
	<i>Bromus hordeaceus subsp. hordeaceus</i>	<b>Başak otu</b>	-	-	-					X					-	<b>L</b>
	<i>Chrysopogon gryllus subsp. gryllus</i>	<b>Buzbağiotu</b>	-	-	-						X				-	<b>L</b>
	<i>Cynodon dactylon var. dactylon</i>	<b>Köpekdişi</b>	-	-	-							X			-	<b>L</b>
	<i>Dactylis glomerata subsp. hispanica</i>	<b>Ayrık</b>	-	-	-							X			-	<b>L</b>
	<i>Lolium perenne</i>	<b>Çim</b>	-	<b>Avr.-Sib. ele.</b>	-	-		X			X				-	<b>L</b>

Note: Types of Habitat :1- Forest, 2- Shrub, 3- Phrygana, 4- Cultivated Areas (Vineyards, orchards, etc.), 5- Dry Meadows, 6- Wet Meadows, marsh and wetlands, 7- Road-side, ruderal 8- Rocky

Source: <http://turkherb.ibu.edu.tr/> (Türkiye Bitkileri Veri Servisi- TUBİVES) Baytop T., 1994, Türkçe Bitki Adları Sözlüğü, TDK, Ankara [www.iucnredlist.org](http://www.iucnredlist.org)  
Acronyms: LC: Lowest Conct. Endangered / Endmk: endemic species / MAK: Central Hunting Comm. List of Prot. Species / BERN: European Convention On the Protection of Wildlife and Habitats / IUCN: Intenational Union for the Conservation of Nature

## Flora Assessment of the Project Site

As a result of land surveys and literature reviews performed in relation with the project site, a total of 55 plants taxa from 23 families with likely encounter in the habitat have been identified and the Turkish names, families, taxa, endemism, IUCN status, BERN status and habitats have been listed in Table X.

During literature review, species under BERN convention have not been encountered in the project area. Rare and endangered species as well as those that have to be placed under protection as per BERN convention Annex-1 have not been found in the project area and its vicinity.

If scraping is performed on project site during the maturation of soil, this will help matured seeds to drop. As such, there will be no need to collect seeds or to transport species to similar habitats.

Since the project does not involve any endangered species and the vegetation in the area is repetitive within the larger region, there is no need to monitor species specified in the Flora Chart.



**Photo 1:** *Anthemis cretica subsp. pontica* (Cammomile)



**Photo 2:** *Convolvulus arvensis*



**Photo 3:** *Heliotropium europaeum*



**Photo 4:** *Echinops ritro*



**Photo 5 :** *Prunus x domestica*





**Photo 6:** *Rubus canescens* var. *canescens* (Bögürtlen)



**Photo 7:** *Sinapis arvensis* (Hardal)



**Photo 6:** *Quercus robur* subsp. *robur*



**Photo 7:** *Juniperus oxycedrus* subsp. *oxycedrus*





**Photo 10:** *Hypericum perforatum*



**Photo 11:** *Malva sylvestris*



**Photo 12:** *Juglans regia*

## FAUNA

Field study and literature review has been performed with the aim to determine fauna species living or that can possibly be encountered in the projects area and its surroundings. Animal species identified as a result of this work are given below. The level of threat for each of the species specified has been determined per ERL prepared by the IUCN and the Annex Lists prepared in line with the Central Hunting Commission Decisions Concerning the Hunting Period 2019-2020 under the GD for the Protection of Nature and National Parks, the Ministry of Agriculture and Forestry, where, also, tables on protection statuses are prepared in observance of the provisions of the Bern Convention.

### AMPHIBIA

Amphibians are a species that could neither adapt to life on land nor leave life in fresh waters entirely. Almost all amphibians require water or damp places to reproduce. They can live both on land and in water, hence the name Amphibia (Gr. double-lived). Amphibians cannot stand aridity nor salinity. <http://www.herpamura.org/>

Amphibians are the foremost predators of invertebrates that, in general, feed on aquatic insects and larvae as well as winged-insects, worms and molluscs on land.

Amphibian life functions mostly rely on water. Ovipar (vertebrates reproducing via laying eggs) amphibians mostly lay their eggs in natural areas or in ponds that result from floods or rain as well as sticking their eggs on aquatic plants. Amphibians living on land also lay their eggs in water.

Being cold-blooded animals with unprotected skins, which causes significant dehydration, amphibians are not resistant to excessive temperatures, salinity or aridity. Aquatic amphibians prefer the bottom of lakes or streams that do not freeze for hibernation whereas terrestrial amphibians choose pits under rocks and stones.

Research carried out at and around the project site revealed two species of amphibians the families, scientific and Turkish names of which have been given in Table XX. An assessment of the two highly-likely species of amphibians to be encountered in the area of activity from the IUCN perspective reveals that Bufo Bufo (Siğilli Kurbağa) among these species is categorized as LC (Least Concern).

Both species, as per the Bern Convention, are categorized as Annex III.

**Table XX: Amphibia Highly-likely to be Encountered in the Project Site and the Area of Impact as of the Habitat Thereof,**

TAX-FAMILY/SPECIES	TURKISH	HABITAT	MAK	IUCN	BERN	SOURCE
<b>Tax: Anura</b>						
<b>Fam: Bufonidae</b>						
<i>Pseudepidalea variabilis</i>	Gece kurbağası	Waterside, pastures, fields	-	Dd	Annex III	L
<i>Bufo Bufo</i>	Sığilli Kurbağa	Stony, rocky areas, pastures	-	Lc	Annex III	L

Source: Demirsoy, A., 2003, Türkiye Omurgalıları "Amfibiler", Ministry of Environment, General Directorate for the Protection of Nature, Project No: 90-K-1000-90. Ankara, Baran, İ, 2005, "Türkiye Amfibi ve Sürüngenleri", Ankara, <http://www.turkherptil.org/ilPortfolylari>

Acronyms: LC: Lowest Conct. Endangered / Endmk: endemic species / MAK: Central Hunting Comm. List of Prot. Species / BERN: European Convention On the Protection of Wildlife and Habitats / IUCN: Intenational Union for the Conservation of Nature

#### REPTILIA: (Species of Turtles, Reptiles, and Snakes)

In the area a total of ten such species have been identified, one of which a turtle, seven reptiles and two snakes.

Reptilians, being carnivorous in general, feed on amphibians, worms, rodents, various larvae, insects and sometimes on their own species. Some reptiles and turtle living on land feed on leaves and flowers of plants. Reptiles that generally reproduce by laying eggs normally lay their eggs underground, rotten barks and carpets of leaves as well as under sunny undersides of stones. Since metamorphosis is not the case for reptilians, hatchlings are normally like miniatures of their parents, immediately going after food after they come out of their eggs.

Reptiles and snakes hibernate alone or in groups under stones, or inside remnants or roots of plans as well as in suitable pits.

Habitats with the likelihood of encountering reptilians during the project have been observed and likely-to-encounter-species have been determined also through literature review, then all findings have been analyzed into a table.

In line with the assessment carried out from the IUCN perspective based on the RDB (European Red Book), 7 of the species are categorized as LC, one species (*Testudo graeca-Adi toşbağa*) as VU, which put them in the Bern Convention Annex II as strictly protected fauna. Also, another 4 species are categorized as Annex III (fauna under protection).

**Table XX: Reptilia Highly-likely to be Encountered in the Project Site and the Area of Impact as of the Habitat Thereof,**

TAXON/FAMILY OR SPECIES	TURKISH	HABITAT	MAK	IUCN	BERN	SOURCE
<b>Tax:TESTUDİNATA</b>	<b>Kaplumbağalar</b>					
<b>Fam:Testudinidae</b>						
<i>Testudo graeca</i>	Tosbağa	Forest clearings, roadside, aquatic		Vu	An-nex II	L
<b>Tax: SQUAMATA</b>	<b>Pullular</b>					
<b>Fam: Gekkonidae</b>	<b>Ev kelerleri</b>					
<i>Mediodactylus kotschy</i>	İnce Parmaklı Keler	Open slopes	-	Lc	An-nex II	L
<b>Fam:Scincidae</b>	<b>Parlak kertenkeleler</b>					
<i>Ablepharus kitaibelii</i>	İnce Kertenkele	Forests, stony, rock land	-	Lc	An-nex	L
<b>Fam:Lacertidae</b>	<b>Kertenkeleler</b>					
<i>Podarcis muralis</i>	Duvar Kertenkelesi	Open slopes Stony, rocky areas	-	Lc	An-nex II	L
<i>Ophisops elegans</i>	Tarla Kertenkelesi	Fields and shrubs	-	Lc	An-nex	L
<b>Fam: Anguidae</b>	<b>Y ilan Kertenkelegiller</b>					
<i>Anguis fragilis</i>	Y ilan kertenkelesi	Roadside, Pastures	-	-	An-nex	L
<i>Pseudopus apodus</i>	Oluklu Kertenkele	Open slopes, valley shoulders, stony grounds			An-nex II	L
<b>Fam: Typhlopidae</b>	<b>Kör Y ilanlar</b>					
<i>Xerotyphlops vermicularis</i>	Kör yılan	Under stones	-	Lc	An-nex	L
<b>SUBTAX.: OPHIDIA</b>	<b>Yılanlar</b>					
<b>Fam:Colubridae</b>	<b>Vipers</b>					
<i>Eirenis modestus</i>	Uysal yılan	Loose shrub, stony grounds	-	Lc	An-nex II	L
<i>Zamenis situla</i>	Ev Yılanı	Forests, vineyards, orchards/gardens	-	Lc	An-nex II	L

**Source:** Demirsoy, A., 2006, Türkiye Omurgalıları "Sürüngenler", Ministry of Environment

GD for the Protection of Environment

Project No: 90-K-1000-90. Ankara. Baran, İ, 2005, "Türkiye Amfibi

ve Sürüngenleri",

Ankara.

**Acronyms:** VU: / LC: / DD: / NT: / Endemic: , MAK: / BERN / IUCN

## KUŞLAR (AVES)

Birds have been evaluated as per RDB categories and their protection status per BERN Convention and MAK Annex Lists. During the preparation of this Table the latest updated and effective versions of the BERN criteria undersigned by many European states as well as Turkey, the continuously updated ERL and *the Red Data Book for Turkish Bird Species* by Kizir-ođlu have been availed of.

Birds are migratory animals with high mobility and some species of which are local. Being air travelers, birds are easier to locate and observe in comparison with snakes, reptiles and mammals.

Birds can be encountered around pools resulting from rain water, reedbeds and marshy/swampy areas, in proximity of settlements and water canals. The rich eco-system also reflects upon biodiversity, especially that of bird species.

All of the bird species, in the Table prepared in observance of the general population status in Europe and in line with the IUCN risk status, are categorized as LC.

19 species are Annex List II species per BERN Convention and 6 fall under Annex List III. Of the species in the Table, 15 are categorized as L, i.e. local.

**Table XX: Aves (birds) Highly-likely to be Encountered in the Project Site and the Area of Impact as of the Habitat Thereof,**

SCIENTIFIC NAME	TURKISH	HABITAT	LOCATION	RDB		BERN	U s ^ u s	SOURCE
<b>Accipitridae</b>								
<i>Accipiter nisus</i>	Atmaca	Vast pastures and savannah	Y	A.3	LC	An-nex II		L
<i>Buteo buteo</i>	Şahin	Open and agricultural lands, pastures and forests	Y	A.3	LC	An-nex II		L
<i>Buteo rufinus</i>	Kızıl şahin	Savannah, agricultural	Y	A.3	LC	An-	-	L
<b>Apodidae</b>								
<i>Apus apus</i>	Ebabil	OPEN AREAS AND SETTLEMENTS	T	A.3.1	LC	An-nex III		L
<b>Charadriidae</b>								
<i>Vanellus vanellus</i>	Kızkuşu	OPEN CULTIVATED LAND, RICE PADDIES	KZ	A.5	LC	An-nex III	An-nex I	L
<b>Columbidae</b>								
<i>Columba livia</i>	Kaya güvercini	Meadows, fields and rocky terrain	Y	A.5	LC	An-nex III	An-nex II	G
<i>Streptopelia decaocto</i>	Kumru	Meadows, pastures,	Y	A.5	LC	An-	An-	G
<b>Falconidae</b>								
<i>Falco columbarius</i>	Bozdoğan	Forest clearings, swamps	KZ	B.1.2	LC	An-nex II		L
<i>Falco tinnunculus</i>	Kerkenez	Forests, savannah, agricultural land	Y	A.2	LC	An-nex II		L
<b>Phasianidae</b>								
<i>Alauda arvensis</i>	Tarlakuşu	Farms, highlands, pastures	KZ	A.4	LC	An-nex	An-nex I	L
<i>Calandrella brachydactyla</i>	Bozkırtoygarı	Fields, semi-deserts and sand-dunes	Y	A.3	LC	An-nex II		L
<i>Galerida cristata</i>	Tepeli toygar	Fields	Y	A.3	LC	An-nex	An-nex I	L
<i>Melanocorypha calandra</i>	Boğmaklı toygar	Pastures, lowland savannah with shrubs	Y	A.5	LC	An-nex II		L
<b>Cisticolidae</b>								
<i>Cisticola juncidis</i>	Yelpazekuyruk	Meadows, pastures,	Y	A.2	LC	An-	-	L
<b>Corvidae</b>								
<i>Corvus corone</i>	Leş kargası	Afforested agricultural land, gardens/orchards	Y	A.5	LC		An-nex II	G
<i>Corvus frugilegus</i>	Ekin kargası	Vast agricultural land, plains, meadows	Y	A.5	LC		An-nex II	L
<i>Pica pica</i>	Saksağan	Agricultural land and light forests	Y	A.5	LC		An-nex II	G
<b>Hirundinidae</b>								
<i>Hirundo rustica</i>	Kırkırlangıcı	Agricultural land and light forests	YZ	A.5	LC	An-nex II		L

<i>Lanius collurio</i>	Kizilsırtlı örümcekkuşu	Shrubs and open land	YZ	A.3	LC	An-nex II	An-nex I	L
<b>Motacillidae</b>								
<i>Anthus campestris</i>	Kır incirkuşu	Highlands or dense shrubs	YZ	A.2	LC	An-nex II		L
<i>Anthus pratensis</i>	Çayirincirkuşu	Deforested open land	KZ	A.3	LC	An-	-	L
<i>Anthus trivialis</i>	Ağaç incirkuşu	Light forests and shrubs	T	A.3	LC	An-nex II		L
<b>Muscicapidae</b>								
<i>Erythropygia galactotes</i>	Çalıbülbülü	Gardens/orchards, olive orchards	YZ	A.3	LC	An-nex II		L
<i>Irania gutturalis</i>	Taşbülbülü	Heath and rocky shrubs	Y	A.1.2	LC	An-nex II		L
<i>Oenanthe finschii</i>	Aksırtlı kuyrukkakan	Deforested open land	Y, Y	A.1.2	LC	An-nex II		L
<i>Oenanthe hispanica</i>	Karakulaklı kuyrukkakan	Shrubs and shrubby slopes	YZ	A.2	LC	An-nex II		L
<b>Passeridae</b>								
<i>Passer domesticus</i>	Serçe	Gardens/orchards, parks	Y	A.5	LC	-	An-	G
<b>Sylviidae</b>								
<i>Sylvia communis</i>	Akgerdanlı ötleğen	Open and agricultural land	T	A.3	LC	An-nex II		L
<i>Sylvia curruca</i>	Küçük akgerdanlı ötleğen	Forests, parks, gardens/orchards	YZ	A.2	LC	An-nex II		L
<i>Sylvia melanocephala</i>	Maskeli ötleğen	Shrubs, gardens, orchards	KZ	A.3	LC	An-nex II		L

**Source:** Kızıroğlu, İ., 2008, "Türkiye Kuşları" (Species List in Red Data Book), Ankara. [www.trakus.org](http://www.trakus.org).  
[www.iucnredlist.org](http://www.iucnredlist.org), <http://www.trakus.org/> [www.iucnredlist.org](http://www.iucnredlist.org)

**Acronyms:** VU / LC / DD / NT / Endemic, MAK / BERN / IUCN

In line with the study 'Birds of Turkey' (Kızıroğlu, 2008) the RDB classification for birds likely to encounter on project site and their status in Turkey are given below.

I. Category A birds, i.e. birds that hatch in Turkey are local perennial species, or summer migrants that leave Turkey after hatching.

A. 1.0: Species undoubtedly on the way to extinction that are no longer encountered in the wild.

A. 1.1: Species with lost population that rely on human support to survive.

A. 1.2: Species the population of which has significantly reduced in Turkey. For their species is under significant threat, these are species that need protection. A.2 Species under significant threat of extinction.

A.3: Species that are sensitive to extinction, also with a high risk of extinction in the wild.

A.3.1: Species that are dwindling compared to previous records.



A.4: Species experiencing local reduction in population, which are close to face the risk of extinction.

A.5: Species with surviving populations that do not risk extinction.

A.6: Species that have not been adequately studied and sound data on which is not available.

A.7: An assessment of these species is not possible due to insufficient data in Turkey regarding these species.

Species under II. B are either hibernal visitors or transit species. These species are also under significant risk of extinction, which shall be categorized as category A. As such, B.1,0-B.7 criteria shall apply to category B species.

In line with the same study, the status of these species in Turkey are categorized as follows:

<b>Y</b>	<b>Local Species</b>
<b>G/KG</b>	<b>Migrant species (summer mi-</b>
<b>K</b>	<b>Winter visitors</b>
<b>T</b>	<b>Transit migrants</b>
<b>R</b>	<b>Cincidental species</b>
<b>N</b>	<b>Rare species</b>

## MAMMALIA

The table below has been prepared with the support of observations in and around the project site as well as literature review.

In line with IUCN, 9 species encountered in the project site are categorized as LC. In line with the BERN Convention, 2 species are in Annex List III whereas 7 are not included in the list. Also in line with MAK categorization, 1 species is categorized under Annex List I (protected by the Ministry of Agriculture and Forestry), 3 species are categorized under Annex List II (protected by MAK) and 9 species are not included in any of the MAK lists.

Mammals encountered in the project area are mostly rodents. The most frequently-encountered of these species of rodents are *Vulpes vulpes* (*Tilki*) ve *Lepus europaeus* (*Tavşan*), foxes and rabbits, respectively.

**Table XX: Mammalia Highly-likely to be Encountered in the Project Site and the Area of Impact as of the Habitat Thereof**

TÜR (SPECIES)	TURKISH NAME	HABITAT	MAK	Z u ö HH	BERN	SOURCE
<b>ERINACEIDAE</b>	<b>HEDGEHOGS</b>					
<i>Erinaceus concolor</i>	<b>Kirpi</b>	<b>SHRUBS</b>	-	Lc	-	L
<b>VESPERTILIONIDAE</b>	<b>Düzburun yarasalar</b>					
<i>Pipistrellus pipistrellus</i>	<b>Cüce yarasa</b>	<b>Open land and close to water resources</b>		Lc	<b>Annex III</b>	L
<b>LEPORIDAE</b>	<b>RABBITS</b>					
<i>Lepus europaeus</i>	<b>Yabani tavşan</b>	<b>All environments</b>	<b>AN- NEX</b>	Lc	-	L
<b>MURIDAE</b>	<b>RATS</b>					
<i>Apodemus flavicollis</i>	<b>Sarıboyunlu Orman Faresi</b>	<b>Forests, shrubs</b>	-	Lc	-	L
<i>Apodemus sylvaticus</i>	<b>Orman faresi</b>	<b>Forests, shrubs</b>	-	Lc	-	L
<i>Mus musculus</i>	<b>Ev faresi</b>	<b>Settlement areas</b>	-	Lc	-	L
<b>CANIDAE</b>	<b>DOGS</b>					
<i>Vulpes vulpes</i>	<b>Kızıl Tilki</b>	<b>Forests, meadows, fields</b>	<b>AN- NEX II</b>	Lc	-	L
<b>MUSTELLIDAE</b>	<b>WEASELS</b>					
<i>Mustela nivalis</i>	<b>Gelincik</b>	<b>Meadows and grass- land</b>	<b>AN- NEX I</b>	Lc	<b>Annex III</b>	L
<b>SUIDAE</b>	<b>BOAR/HOGS</b>					
<i>Sus scrofa</i>	<b>Yabani Domuz</b>	-	<b>AN- NEX</b>	Lc	-	L

Source: Demirsoy, A., 2003, Türkiye Omurgalıları "Amfibiler", Ministry of Environment, General Directorate for the Protection of Nature, Project No: 90-K-1000-90. Ankara

## Impacts on Flora/Fauna and Mitigations

Since the strength of the magnetic field is in reverse correlation with the square-root of the distance from the source and the density of its dissemination media, the line shall be positioned as much distant as possible from areas with sensitive flora.

Following the completion of construction works, footprint of pylons shall be topographically restored.

In view of minimizing the impact on bird species during the construction of the electric transmission route, works shall be completed as expeditiously as possible, stony and rocky terrain shall not be destroyed unreasonably and unnecessarily or distanced from their original location.

Wildlife in the vicinity of the project site will perceive noise and vibration from project activities as a threat and they would react by leaving their habitat. Accordingly, the activity owner shall ensure that measures to minimize noise have been employed.

In the event of encounters with tortoises in the project area, that is a species under protection, such populations shall be removed from the project site to more peaceful and safe environments.

Some protection mechanisms are employed along distribution and transmission lines so as to protect insulators against arcs resulting from HV. Such protection mechanisms can involve arc protection rings, spark gaps/horns, and spikes to prevent birds from landing.

Spikes are used to keep birds away from power transmission lines. Top-side of insulator connectors on ties on energy transmission lines have to be free from birds and nests. Accordingly, 'V' or 'U' shaped spikes shall be preferred.

Warning signs shall be employed to prevent birds from colliding with transmission lines. Also, power transmission lines shall be fitted with bird-deterrents.

## **Annex-H Chance Find Procedure**

CONTENTS

Page No.

1. INTRODUCTION.....

    1.1 SCOPE .....

    1.2 DEFINITIONS .....

    1.3 ACRONYMS .....

    1.4 REFERENCES.....

2. ROLES AND RESPONSIBILITIES

3. CHANCE FIND PROCESS.....

4. MONITORING AND REPORTING

ANNEX 2.1 – REPORTING OF CHANCE  
FINDS - NOTIFICATION FORM

ANNEX 2.2 - CHANCE FIND RECORD .....

## 1. INTRODUCTION

Increasing the capacity of the REIP project will enable a stronger transmission system and help expand the scope of automated controls, improve management and protect the stability of the high-voltage grid and prevent the widespread of sizable disruptions, which require protection systems. Protected Natural and Archaeological Sites shall be reported if found in the Project area and its vicinity. There is the possibility to chance-find certain archaeological and cultural heritage during Project activities.

### 1.1 SCOPE

The scope of this document is to provide a summary of chance find management actions, procedures and responsibilities in the event of encountering any such assets during project construction activities.

This procedure is for any and all project activities (such as scraping, excavation, boring, drilling, cutting, blasting, leeching, rehabilitation, restoration, etc.) in the project impact zone as well as in other project-related areas.

### 1.2 DEFINITIONS

CHANCE FIND	<i>As a result of normal monitoring of construction activities in project-related areas potential cultural heritage other than defined per any official survey, such objects, characteristics or areas</i>
MUSEUMS	<i>Yalova City Museum Anatolian Civilization Museums</i>
REGIONAL CONSERVATION BOARD DIRECTORATES	<i>Kocaeli Regional Cultural Asset Conservation Boards Ankara 2nd Regional Cultural Asset Conservation Board</i>
PROJECT	<i>GIS SS</i>
WORKS AND MANDATED ACTIONS	<i>Specifies mandated actions</i>
COMPULSORY WORK	<i>Defines that the respective provision is not mandated but recommended as good practice.</i>

### 1.3 ACRONYMS

Acronym	Definition
TEİAŞ	<i>Official Tweeter Page of the company</i>
E & S	<i>Environmental and Social</i>
ESIA	<i>Environmental and Social Impact Analysis</i>

### 1.4 REFERENCES

#### STANDARDS, LEGISLATION AND LAWS

Ministry of Culture and Tourism, Law No. 2863, Ministry of Culture and Tourism Decision No. 658 on the Conservation of Cultural and Natural Assets, Conditions for the Conservation and Use of Archaeological Conservation Sites

## 2. ROLES AND RESPONSIBILITIES

TEİAŞ shall be responsible to prepare and implement management plans and procedures based on project-specific environmental and social impact analyses. Furthermore, TEİAŞ shall also be liable, together with all its units and contractors, to act in observance of these procedures during project construction



The Role of the Project	Responsibilities
Site Manager	<p>To ensure that E &amp; S issues are handled sufficiently and as required by all units concerned.</p> <p>To support E &amp; M works, to allocate adequate on-site resources for the provision of E &amp; M monitoring and inspection activities.</p>

### 3. CHANCE FIND PROCESS

The step-by-step process to follow any chance finds in the project site and its area of impact is as follows:

#### STAGE 1 - Following a chance find:

- All works in the sweep area shall be on-hold. A buffer zone shall be established around the chance find.
- Worksite management and the museum directorate archaeologist shall be immediately contacted.
- The area shall be cordoned off with adequate 'No Entry,' etc. signage to secure the find. Protection of the Worksite: chance find shall not be removed, lifted or no more damaged.

#### STAGE 2 – Registration

Section A of the Chance Finds Report shall be filled and a copy shall be delivered to the site manager in 24 hours.

#### STAGE 3 - Communication with local authorities

The directorate of the respective Museum shall be notified.

#### STAGE 4 - Museum Decision

Museum directorate archaeologist shall determine actions below regarding the chance find.

##### STAGE 4A - Site or the find are of no importance

- Museum directorate archaeologist declares that the site/find are of no significance.
- Site supervisor notifies managers concerned.

##### STAGE 4B - Site is significant

- Museum directorate archaeologist declares that the site/find is significant.
- Museum archaeologist determines next steps and duly notifies the site supervisor.

<p>Site supervisor keeps a copy of the chance find for own records.</p> <p>No other action required</p> <p>This stage closes the chance find procedure <b><i>Construction can be resumed</i></b></p>	<p>Site supervisor notifies managers concerned</p>
--	--

## STAGE 5 - Site survey

Project staff follows the instructions of the museum directorate archaeologist		
Following site survey, the museum directorate archaeologist _____/ <b>declares that the find is of less importance</b>	Following the site survey the museum directorate archaeologist declares that the site/find is <b><u>moderately significant.</u></b>	Following the site survey the museum directorate archaeologist declares that the site/find is <b><u>highly significant.</u></b>
Site supervisor notifies superiors	Advanced studies such as test pit/recovery excavation or remote sensor shall be completed.	Recovery excavation completed.
Site supervisor keeps a copy of the chance find for own purposes	Museum archaeologist shall instruct and/or supervise works.	The site shall be handled in observance of the provisions of the Law No. 2863 on the Protection of Cultural and Natural Assets dated 21.07.1983.
No other action required	Sitesupervisor notifies managers.	Museum directorate archaeologist provides instructions and/or supervision for the test pit/archaeological recovery excavation.
This stage closes the chance find procedure <b><u>Construction can be resumed</u></b>	Project management provides an archaeology task force supervised by the museum directorate archaeologist The task force shall be composed of qualified archaeologists as well as other specialists and workers.	Site supervisor notifies his/her superiors.
	The team, upon completion of excavation, shall report to the museum directorate.	Project management provides an archaeology task force supervised by the museum directorate archaeologist The task force shall be composed of qualified archaeologists as well as other specialists and workers.
	Museum directorate shall notify the Regional Board for the Protection of Cultural assets of the activity outcomes.	Upon completion of excavation, the team shall report to the museum management.
	The Regional Board for the Protection of Cultural Assets shall officially approve that retrieval has been complete and notified the Project Man-	Respective Board for the Protection of Cultural Assets shall officially approve that retrieval has been complete and notified the Project Management as required.
	Site supervisor keeps a copy of the chance find for own purposes	The site shall be registered and placed under protection as per the Turkish legislation.
No further action is required.		Archaeology Supervisors/Specialists shall notify respective authorities.
This stage closes the chance find procedure <b><u>Construction can be resumed</u></b>		Site supervisor keeps a copy of the chance find for own purposes
		No further action is required.
		The chance find procedure is closed.

In cases where human remains have been found, it is of utmost importance to note that the entire project team and local authorities shall be immediately notified.

#### 4. MONITORING AND REPORTING

Site supervisor shall visually monitor any and all construction and other activities as proof of presence of cultural inheritance assets.

Chance Finds shall be recorded in the Chance Finds Notification Form (see. Annex 2.1). Print copies of Chance Find Notification Forms shall be available on site, which shall be always scanned once filled in and registered and saved

Chance Find Notification Forms shall be updated by the site supervisor, which be recorded in the Chance Finds Log (see. Annex. 2.2). This document shall be regularly checked.

## ANNEX 2.1 – REPORTING OF CHANCE FINDS - NOTIFICATION FORM

**PART A  
SECTION A**

Project Location: <i>Proje Sahası</i>	District (İlçe): Village (Köy):	Date: <i>Tarihi</i>	Form No:	Project Location: tion:
Name of person reporting chance find: <i>Şans bulgusunu rapor eden kişinin ismi</i>				
Was work stopped in the immediate vicinity of the chance find? <i>Şans bulungusunun tam çevresinde iş durduruldu mu?</i>				
		<input type="checkbox"/> Yes <i>Evet</i>	<input type="checkbox"/> No <i>Hayır</i>	
Was a buffer zone created to protect the chance find? <i>Şans bulguyu korumak için tampon bölge oluşturuldu mu?</i>				
		<input type="checkbox"/> Yes <i>Evet</i>	<input type="checkbox"/> No <i>Hayır</i>	
<b>NOTIFICATION BİLDİRİM</b>				
Site manager and E&S manager contacted <i>Saha Müdürü ve Çevre Müdürü ile irtibata geçildi</i>				
		<input type="checkbox"/> Yes <i>Evet</i>	<input type="checkbox"/> No <i>Hayır</i>	
<b>CHANCE FIND DETAILS ŞANS BULGU AYRINTILARI</b>				

GPS coordinates  
*GPS koordinatları*

Photo record  Yes  No  
(HD quality - no cell phone photos) *Fotoğraf kaydı*  
*Evet Hayır*  
(HD kalitesinde — cep telefonu fotoğrafı değil)

If not, explain why:  
*Değil ise nedenini açıklayınız*

Other records  Yes  No  
Specify (drawings, HD quality videos, etc.):

*Diğer kayıtlar* *Evet Hayır*  
*Belirtin (çizimler, HD kalite videolar, vb.)*

Description of chance find:  
*Şans bulungusunun tanımı*

Description of site/finding and other specifications of site/finding: (e.g. surface sediment type, ground surface visibility, distance to closest watercourse, etc.)  
*Sahanın / bulgunun ve saha/bulgunun diğer özelliklerinin tanımı: (örn. Yüzey sediman türü, yüzey zemin görünürlüğü, en yakın suyunu olan mesafe, vb.)*

**PART B**  
**BÖLÜM****NOTIFICATION OF MUSEUM DIRECTORATE**  
**ARCHAEOLOGIST**Monitoring archaeologist contacted museum directorate archaeologist  
*İzleme arkeoloğu, müze müdürlüğü arkeoloğu ile irtibata geçti.* Yes  
*Evet* No  
*Hayır*Date of notification:  
*Bildirim tarihi*Name of museum directorate and name of museum directorate archaeologist:  
*Müze müdürlüğünün adı ve Müze müdürlüğü arkeoloğunun adı*Contact number of museum directorate archaeologist:  
*Müze müdürlüğü arkeoloğunun iletişim numarası***DECISION OF MUSEUM DIRECTORATE ARCHAEOLOGIST**  
**MÜZE MÜDÜRLÜĞÜ ARKELOĞUNUNKARARI**Date of site visit:  
*Saha ziyaret tarihi:* Site/Finding of no significance - Construction to proceed with no further action - End of chance find procedure  
*Önemsiz Saha — Bulgu - daha fazla araştırma yapılmadan inşaat devam edilebilir — Şans bulgu prosedürün sonu.* Site/Finding of significance - Further actions required  
*Önemli Saha — Bulgu - Ek araştırma gerekmektedir*Please Fill out Part C  
*Lütfen Bölüm C 'yi doldurun.*Date of notice to resume work: *işe devam etme tarihinin bildirisi*

Name of museum directorate archaeologist: <i>Müze müdürlüğü arkeoloğunun ismi</i>			
Contact information: <i>iletişim numarası</i>			
Site manager and E&S manager contacted <i>Saha Müdürü ve E &amp; S müdürü ile irtibata geçildi</i>		<input type="checkbox"/> Yes <i>Evet</i>	<input type="checkbox"/> No <i>Hayır</i>
<b>PART C</b> <b>BÖLÜM C</b>			
<b>FURTHER FIELD INVESTIGATION</b>			
<input type="checkbox"/> Site/Finding of minor significance <i>Az önem taşıyan saha/bulgu</i>	<input type="checkbox"/> Site/Finding of moderate significance <i>Orta derecede önemli saha/bulgu</i>	<input type="checkbox"/> Site/Finding of major significance <i>Çok önemli saha/bulgu</i>	

Describe additional work to be conducted:  
*Yapılması gereken ek işlerin tanımları*

Date started:  
*Başlangıç tarihi*

Date of notice to resume work:  
*işe geri dönme tarihi bildirisi*

Name of museum directorate archaeologist:  
*Müze müdürlüğü arkeoloğunun ismi* Contact  
information:  
*iletişim numarası*

Construction manager contacted  
*inşaat müdürü ile irtibata geçildi*

Date completed:  
*Bitiriş tarihi*

Yes  No  
*Evet Hayır*



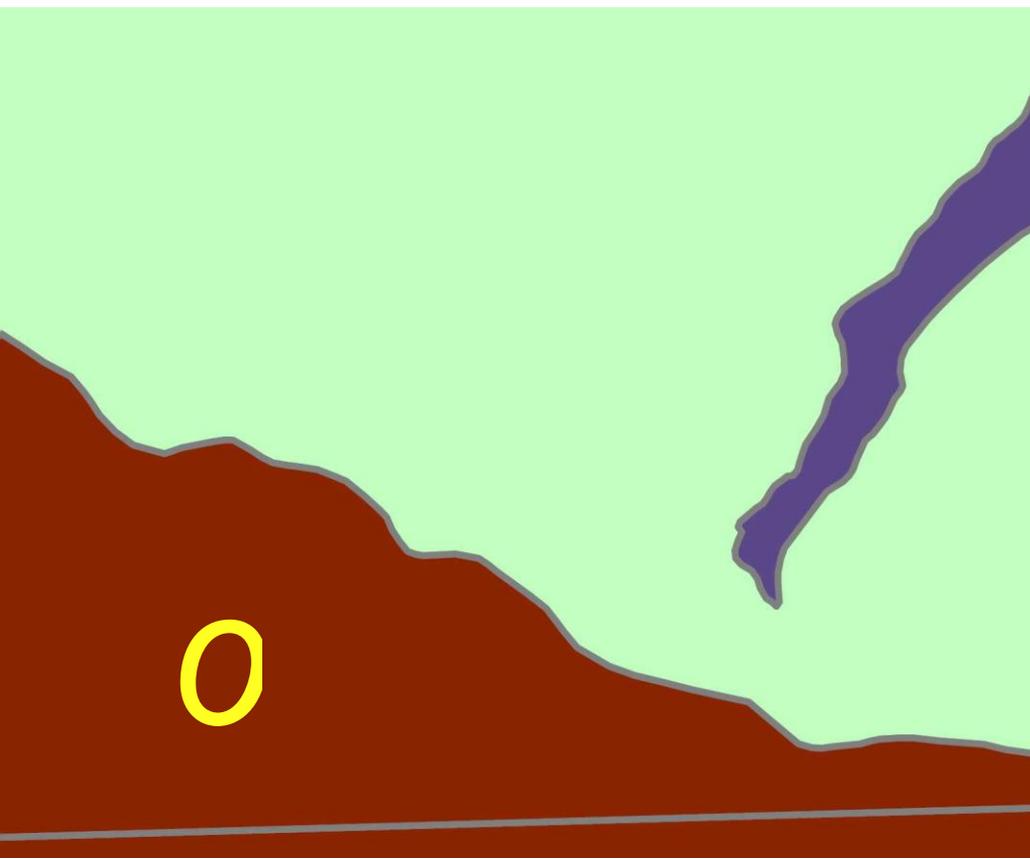


## ANNEX 2.3 - CONTACT INFORMATION

Museum Directorate	Address	Telephone	Fax	E-mail
Yalova City Museum	15 Temmuz Demokrasi ve Cumhuriyet Meydanı Eski Hükümet Konağı Kent Müzesi No:1 /YALOVA	0226 811 07 27		info@yalovakentmuzesi. gov .tr
Anatolian Civilizations Museum	Gözcü Sokak No: 2 06240 Ulus, ANKARA	(0312) 324 31 60	(0312) 311 28 39	anmedmuz@gmail.com

CONSERVATION BOARD	AREAS OF RESPONSIBILITY	ADDRESS	TELEPHONE	FAX	E-MAIL
Kocaeli Regional Cultural Asset Conservation Board	Kocaeli, Sakarya, Düzce, Yalova	Kozluk Mahallesi İstasyon Caddesi TCDD Eski Gar Binası Kat 2 İzmit / KOCAELİ	(0262)323 29 26 - (0262) 321 67 33	0262 323 29 36	ktvk41 @kultur.gov.tr
Ankara 2nd Regional Cultural Asset Conservation Board	ANKARA (Altındağ, Pursaklar, Akyurt, Çubuk, Elmadag, Şereflikoçhisar, Evren, Haymana, Bala, Güdül), Çorum, Kırıkkale	Konya Sokak No: 46 ULUS ANKARA	(0312) 324 62 57	(0312) 312 12 47	Ankarakurul2@kultur.gov .tr

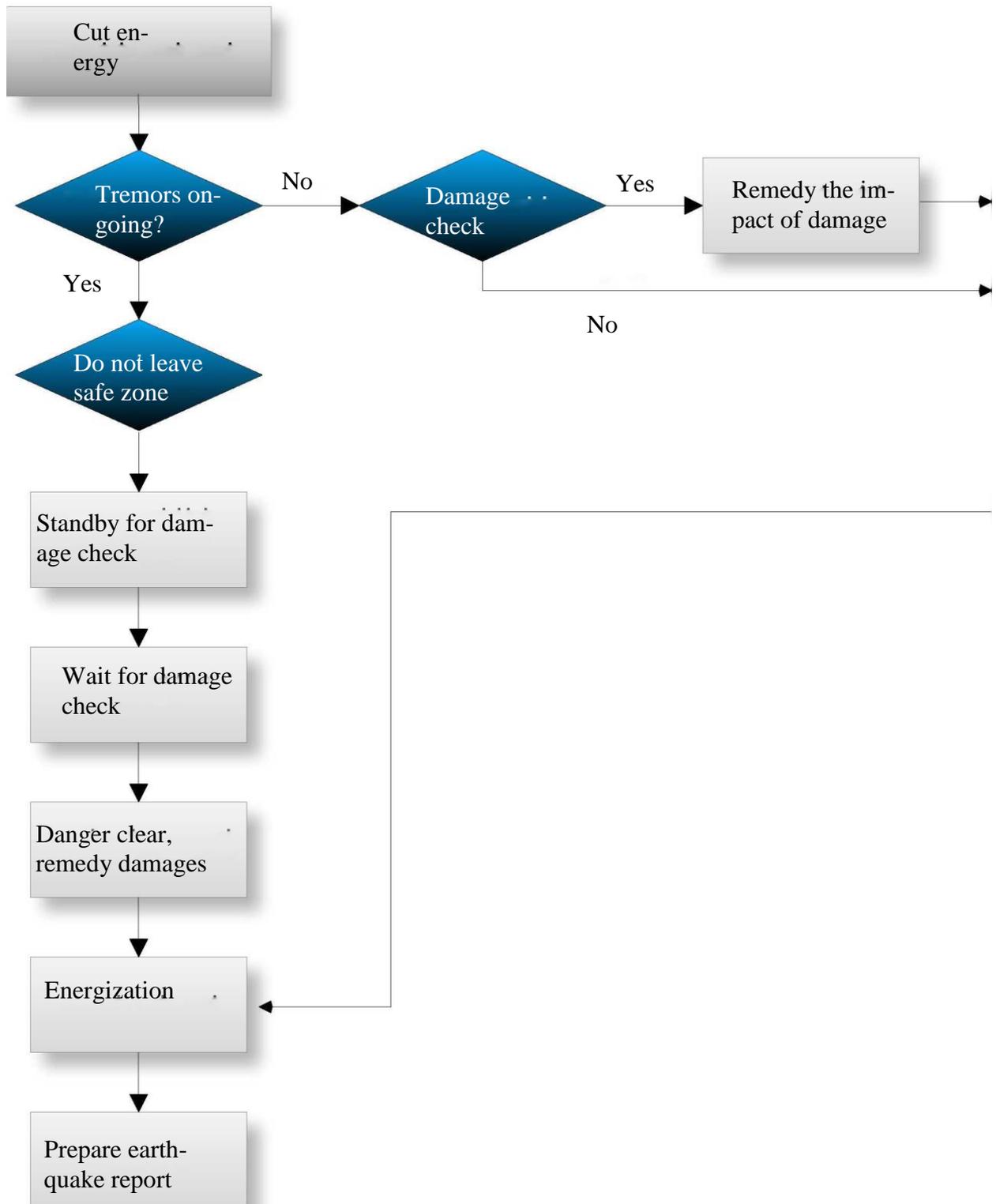
## **Annex-I Geological Map**



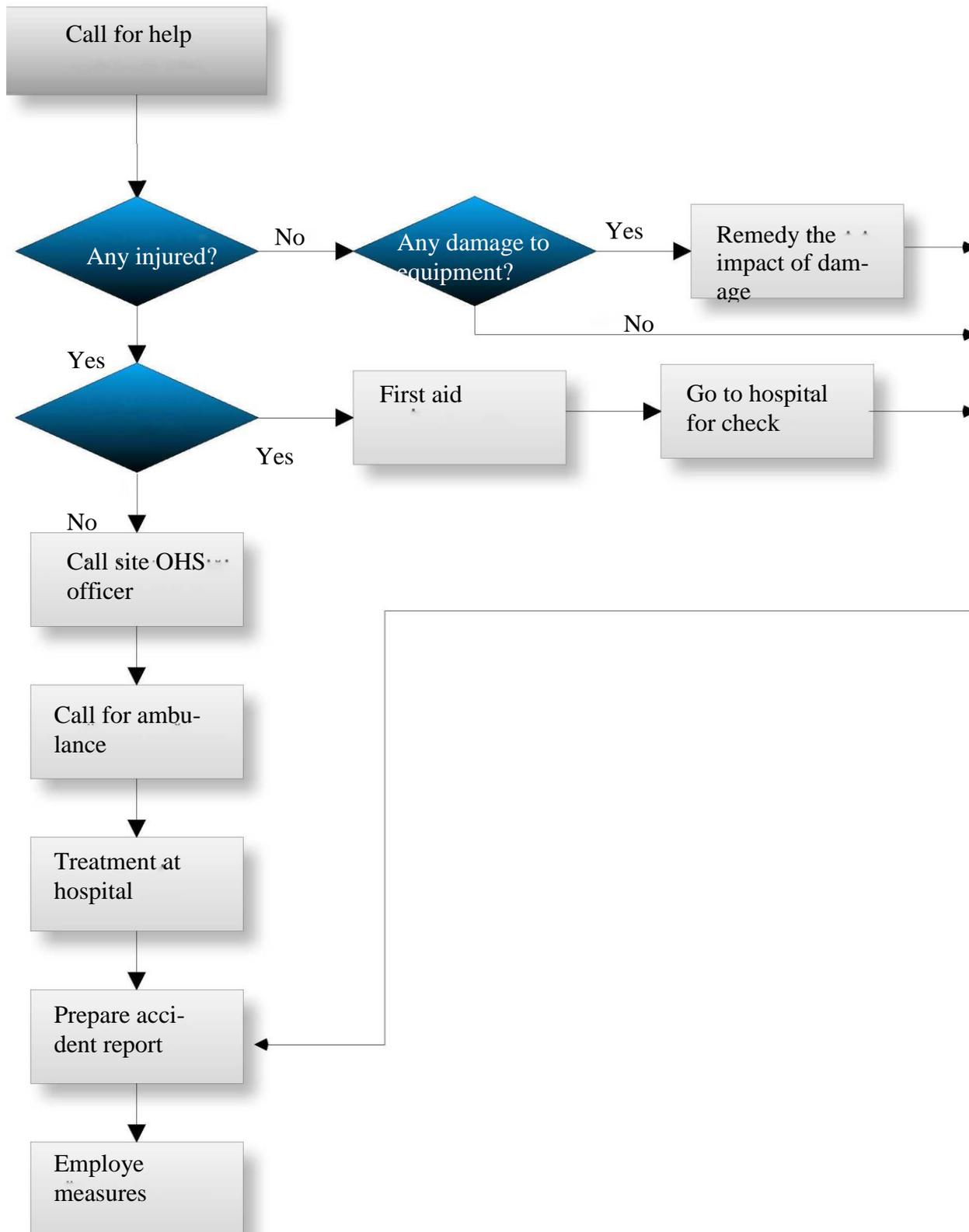
- ALLUVIUM
  - GRAVEL-SANDSTONE-MUDSTONE
  - LIMESTONE
  - SANDSTONE-MUDSTONE-MARBLE
  - METAGRAVEL-METASANDSTONE
  - METAGABRO-AMPHIBOLYTE
  - METAGRANITOID
  - METACLASTICROCK
  - SHALE
  - VOLVANITE-SEDIMENT ROCK Other
- 380KV CIFTLIKKOY GIS

## **Annex-J Emergency Response Plans**

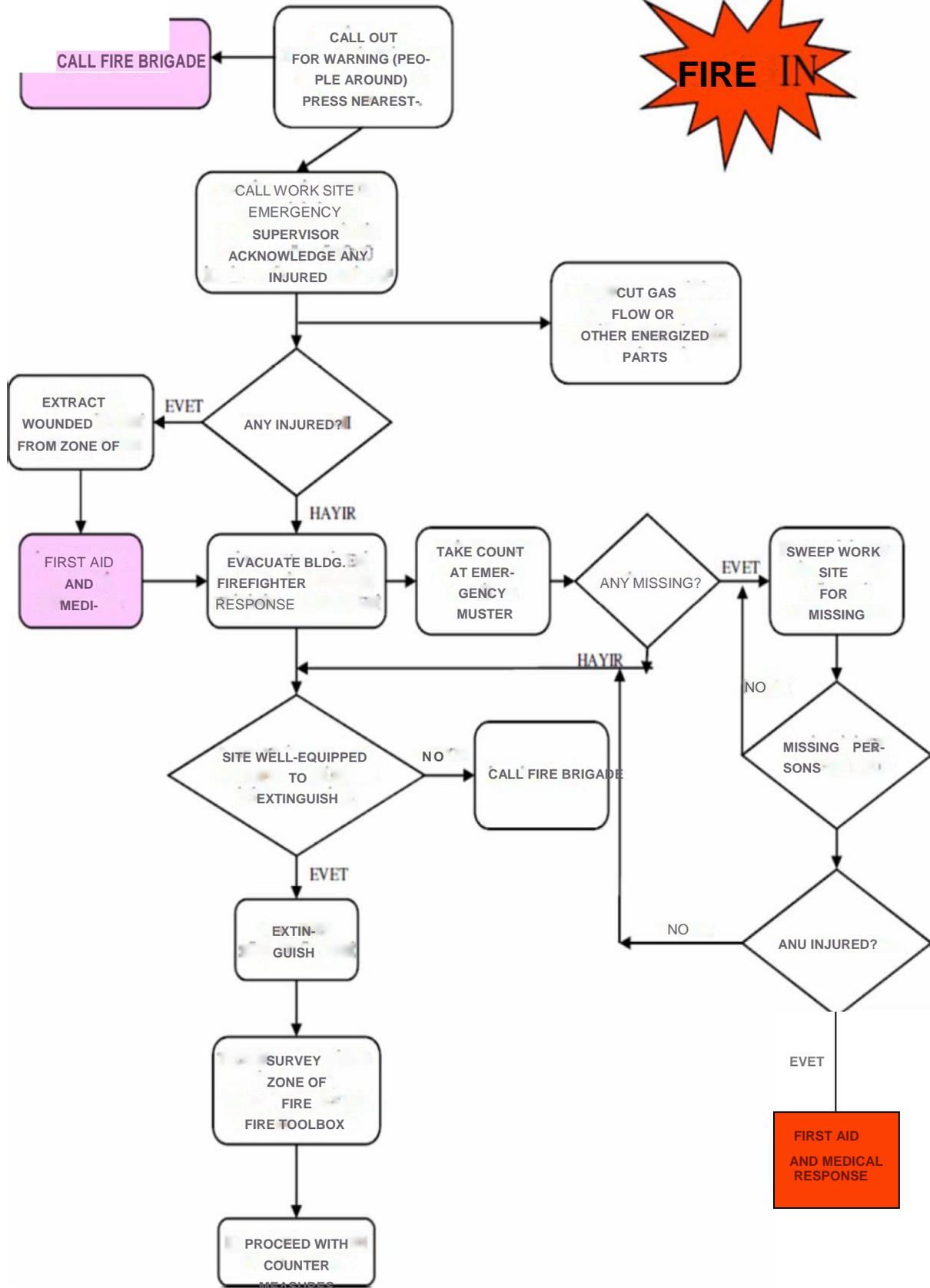
# Earthquake emergency response plan



# Working accident emergency response plan



# EMERGENCY RESCUE RESPONSE PLAN



**Annex-K Correspondences with  
Regional Board of Protection of  
Cultural Heritage**





T.C.

KÜLTÜR VE TURİZM BAKANLIĞI

Kocaeli Kültür Varlıklarını Koruma Bölge Kurulu Müdürlüğü

Sayı : 95741949/77.720.122/ 874  
Konu : Yalova ili, Altınova ilçesi,  
380 KV Orhangazi Trafo Merkezi

05/06/2017

TÜRKİYE ELEKTRİK İLETİM A.Ş. GENEL MÜDÜRLÜĞÜNE  
(2. Bölge Müdürlüğü, Tesis ve Kontrol Müdürlüğü /BURSA)

İlgi : 31/05/2017 tarih ve E.210807 sayılı yazınız.

İlgi yazı ile; Yalova ili, Altınova ve Çiftlikköy ilçelerinde bulunan, ilgi yazı ekinde koordinatları verilen alanlarda yapılması planlanan 380 kv Orhangazi Trafo Merkezi'ne ilişkin çalışmada 2863 sayılı Kültür Varlıklarını Koruma Kanunu kapsamında bir sakınca bulunup bulunmadığı hususunun bildirilmesi talep edilmektedir.

Yalova ili, Altınova ve Çiftlikköy ilçelerinde bulunan, ilgi yazı ekinde koordinatları verilen alanlara ilişkin Müdürlüğümüz arşivinde yapılan incelemeler neticesinde, talep konusu alanların herhangi bir arkeolojik, kentsel veya tarihi sit alanında kalmadığı ve alanlar üzerinde herhangi bir anıtsal yapının bulunmadığı anlaşılmıştır.

Söz konusu alan Müdürlüğümüz raportörlerince yerinde incelenmiştir. İncelemeler neticesinde, alan üzerinde herhangi bir kültür varlığına rastlanmamıştır.

Yalova ili, Altınova ve Çiftlikköy ilçelerinde bulunan, ilgi yazı ekinde koordinatları verilen alanlarda yapılması planlanan 380 kv Orhangazi Trafo Merkezi'ne ilişkin yapılan başvuruda 2863 sayılı Yasa kapsamında herhangi bir kültür varlığı buluntusuna rastlanılmadığından, yapılacak uygulamalarda Müdürlüğümüz açısından bir sakınca bulunmamaktadır. Bununla birlikte, alanlar üzerinde yapılacak uygulamalar esnasında kültür varlığına rastlanması halinde 2863 sayılı Yasanın 4. maddesi uyarınca ilgili birimlere haber verilmesi gerekmektedir.

Bilgilerinize arz ederim.

Taner AKSOY  
Bölge Kurulu Müdürü

## **Annex-L Mukhtar's Minutes**

Ş..112-12019

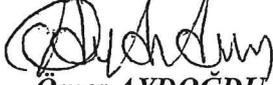
## TESLİM VE TESELLÜM TUTANAĞI

TEİAŞ Genel Müdürlüğünce tesis edilecek olan *ÇİFTLİKÖY GIS TM, 380 KV HERSEK EK ÇUKURU -DİLOVASI EK ÇUKURU DENİZALTI KABLOSU ve 380 KV İZMİT KÖRFEZ GEÇİŞİ INTERFACE NOKTASI - HERSEK EK ÇUKURU YERALTI KABLOSU* yatırımlarının "Paydaş Katılım Toplantısı " yapılacağına dair duyuru belgesinin teslim edildiğine dair iş bu tutanak 2 nüsha olarak düzenlemiş ve taraflarca imza altına alınmıştır.

**Teslim Eden**

**TEİAŞ 2.**

**BÖLGE MÜDÜRLÜĞÜ PERSONELİ**

  
**Ömer AYDOĞDU**

**Tesellüm EDEN**

  
**İLYASKÖY MİHTARI**  
**Recep GÜLÇEN**

# **Annex-M Visuals of Web Announcement**



## HABERLER



### 12. EIF Uluslararası Enerji Kongresi ve Fuarı

12. EIF Uluslararası Enerji Kongresi ve Fuarı başladı  
[Devamı](#)

## DUYURULAR



EİH Enerjilendirme Duyurusu [Devamı](#)

10.12.2019



Çevresel ve Sosyal Etki Değerlendirme  
Paydaş Katılımı Toplantısı Duyurusu [Devamı](#)

06.12.2019



KPSS 2019/2 Merkezi Yerleştirme  
Döneminde Şirketimizi Tercih Edecek Adaylar  
İçin Bilgi Notu [Devamı](#)

## ETKİNLİKLER



TEİAŞ Geleneksel Sonbahar Futbol Turnuvası  
final mücadelesi ve yapılan tören ile sona erdi.

[Devamı](#)

29.11.2019



TEİAŞ Gençlik ve Spor Kulübü bünyesinde  
ulusal ve uluslararası alanda başarı kazanan  
sporculara ve antrenörlere... [Devamı](#)

15.11.2019



6 - 8 Kasım tarihleri arasında Ankara ATO  
Congressium Uluslararası Kongre ve Sergi  
Sarayı'nda gerçekleştirilece... [Devamı](#)

## DUYURULAR

### ÇEVRESEL VE SOSYAL ETKİ DEĞERLENDİRME PAYDAŞ KATILIMI TOPLANTISI DUYURUSU

📄 Çevresel ve Sosyal Etki Değerlendirme Paydaş Katılımı Toplantısı duyuru metni için tıklayınız.

#### Dokümanlar

📄 380 kV Çiftlikköy GIS Substation Draft Environmental and Social Management Plan

📄 380 kV Çiftlikköy TM Taslak Çevre ve Sosyal Yönetim Planı

📄 380 kV Gebze GIS TM Taslak Çevre ve Sosyal Yönetim Planı

📄 380 kV Gebze OIZ Substation Draft Environmental and Social Management Plan

📄 Deri OIZ GIS Substation Draft Environmental and Social Management Plan

📄 Deri OSB TM Taslak Çevre ve Sosyal Yönetim Planı

📄 Draft Environmental and Social Impact Assessment

📄 Taslak Çevre ve Sosyal Etki Değerlendirmesi

#### DİĞER DUYURULAR

**EİH ENERJİLENDİRME DUYURUSU**  
EİH Enerjileştirme Duyurusu **Devamı**

**KPSS 2019/2 MERKEZİ YERLEŞTİRME DÖNEMİNDE ŞİRKETİMİZİ TERCİH EDECEK ADAYLAR İÇİN BİLGİ NOTU**  
KPSS 2019/2 Merkezi Yerleştirme Döneminde Şirketimizi Tercih Edecek Adaylar İçin Bilgi Notu **Devamı**

**KAPASİTE MEKANİZMASI 2019 YILI EKİM AYI ÖDEME LİSTESİ**  
Kapasite Mekanizması 2019 Yılı Ekim Ayı Ödeme Listesi **Devamı**

## DUYURU

### Çevresel ve Sosyal Etki Değerlendirme Paydaş Katılımı Toplantısı

Türkiye Elektrik İletim A.Ş. Genel Müdürlüğü (TEİAŞ) tarafından;

- 380 kV Hersek Ek Çukuru - Dilovası Ek Çukuru Denizaltı Kablosu,
- 380 kV Deri OSB - Tepeören Yer Altı Kablosu,
- 380 kV Gebze GIS - Kroman Çelik GIS Yer Altı Kablosu,
- 380 kV Kroman Çelik GIS - Deri OSB GIS Yer Altı Kablosu,
- 380 kV Gebze GIS - Dilovası Ek Çukuru Yer Altı Kablosu,
- 380 kV Diliskelesi GIS - Dilovası Ek Çukuru Yer Altı Kablosu,
- 380 kV İzmit Körfez Geçişi Interface Noktası-Hersek Ek Çukuru Yer Altı Kablosu,
- 380 kV Çiftlikköy GIS Trafo Merkezi,
- 380 kV Gebze GIS Trafo Merkezi,
- 380/154 kV Deri OSB GIS Trafo Merkezi

projelerinin tesisi ve işletilmesi planlanmaktadır. Söz konusu projeler için aşağıda belirtilen tarih ve saatte faaliyetlerle ilgili halkı bilgilendirmek, görüş ve önerilerini almak için "Paydaş Katılımı Toplantısı" yapılacaktır.

Halkımıza saygı ile duyurulur.

**Toplantı Yeri** : Gebze Kültür Merkezi

**Toplantı Yerinin Adresi** : Hacıhalil Mahallesi Şehit Numan Dede Caddesi No:8 41400  
Gebze/KOCAELİ

**Toplantı Tarihi** : 10/12/2019

**Toplantı Saati** : 14:00

**Proje Sahibi:**

**Türkiye Elektrik İletim A.Ş. (TEİAŞ) Genel Müdürlüğü**

Nasuh Akar Mah. Türkocağı Cad. No: 2 06520 Çankaya-ANKARA

**Tel** : (0 312) 203 86 11

**Faks** : (0 312) 203 87 17

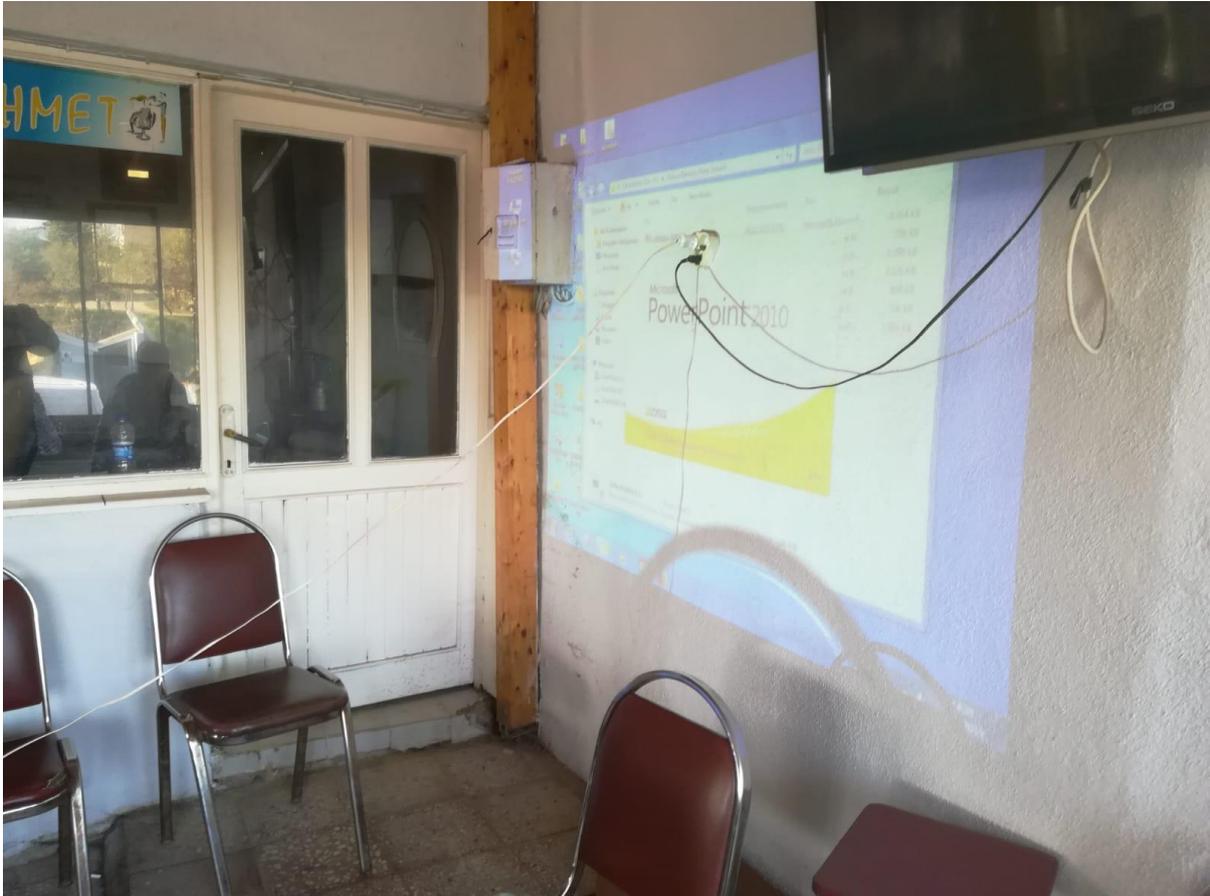
# **Annex-N Photographs of the Public Consultation Meetings**



Sütlüce











Gebze

**TEİAŞ**  
TÜRKİYE ELEKTRİK  
İLETİM A.Ş.

**GEBZE**  
BELEDİYESİ

**ÇEVRESEL VE SOSYAL  
ETKİ DEĞERLENDİRME  
PAYDAŞ KATILIM  
TOPLANTISI**

**HOŞ  
GELDİNİZ**

**Zinnur BÜYÜKGÖZ**  
BELEDİYE BAŞKANI  
*Z. Büyükgöz*

**GEBZE BELEDİYESİ**  
**GEBZE**  
ÇEVRE KAZANIM PROJESİ  
0905 02 13 10  
MÜHÜRLEME KUTUSU VE MİKROPLU KUTUSU  
KAYIPLAR  
PLASTİK  
KİMLİK VE BELGELERİNİZİ BURAYA ATINIZ!

















**Prepared By**

<b>380 kV ÇİFTLİKKÖY GIS TRAFO MERKEZİ (TM) ÇEVRE ve SOSYAL YÖNETİM PLANINI HAZIRLAYAN PERSONEL</b>		
<b>Proje Sahibi:</b>	Türkiye Elektrik İletim Anonim Şirketi (TEİAŞ) Genel Müdürlüğü	
<b>Projenin Mevkii:</b>	Yalova İli, Çiftlikköy İlçesi, İlyasköy Mahallesi	
<b>Proje Adı:</b>	380 kV Çiftlikköy GIS Trafo Merkezi (TM)	
<b>Adı Soyadı</b>	<b>Mesleği</b>	<b>İmzası</b>
Coşkun KOÇ	Orman Mühendisi	
Erdinç ÇALIŞKAN	Çevre Mühendisi	
Firdevs İrem KALE ÜNLÜ	Çevre Mühendisi	