GENERAL DIRECTORATE of TURKISH ELECTRICITY TRANSMISSION CORPORATION

380 kV GEBZE GIS SUBSTATION (GAS INSULATED SYSTEM SUBSTATION) ENVIRONMENTAL and SOCIAL MANAGEMENT PLAN

KOCAELİ PROVINCE, GEBZE DISTRICT

ANKARA – DECEMBER 2019

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***Name of Project**	380 kV GEBZE GIS SUBSTATION (GAS INSULATED SYSTEM SUBSTATION) ENVIRONMENTAL and SOCIAL MANAGEMENT PLAN
Address of Site Selected for the Project	Kocaeli Province, Gebze District, Muallimköy Neighborhood

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EXECUTIVE SUMMARY

The 380 kV Gebze GIS Substation Project is planned to be constructed within the scope of financing from World Bank loan on block 477, parcel no. 1 in Kocaeli province, Gebze district, Muallimköy Neighborhood. Project components are planned as 380/33 kV, 2x125 MVA + 3. Substation Feed Line + 420 kV, 160-250 MVAr adjustable reactor.

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 Gebze GIS Substation Project is considered to be outside of the scope of this regulation.

Marmara Region, which is the most densely populated region of our country, has a great volume of industry and trade. This potential in Marmara grows exponentially with each passing year. In line with such development, there is a need for uninterrupted energy provision. In order to be able to meet the energy need of Marmara Region which is rising/is going to rise, one needs to increase the installed capacity in the region due to the exhaustion of the capacities of existing substations.

In order to ensure the secure supply of the existing and future additional loads of the region in question, Gebze GIS project was included under the Investment Program of our Enterprise. With the setting up of Gebze GIS, an alternative feed source will be provided for urban and industrial loads at Gebze and Çayırova Districts of Kocaeli Province and Tuzla District of İstanbul Province. In the event that Gebze GIS is not constructed, considering the substation loads in the current situation, it is inevitable that there will be interruptions in the region in question.

Permission was obtained from the relevant agency for the area of 68,064.41 m² qualifying as forest land within the boundaries of Gebze district as the location for Gebze GIS Substation.

According to information verbally obtained from the Gebze District Forest Directorate, the area of concern is categorized as degraded forest area. The area is scattered with small trees

and shrub-like locust (robinia pseudoacacia) and juniper (juniperus) trees. This site is entirely inside the OIZ area and is not one that is used by locals or for other activities such as apiculture, etc. 50 of the shrub-like locust (robinia pseudoacacia) and juniper (juniperus) trees in this area will be translocated to appropriate locations within the area. The rest of the trees in the area will be protected.

The construction of the project will positively impact both the regional economy and the Turkish economy as a whole. The development of industry which requires high voltage energy sources will be ensured in the region.

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.

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.

The environmental and social issues on construction stage are culturel 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.

Also, 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 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 Reigonal

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.

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 Mr. Haydar Yılmaz, the mukhtar of the Muallinköy neighborhood, for review, objections and suggestions, on April 12, 2019. This process was made public on the official website of TEIAS on April 12, 2019 (http://www.teias.gov.tr). Additionally, the public was informed through the official Instagram, Twitter and Facebook pages of TEİAS. 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.

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

The environmental and social activities supported by a grievance redress mechanism established by TEIAS are notified to the affected individuals prior to the project.

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 (216)-521 58 00.

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

1.PROJECT DESCRIPTION

1.1 General Description of the Project

The 380 kV Gebze GIS Substation Project is planned to be constructed within the scope of financing from World Bank loan on block 477, parcel no. 1 in Kocaeli province, Gebze district, Muallimköy Neighborhood. Project components are planned as 380/33 kV, 2x125 MVA + 3. Substation Feed Line + 420 kV, 160-250 MVAr adjustable reactor.

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 Gebze GIS Substation Project is considered to be outside of the scope of this regulation.

380 kV Gebze GIS-Kroman Çelik GIS Underground Cable (UG) and 380 kV Gebze GIS-Dilovası Additional Trench UG will be connected to the 380 kV Gebze GIS SS project.

1.2 Objective of the Project

Marmara Region, which is the most densely populated region of our country, has a great volume of industry and trade. This potential in Marmara grows exponentially with each passing year. In line with such development, there is a need for uninterrupted energy provision. In order to be able to meet the energy need of Marmara Region which is rising/is going to rise, one needs to increase the installed capacity in the region due to the exhaustion of the capacities of existing substations.

In the current situation, there are two substations which feed the region in question. These are Tepeören and Gebze OIZ Substations.

The 380/154/33 kV Tepeören Substation is one with an installed capacity of 650 MVA with agreed capacities held by 6 different OIZs manufacturing in various industrial branches with leather, automotive and chemicals being the most prominent (Anadolu Yakası, Birlik, Deri, Otomotiv, Tuzla Kimya Sanayicileri, Tuzla) and 2 transmission companies (AYEDAŞ and SEDAŞ) and with a central agreed capacity reaching 448 MW. An occupancy limit of 70% has been reached under these circumstances.

Another substation which feeds the region, the Gebze OIZ Substation has a system utilization agreement of a total of 359 MW in the current situation.

Since Gebze GIS will meet a portion of the loads belonging to SEDAŞ at Gebze OIZ Substation to which 4 OIZs and 1 distribution company are connected along with the Tepeören Substation, a decrease in the loads of Gebze OIZ Substation will be achieved. With an installed capacity of 4x100 MVA against an agreed capacity of 359 MW, Gebze OIZ Substation has already exceeded the occupancy criteria of 70%.

In order to ensure the secure supply of the existing and future additional loads of the region in question, Gebze GIS project was included under the Investment Program of our Enterprise. With the setting up of Gebze GIS, an alternative feed source will be provided for urban and industrial loads at Gebze and Çayırova Districts of Kocaeli Province and Tuzla District of İstanbul Province. In the event that Gebze GIS is not constructed, considering the substation loads in the current situation, it is inevitable that there will be interruptions in the region in question.

1.3 Project Area

Permission was obtained from the relevant agency for the area of 68,064.41 m² qualifying as forest land within the boundaries of Gebze district as the location for Gebze GIS Substation (Annex-J).

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 securtity system. Project alternatives are always taken into account.

In the construction stage, an area of about 1 decare within the mentioned land is being utilized as construction site. 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 TEİAS 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. Furthermore, materials shall not be supplied from illegal quarries and in the event of supply of such materials, the condition of availability of any and all permits shall be sought, which shall be supervized by TEİAS.

Since the planned project area is nearby the industrial zone, a building belonging to Betesan Elektrik Mühendislik A.Ş. is present on the boundary of the project area. In addition to this, the closest housing unit to the project area is located at a distance of approximately 220 meters.

Figure1 Satellite Image Showing Project Area

The site with a surface area of 68,064.41 m² located within the boundaries of Kocaeli province, Gebze district, Muallim Köy neighborhood which belongs to Sakarya Regional Directorate of Forestry and which has lost is quality of being forest land was obtained as the

area of Gebze GIS Substation, as included under the Investment Program of our Enterprise with the project number 17.D.00.0860, with the taking of a Site Delivery Report on 19.07.2017.

According to information verbally obtained from the Gebze District Forest Directorate, the area of concern is categorized as degraded forest area. The area is scattered with small trees and shrub-like locust (robinia pseudoacacia) and juniper (juniperus) trees. This site is entirely inside the OIZ area and is not one that is used by locals or for other activities such as apiculture, etc. 50 of the shrub-like locust (robinia pseudoacacia) and juniper (juniperus) trees in this area will be translocated to appropriate locations within the area. The rest of the trees in the area will be protected.

380 kV Gebze GIS-Kroman Çelik GIS Underground Cable (UG) and 380 kV Gebze GIS-Dilovası Additional Trench UG will be connected to the 380 kV Gebze GIS SS project. The location of cables and the SS can be seen in the satellite imagery below.

Figure 2 Satellite image depicting UG Cables to connect to Gebze GIS SS-1

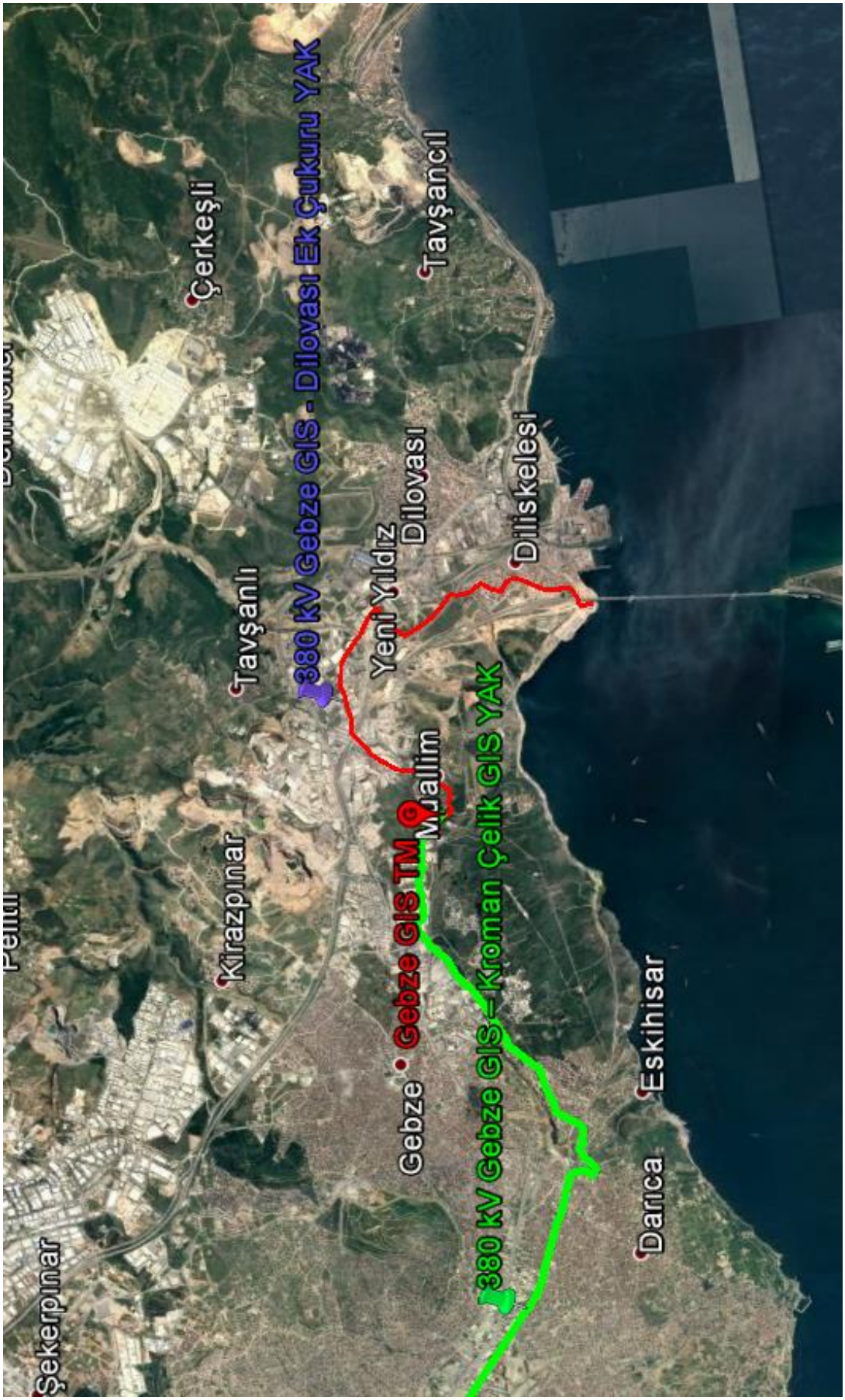


Figure 3 Satellite image depicting UG Cables to connect to Gebze GIS SS-2

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 SF6 gas, which can 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 SF6 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 SF6 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, SF6 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. In Turkey, the first gas-insulated substation was 154 kV İstanbul Topkapı GIS Substation, which was commissioned on November 23, 1990. Today, gas-insulated substations have been installed and are in operation in many cities (particularly big cities) of our country. Images of GIS Substation Projects operated by TEİAS can be found in Annex-D.

Electromagnetic 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 Istanbul, to relieve the concerns of the public and reassure them that international standards are complied with in executing the project.

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^{-1})	Magnetic field strength H (A m^{-1})	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	$5 \times 10^2/f$	8×10^2	1×10^{-3}
300 Hz–3 kHz	$5 \times 10^2/f$	$2.4 \times 10^5/f$	$0.3/f$
3 kHz–10 MHz	1.7×10^{-1}	80	1×10^{-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^{-1})	Magnetic field strength H (A m^{-1})	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	1.6×10^2	2×10^{-4}
50 Hz–400 Hz	$2.5 \times 10^2/f$	1.6×10^2	2×10^{-4}
400 Hz–3 kHz	$2.5 \times 10^2/f$	$6.4 \times 10^4/f$	$8 \times 10^{-2}/f$
3 kHz–10 MHz	8.3×10^{-2}	21	2.7×10^{-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).*

EMF values of the planned 380 kV Gebze GIS Substation are anticipated to be below the threshold values during its operation stage, similar to the values measured at the 380 kV Küçükbakkalköy GIS Substation, which is operational within the urban area of Istanbul and which uses the same technology.

SF6: SF6 is a non-toxic, inert, insulator, coolant, colorless, odorless and non-flammable gas with high dielectric resistance and thermal stability. With a molecular mass 5 times heavier than air, SF6 is one of the known heavy gases, also with a dielectric resistance (at 50 Hz and 1 bar) 2.5-3 times greater than that of nitrogen and air. These values increase in tandem with pressure exceeding the dielectric resistance of the transformer insulation lube at 3 bars.

With its electronegativity, SF6 has an excellent ability of arc quenching. Due to increased ambient temperature caused by the arc created during the breaking process, SF6 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 SF6 heats up (2000 °C) and cools down after the breaking process, the fluorine and sulfur ions are recombined to transform into SF6. In his way, the dielectric environment regains its former properties.

Chemically very-stable, SF6 are used in breakers and other installations alike, as well as GIS assemblies in GIS Sub-stations. SF6 shall be preferred as it is not txic in pure form and provides a safe working environment.

5 times heavier than air, SF6, when released into the atmosphere, is inclined to fill lower spaces. A mix of 20 % oxygen and 80 % SF6 can be inhaled without detrimental impacts. In the event of any leaks, one must be protected from SF6 that collects above the ground. High concentration of SF6 leakages in closed environments can cause the risk of asphyxiation for staff due to reduced level of oxygen. In this case, contaminated area shall be ventilated and vacated and re-entered using adequate personal protective equipment.

Vitiated and stale SF6 to fill the environment after the arc can be intoxicating. In this case, OHS principles shall be observed through out work performed with SF6.

Furthermore, 1 kg of SF6 released into the atmosphere triggers an un-natural greenhouse effect similar to that of a mid-class gasoline car through 120.000 km (185 g CO_2/km). SF6 emissions shall be refrained from as much as possible. Amount of SF6 needed to perform certain tasks shall 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 SF6 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, SF6 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 SF6 gas will be very little due to design, and O&M regime of a GIS substation.

The employees working with the SF6 gas will be trained with respect to risks and occupational health and safety measures that should be taken and be equipped with the relevant personal protection equipment.

1.5 Places with High Landscape Value, Recreation and Protected Areas

The area where the project is planned to be implemented does not include any biosphere reserve, biogenetic reserve area, wildlife protection area, nature conservation area, natural monument, nature park, special environmental protection area and special protected site, national park, agricultural area.

The 380 kV Gebze GIS Substation Project is planned to be constructed within the scope of financing from WB loan on block 477, parcel no. 1 in Kocaeli province, Gebze district, Muallimköy Neighborhood. The whole of the planned project area is forest land.

In case of any chance-find of historical or cultural value during the Project construction activities, the construction activities will be discontinued and Istanbul Provincial Culture and Tourism Directorate will be informed thereof.

In the letter by the Republic of Turkey Kocaeli Metropolitan Municipality İSU (Water and Sewerage Administration) General Directorate, Department of Real Estate and Expropriation numbered 23262 of 06.12.2017, it was stated that considering the fact that the presence of the valve chamber and water line coinciding with the corner point of planned Substation boundaries at the tip and within only 3 meters would not pose an obstacle to construction work, they should not be displaced with a view to avoiding public damages (Annex-B).

In the letter by Türk Telekomünikasyon A.Ş. numbered 236400 of 21.12.2017, it was informed that the lines belonging to the Company which are located on the site in question for the construction of Gebze GIS Substation needed to be displaced, that a displacement project was prepared as a result of examinations carried out on the site, and that in the event that the displacement price established in the 1. Survey is deposited to the account of the Company, displacement works would be commenced (Annex-L).

A flora/fauna study specific to the project area was carried out by biologist Tolga ÇETİNKAYA upon his examination of the site between 25-27 June 2019 and can be found under Annex-H.

1.6 Environmental and Social Background of the Project Area

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. The development of industry which requires high voltage energy sources will be ensured in the region.

Geographical Formations and Geology

The North Anatolian Fault runs through the Intra-pontide suture zone from Marmara sea and reaches Saros bay. It consists of two different geological structures in the section where it passes through Kocaeli district; namely, the Northern and the Southern Part.

Water Resources and Hydrogeology

A portion of the waters springing from the lands of Kocaeli reaches the Black Sea and the other portion reaches Marmara Sea. Plains located within the boundaries of Kocaeli province and on which hydrogeological studies have been carried out were found to be rich in groundwater. The provincial groundwater potential (total of secure drawable groundwater reserve) is 74.0 * 106 m3 / year. This reserve is consumed via the existing wells.

Water supply is ensured throughout Kocaeli province from Yuvacık Dam, Namazgah Dam, Lake Sapanca and Local Resources (Denizli Lagoon and other resources). Activities

to be carried out within the scope of the project shall in no way whatsoever harm the water resources.

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 carboys and plastic bottles and water to be used for other purposes shall be provided from the existing facilities (Municipal water supply). For carboys are sold on deposit, empty carboys during each order for water shall be returned to the water-supplier company. When water is supplied in carboys, the latter, emptied after use shall be separately collected and returned for recycling to companies authorized by the municipality in observance of the provisions of the Regulation on the Control of Packaging Wastes effective upon publication in the Official Gazette No. 30283 of 27.11.2017 and the Zero-Waste Regulation effective upon publication in the Official Gazette No. 30289 of 12.07.2019.

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

The region displays the characteristics of a transition climate between the Black Sea climate and the Mediterranean climate. Winters are partly warm and wet and summers are hot and mildly wet. As for snowfall, the number of days where the land is covered with snow

does not exceed 10 days. Annual precipitation amount varies between 768-1153 mm in regions.

Table3 Meteorological Statistics for Kocaeli Province

KOCAELI	Ocak	Şubat	Mart	Nisan	Mayıs	Haziran	Temmuz	Ağustos	Eylül	Ekim	Kasım	Aralık	Yıllık
	Ölçüm Periyodu (1929 - 2018)												
Ortalama Sıcaklık (°C)	6.2	6.9	8.8	13.2	17.7	21.9	23.9	23.8	20.4	16.1	12.0	8.3	14.9
Ortalama En Yüksek Sıcaklık (°C)	9.6	10.5	13.2	18.5	23.3	27.4	29.5	29.7	26.1	20.9	16.4	11.7	19.7
Ortalama En Düşük Sıcaklık (°C)	3.1	3.4	4.8	8.5	12.8	16.5	18.9	19.1	15.9	12.4	8.6	5.3	10.8
Ortalama Güneşlenme Süresi (saat)	2.5	3.0	4.0	5.7	7.3	8.9	9.6	9.1	7.1	4.8	3.6	2.6	68.2
Ortalama Yağışlı Gün Sayısı	17.1	14.9	13.8	11.3	9.8	8.2	5.7	5.1	7.2	11.5	12.3	16.3	133.2
Aylık Toplam Yağış Miktarı Ortalaması (mm)	93.7	71.7	72.6	53.7	49.3	54.0	38.5	44.4	54.0	89.4	81.6	114.0	816.9
	Ölçüm Periyodu (1929 - 2018)												
En Yüksek Sıcaklık (°C)	24.9	26.7	30.8	35.0	37.2	40.7	44.1	42.9	40.2	36.2	29.1	26.0	44.1
En Düşük Sıcaklık (°C)	-13.1	-18.0	-6.5	-1.0	1.8	4.0	10.1	10.9	4.9	2.4	-3.4	-8.8	-18.0

En yüksek ve en düşük sıcaklıkların gerçekleşme tarihini görmek için fare imlecini değerlerin üstüne getiriniz.

Günlük Toplam En Yüksek Yağış Miktarı		Günlük En Hızlı Rüzgar		En Yüksek Kar	
02.07.1942	**169.4 mm**	14.03.1973	**126.0 km/sa**	04.02.1929	**90.0 cm**

Population

Kocaeli has a population of 1,906,391. Gebze district has a population of 371,000 with 188,436 men and 182,564 women. The population of Muallimköy Neighborhood, which is the planned area of the project is 1,936.

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 proceudures, 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. According to the Turkey Earthquake Hazard Map, the peak ground acceleration value PGA 475 pertaining to the site is 0.559 with the area in question being under a high hazard.

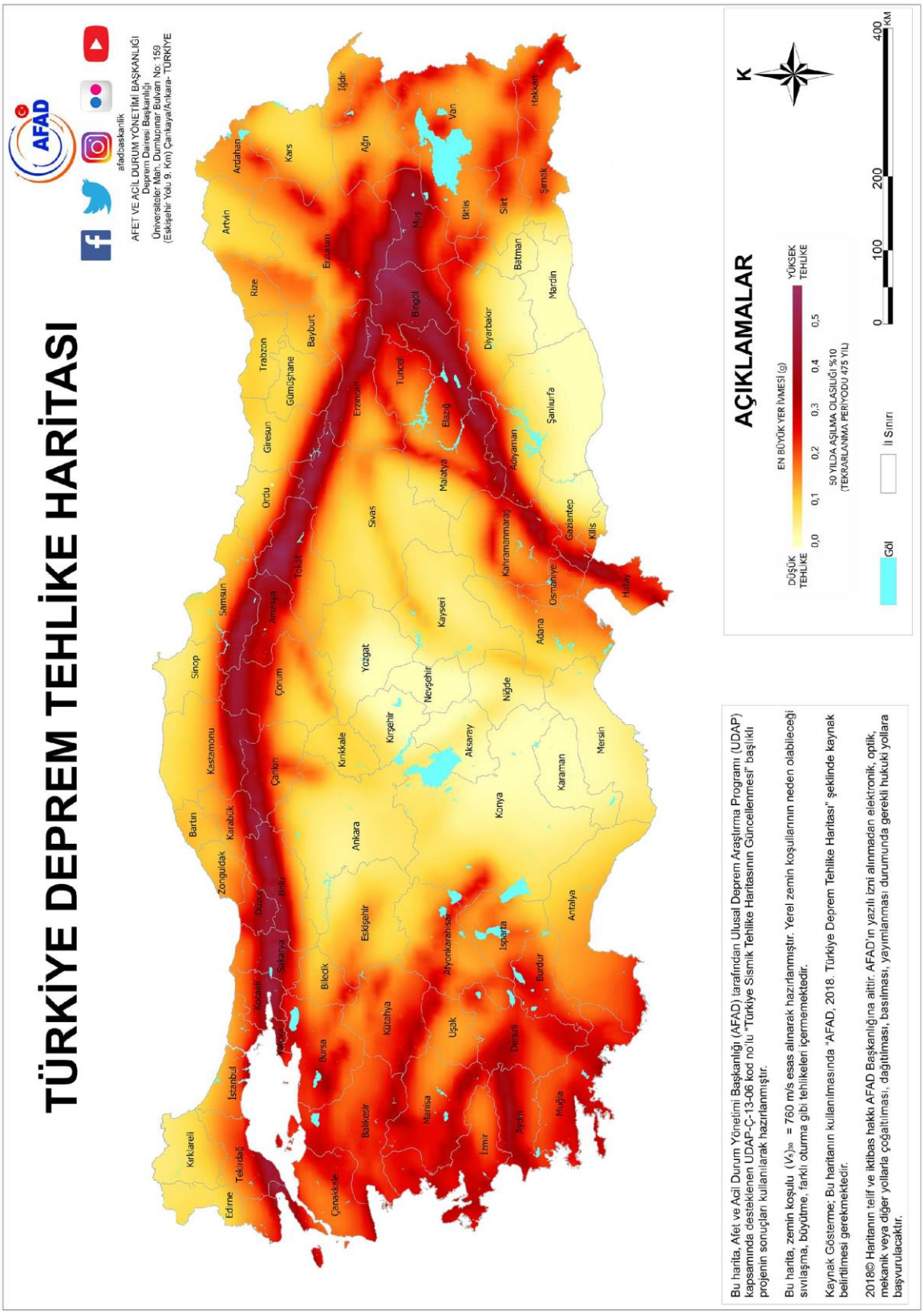


Figure4 Turkey Earthquake Hazard Map

(Source:deprem.afad.gov.tr)

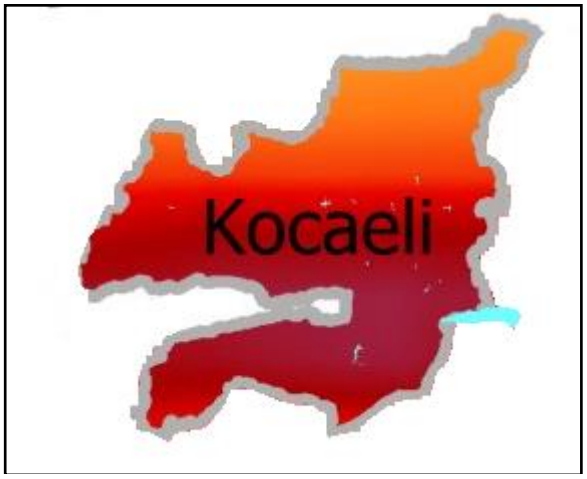


Figure5 Kocaeli Province Earthquake Hazard Map

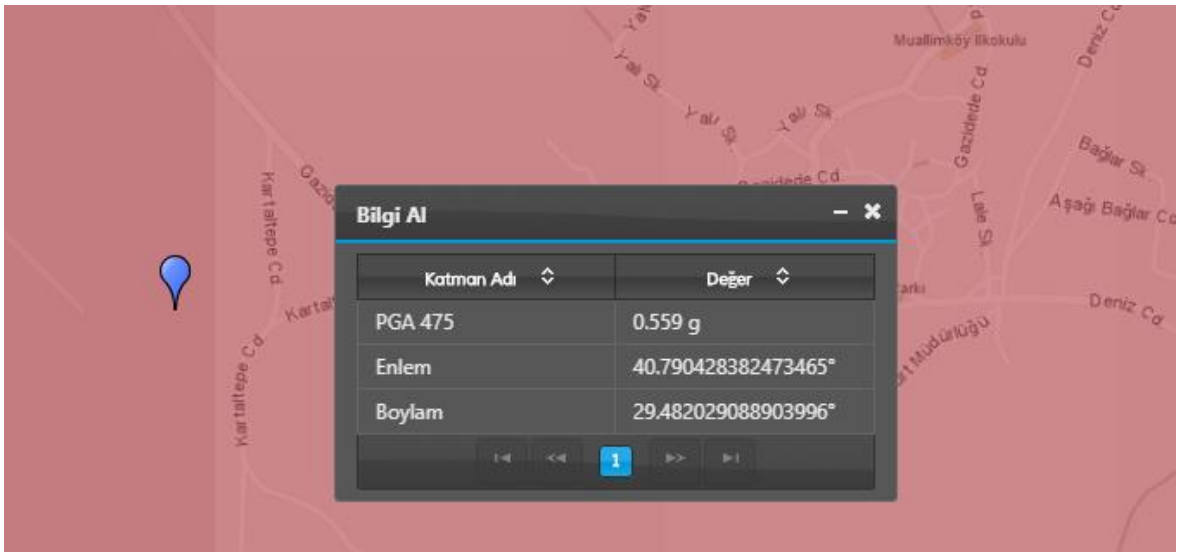


Figure6 AFAD, 2018 Turkey Earthquake Hazard Map Peak Ground Acceleration PGA 475 Value

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 TEİAS. 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.

Provisions of Turkey Building Earthquake Regulation which became effective upon being published in the Official Gazette Issue 30364 dated 18 March 2018 will be adhered to within the scope of the 380 kV Gebze GIS Substation Project in question.

Emergency Response plan for cases of earthquake, occupational accident and fire is provided under Annex-K.

2. POTENTIAL IMPACTS AND MEASURES

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.

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 carboys and plastic bottles and water to be used for other purposes shall be provided from the existing facilities (Municipal water supply).

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.

A total of 45000m^3 of material will be excavated within 100 days for the 380 kV Gebze GIS Substation project with 30000m^3 thereof being utilized as fill 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 to be 45.000 m^3:

Daily Excavation = Amount of Excavated Material / Leveling duration (days) = 45000 / 100 = 450 m3/day

Soil Density x total volume = 1.6 ton/m^3 x 450 m^3/day = 720 tons/day.

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

is found to be 720 (tons/day) / 8 (hours/day) = 90 tons/hour.

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:
90 tons/hour x 0,01 kg/ton = 0.9 kg/hour.

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 study specific to the project area was carried out by biologist Tolga ÇETİNKAYA upon his examination of the site between 25-27 June 2019 and can be found under Annex-H. Precautions regarding flora/fauna have been specified in Annex-H, 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.
- Following the completion of the construction of the power transmission line the area (topography) shall be restored and following the laying of the top vegetative soil, landscaping activities shall be proceeded with using local plant species.
- 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.
- 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.
- A training schedule/program shall be devised for project staff. During the training, awareness shall be raised regarding endemic plants, birds and their distribution in the area as well as what to do upon any encounter with fauna species, field scanning prior to construction, etc.
- Spikes shall be 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.

Feasible and cost-efficient measures to prevent the potential negative impacts of 380 kV Gebze 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 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	Scope	Measures**	Cost	Responsible Institution*	Starting date	Completion
PRECONSTRUCTION	Flora&Fauna	• Relevant training on flora and fauna elements that could be found around the Project area will be provided to staff. • The site visit for identification of any fauna elements to be distracted from the Project site, to suitable environments..	No additional cost	TEIAS	Before construction starts	Start of construction
CONSTRUCTION	Cultural and historical assets	• Chance-find procedure will be established. • In the event of any encounters with any cultural assets construction shall be stopped and respective Cultural and Natural Assets Conservation Boards shall be notified whereby no construction activity shall be carried out until the response from the Board has been received. • Construction activities will be resumed only after a positive response.	No additional cost	Contractor	Start of construction works	Completion of construction works

Stage	Scope	Measures**	Cost	Responsible Institution*	Starting date	Completion
	Dust - particulate matter	• 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. • 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. • 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. • All the vehicles to be used must have exhaust emission permits. • Tires of trucks operated on site shall be washed down before leaving premises (for the streets).	Not high	Contractor	Start of excavation	Completion of excavation

Stage	Scope	Measures**	Cost	Responsible Institution*	Starting date	Completion
CONSTRUCTION	Noise	• 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. • Those living close-by shall be notified and informed throughout construction. • 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. • 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.	No additional cost	Contractor	Start of construction works	Completion of construction works
	Excavated matter, solid and hazardous wastes from the construction site	• Excavation wastes shall be disposed of at the neares dump-site duly licensed by İstanbul Metropolitan Municipality. • 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. • Domestic organic wastes shall be given to the municipality concerned to be dumped at the relevant Solid Waste Landfill. • Wastes such as oil, paint, etc. shall be separately collected in labeled, metal containers and handed out to a licensed recycling company.	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	Scope	Measures**	Cost	Responsible Institution*	Starting date	Completion
CONSTRUCTION	Wastes from the Parking Lot	• To the extent possible, vehicle maintenance shall not be carried out on the construction site. • 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. • Barrels shall be stored on impermeable grounds protected from rain and the sun, and in a covered area, with adequate fire protection. • Such materials as batteries, tires, etc. to generate from the operation of machinery and vehicles shall be handed over to licensed companies for disposal.	Not high	Contractor	Start of construction works	Completion of construction works

Stage	Scope	Measures**	Cost	Responsible Institution*	Starting date	Completion
	Health and safety	• Workers shall be provided with all required protective equipment such as hard-hats, safety harnesses, OHS overalls, goggles, gloves, hard-shoes, etc. • Workers shall receive 'Occupational Health and 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. • Risk assessment shall be carried out per the outcome of which measures to be employed on site shall be determined. • 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 TEİAS, 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 TEİAS and the World Bank in 30 days. • SS and ETL specifications shall be observed throughout the lifecycle of the project, whereby a full-time Categoy C OHS expert shall be employed.	Within project budget;	Contractor	Start of construction works	Completion of construction works

Stage	Scope	Measures**	Cost	Responsible Institution*	Starting date	Completion
	Traffic and Pedestrian Safety	• Measures needed to ensure safe traffic flow shall be ensured by the intermediary of respective institutions. • Signposts that read 'Caution,' 'No trespassing,' 'Restricted Entry;' etc. shall be placed in view of safety of the locals. • Observance of speed limits shall beensured. • Derivers and operators of vehicles and heavy machinery to be used throughout operations shall be informed regarding safe driving. • Existing road network shall not incur any damages during transport operations. • 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.	Not high	Contractor	Start of construction works	Completion of construction works

	Flora /Funa	• Areas not-to-be-used following the completion of construction works shall be topographically restored. • 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. • 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. • A training schedule/program shall be devised for project staff. During the training, awareness shall be raised regarding endemic plants, birds and their distribution in the area as well as what to do upon any encounter with fauna species, field scanning prior to construction, etc.	Not high	Contractor	Start of construction works	Completion of construction works

Stage	Scope	Measures**	Cost	Responsible Institution*	Starting date	Completion
	Landscaping	• Construction site shall be restored. • No hazardous, solid, liquid and/or construction wastes shall be left behind inside the area. • Translocation of trees to be removed from the project site.	Within project budget;	Contractor	Completion of construction works	Commissioning of the substation

Stage	Scope	Measures**	Cost	Responsible Institution*	Starting date	Completion
OPERATION	Transformer Lubes	• Transformer lubes shall not be temporarily stores on site unless compulsory. • 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.	Not high	Contractor	Start of storage of transformer lubes	Until lubes are transformed to the transformer
	Electromagnetic Field (EMF)	• SS construction shall observe global standards. • In the event of grounding-related issues, grounding measurements shall be taken.	Not high	Contractor/TEİAS	Start of construction	End of SS economic life
	Noise	• Measurements shall be made in the event of receiving any grievances from near-by dwellers along the SS border.	Not high	TEİAS	Commissioning of the substation	End of SS economic life
	Health and safety	• Workers shall be provided with technical training and PPE as ell as respective gear. • Worker compliance with any and all OHS requirements as well as respective regulations shall be ensured including checks as required.	Under operation budget	TEİAS	Commissioning of the substation	End of SS economic life
	Risk of fire	• 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. • Transformers shall be fitted with automated fire extinguisher systems.	High	TEİAS	Commissioning of the substation	End of SS economic life

Stage	Scope	Measures**	Cost	Responsible Institution*	Starting date	Completion
	SF6 gas	• Gas pressure shall be measured in all sections throughout the operation period. • Employees will be trained on job hazards and occupational health and safety measures regarding SF6 gas and appropriate personal protectice equipment will be supplied.	Under operation budget	TEİAS	Commissioning of the substation	End of SS economic life

**Applies when works concerned are awarded to any Contractor. Otherwise, responsibilities defined for the Contractor shall rest with TEİAS.

***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 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	Scope	Which parameters to monitor?	Where to monitor Parameters?	How to monitor parameters/type of monitoring equipment?	When to monitor parameters-measurement frequency/continuous measurement?	Why monitor Parameters?	Cost	Controlling authority	Starting date	Completion
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
CONSTRUCTION	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 Cultral and Natural Assets Conservation Boards.	Protection of cultural assetes, ensuring compliance with the Law on Protection of Cultural and Natural Assests	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

Stage	Scope	Which parameters to monitor?	Where to monitor Parameters?	How to monitor parameters/type of monitoring equipment?	When to monitor parameters-measurement frequency/continuous measurement?	Why monitor Parameters?	Cost	Controlling authority	Starting date	Completion
	Dust - particulate matter	Dust from the mobility and exhaust of excavation and construction machinery (mg/Nm3) 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)	TEİAS Provincial Directorate of Environment and Urbanization	Start of construction works	Completion of construction works
CONSTRUCTION	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	TEİAS Provincial Directorate of Environment and Urbanization	Start of construction works	Completion of construction works

Stage	Scope	Which parameters to monitor?	Where to monitor Parameters?	How to monitor parameters/type of monitoring equipment?	When to monitor parameters-measurement frequency/continuous measurement?	Why monitor Parameters?	Cost	Controlling authority	Starting date	Completion
	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 abd Soil Pollution and on Locally Polluted Sites	No additional costs (within project budget)	TEİAS Municipality	Start of construction works	Completion of construction works

Stage	Scope	Which parameters to monitor?	Where to monitor Parameters?	How to monitor parameters/type of monitoring equipment?	When to monitor parameters-measurement frequency/continuous measurement?	Why monitor Parameters?	Cost	Controlling authority	Starting date	Completion
CONSTRUCTION	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)	To ensure adherence to Regulation on the Control of Soil Pollution and Locally Polluted Areas, Regulation on the Control of Wastes and the Regulation on 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.	TEİAS Contractor Municipality Provincial Directorate of Environment and Urbanization	Start of construction works	Completion of construction works

Stage	Scope	Which parameters to monitor?	Where to monitor Parameters?	How to monitor parameters/type of monitoring equipment?	When to monitor parameters-measurement frequency/continuous measurement?	Why monitor Parameters?	Cost	Controlling authority	Starting date	Completion
CONSTRUCTION	Wastes from the machinery park	Waste lubes, batteries, expired tires and scrap electronic on-board materials	At the machinery park	Documentation check on waste management 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 management Visual	Throughout storage period	To prevent any leakages and seeps in the area for storing lubes	Not high	TEİAS	Start of Storage	End of Storage

Stage	Scope	Which parameters to monitor?	Where to monitor Parameters?	How to monitor parameters/type of monitoring equipment?	When to monitor parameters-measurement frequency/continuous measurement?	Why monitor Parameters?	Cost	Controlling authority	Starting date	Completion
	Health and safety	Health and safety tarining documents Training certificates to prove training participation Safety equipment used on construction site such as hard hats, gloves, shoes, safety harnesses, etc. Accidents statistics	At construction sites	Documentation check on OHS Visual	At the beginning of each work process Daily Monthly	Ensure adherence to the Regulation on Occupational Health and Safety	No additional cost (Within project budget)	TEİAS Contractor	Start of construction works	Completion of construction works

Stage	Scope	Which parameters to monitor?	Where to monitor Parameters?	How to monitor parameters/type of monitoring equipment?	When to monitor parameters-measurement frequency/continuous measurement?	Why monitor Parameters?	Cost	Controlling authority	Starting date	Completion
CONSTRUCTION	Landscaping	Wastes (excavation, solid, liquid, hazardous, etc.) Reinstatement of the construction site and translocation of the trees to be removed from the project site	At substation area Areas where trees are translocated	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)	TEİAS Contractor	Before start of construction activities	Start of construction activities
Construction	Flora/Fauna	Noise minimizing structure Establishment of structures for distracting birds	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
OPERATION	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	TEİAS	Commissioning of the substation	End of SS economic life

Stage	Scope	Which parameters to monitor?	Where to monitor Parameters?	How to monitor parameters/type of monitoring equipment?	When to monitor parameters-measurement frequency/continuous measurement?	Why monitor Parameters?	Cost	Controlling authority	Starting date	Completion
	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	TEİAS	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	Documentation on OHS 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)	TEİAS	Commissioning of the substation	End of SS economic life

Stage	Scope	Which parameters to monitor?	Where to monitor Parameters?	How to monitor parameters/type of monitoring equipment?	When to monitor parameters-measurement frequency/continuous measurement?	Why monitor Parameters?	Cost	Controlling authority	Starting date	Completion
	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 aby 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)	TEİAS	Commissioning of the substation	End of SS economic life
	SF6 Gas	SF6 gas pressure	At all sections	With pressiometer	Throughout operation (continuous)	…	No additional costs (within operational budget)	TEİAS Regional Directorate No. 4	Commissioning of the substation	End of SS economic life

Stage	Scope	Which parameters to monitor?	Where to monitor Parameters?	How to monitor parameters/type of monitoring equipment?	When to monitor parameters-measurement frequency/continuous measurement?	Why monitor Parameters?	Cost	Controlling authority	Starting date	Completion
	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)	TEİAS	Commissioning of the substation	End of SS economic life

Stage	Scope	Which parameters to monitor?	Where to monitor Parameters?	How to monitor parameters/type of monitoring equipment?	When to monitor parameters-measurement frequency/continuous measurement?	Why monitor Parameters?	Cost	Controlling authority	Starting date	Completion
OPERATION	Solid and hazardous wastes to generate during operations (batteries, waste lubes)	Pollution to generate inside the substation area (wastes, smell, etc.) Wastes from failed equipment and fittings Pollutants in waste transformer lubes (Arsenic, Cadmium, Lead, Total Halogens, PCB, spark point)	At substation area	Documentation check on waste management Visual Test methodology	Throughout operation Upon failure, breakdown and expiry of economic life of equipment Upon expiry of the economic life of transformer lubes	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. To ensure adherence to the Regulation on the Control of Waste Lubes	Not high although varies between municipalities and/or licensed recycling plant Not high although depends on the measurement company	TEİAS Municipalities Provincial Directorate of Environment and Urbanization	Commissioning of the substation	End of SS economic life

4. INSTITUTIONAL ARRANGEMENTS

This section shall set forth matters and disclosures in relation with how monitoring data shall be availed of to delineate institutional liabilities concerning measures to be employed and respective procedures, the linkages of the latter with environmental management, flow of environmental data, and ensuring a reliable environmental performance.

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

The 'Monitoring Plan designed to control the implementation conditions of the principles and procedures specified in 'Section 2 of the Chapter on 'Precauitionary Measures Plan' prepared in view of minimizing negative impacts from activities to be carried out during the planning/project phase as well as construction and operational stages of the 280 kV Gebze GIS project, is provided in Section 3. Plans concerned is inclusive also of institutions and bodies responsible for provisions concerned. Precautionary Measures and the Monitoring Plan constitute the basis of the 'Environmental and Social Management Plan' prepared within the scope of the section entitled 'Political Legal and Administrative Framework' under EIA 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 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 Assesment 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 Gebze 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

For cultural assets are critical for economic and social development, these shall be taken into consideration during all project activities. Potential impacts are demonstrated as integral parts of the environmental assessment process. TEİAS is responsible for the prevention or mitigation of the impact of financed projects on physical or cultural resources. Therefore, TEİAS 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

TEİAS 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 TEİAS' 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 Gebze 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 (TEIAS) on a quarterly basis.

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

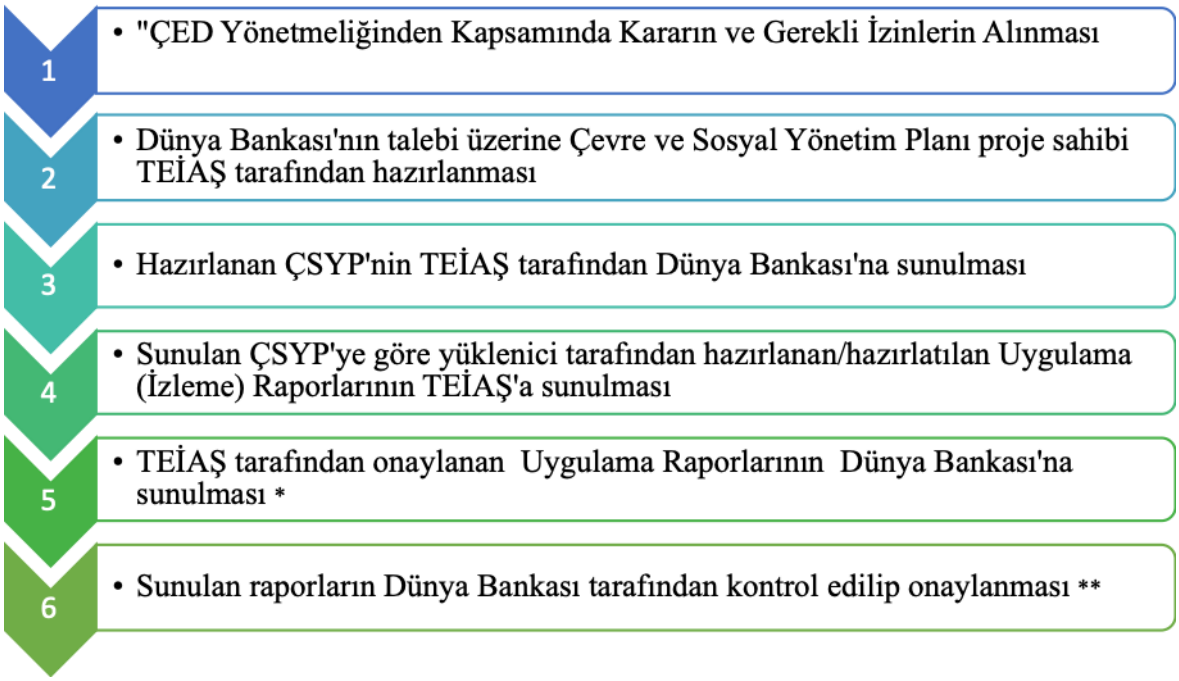


Figure7: Environmental Information Flow

4.3 Project Information Flow

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

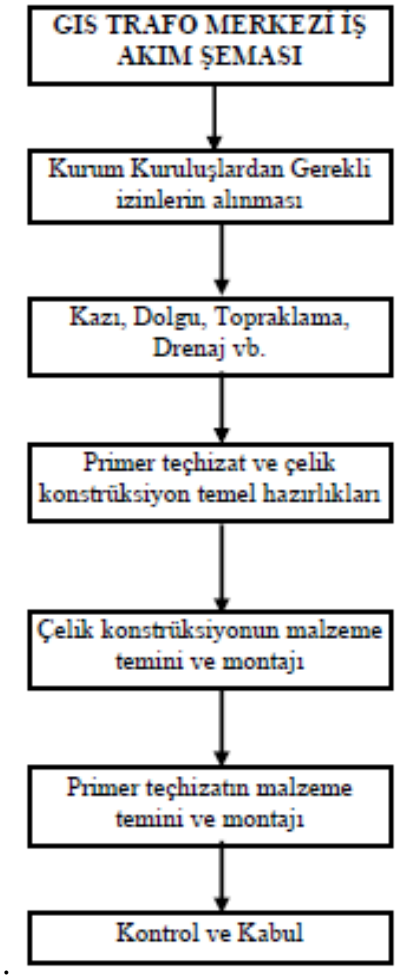


Figure8 Project Information Flow

Once the proposed project proceeds into the construction stage, the project owner (TEİAS) 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 TEİAS.

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 Reigonal 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 upob 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

Activity	Institutional Responsibility
Collection of Monitoring Data Construction	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 (TEİAS) on a quarterly basis.
Data Analysis Construction	The related Regional Directorate of TEIAS (4th 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).
Management 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.

5. INTERVIEWS AND CONSULTATIONS WITH PROJECT AFFECTED GROUPS AND STAKEHOLDERS

Muallimköy neighborhood of Gebze district of Kocaeli 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 Gebze GIS Substation.

As part of the project, and despite the lacking provisions in the Turkish legislation regarding the provision of information on public consultations and land acquisition, mukhtars have been informed by TEİAS, as required, and for further information of affected communities on environmental and social issues and the Public Information Brochure (Annex E) an the draft version of the ESMP were prepared and submitted to Mr. Haydar Yılmaz, the mukhtar of the Muallinköy Neighborhood on the date of 12.04.2019 for collection of objections and recommendations (Annex C) and the whole process was also put on TEİAS website (http://www.teias.gov.tr) (Annex E). Additionally, the public was informed through the official Instagram, Twitter and Facebook pages of TEİAS (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.

The neighborhood headman stated on 16.05.2017 that no feedback has been provided about the subject project (Annex-D).

The people were informed that a visit would be made to the headman's office for feedback and that answers from people who want an audience would be answered. Since only the headman was present in the headman's office, a list of participants could not be drawn up and the people showed no interest to the project.

Furthermore, TEİAS expropriation team maintains its contact (mostly via telephony but also face-to-face) property owners and others effected. The team shall continue collecting social and economic data as and if required.

Such information and contact shall be sustained throughout the entire land acquisition process through visiting TEİAS teams from TEİAS Regional Directorate. Meetings held, list

of participants and concerns/questions shall be documented in monitoring reports every 3 months.

The 'TEİAS Stakeholder Relations Grievance and Request Management Procedure' designed by the Institutional Communication Directorate of TEİAS has been published within the scope of quality management.

Grivance Redress Mechanism

Affected persons shall be informed of the environmental and social activities supported by the grievance mechanism set up by TEİAS prior to the project. The system allows regular and orderly archiving of grievances, concerns and requests of affected persons as well as for the timely evaluation thereof.

Grievances and complains can include a variety of issues from environmental impacts on areas coinciding with project components to compensation. TEİAS shall ensure that procedures are in place as required to remedy the impacts on affected people in a timely and satisfactory manner as well as not causing further grievances.

Throughout the project, TEİAS shall endeavor as required to remedy the grievance mechanism of the project during any and all consultative and negotiation procedures regarding affected persons and settlements. TEİAS can allocate an accessible point of contact (name/surname) to receive any and all project-related queries (concerns, grievances, requests, etc.) including those in relation with land or property acquisition as well as land related ones. This person (point of contact) shall be responsible to keep records of grievances/complaints filed. Regional Directorate of TEİAS shall ensure that all grievances are handled and resolved in a timely manner in line with the World Bank Policy requirements.

Addresses and contact phone numbers of both the Company and authorized staff have been shared with the mukhtars. In the event of any queries regarding any issues, the Chief Engineer of Expropriation and expropriation services staff are accessible on +90 (216)-521 58 00, and this information has been shared with persons and parties concerned.

Grievances shall first be handled at local offices of TEİAS: The grievance redress mechanism established is as follows:

Table 7 Grievance Mechanism

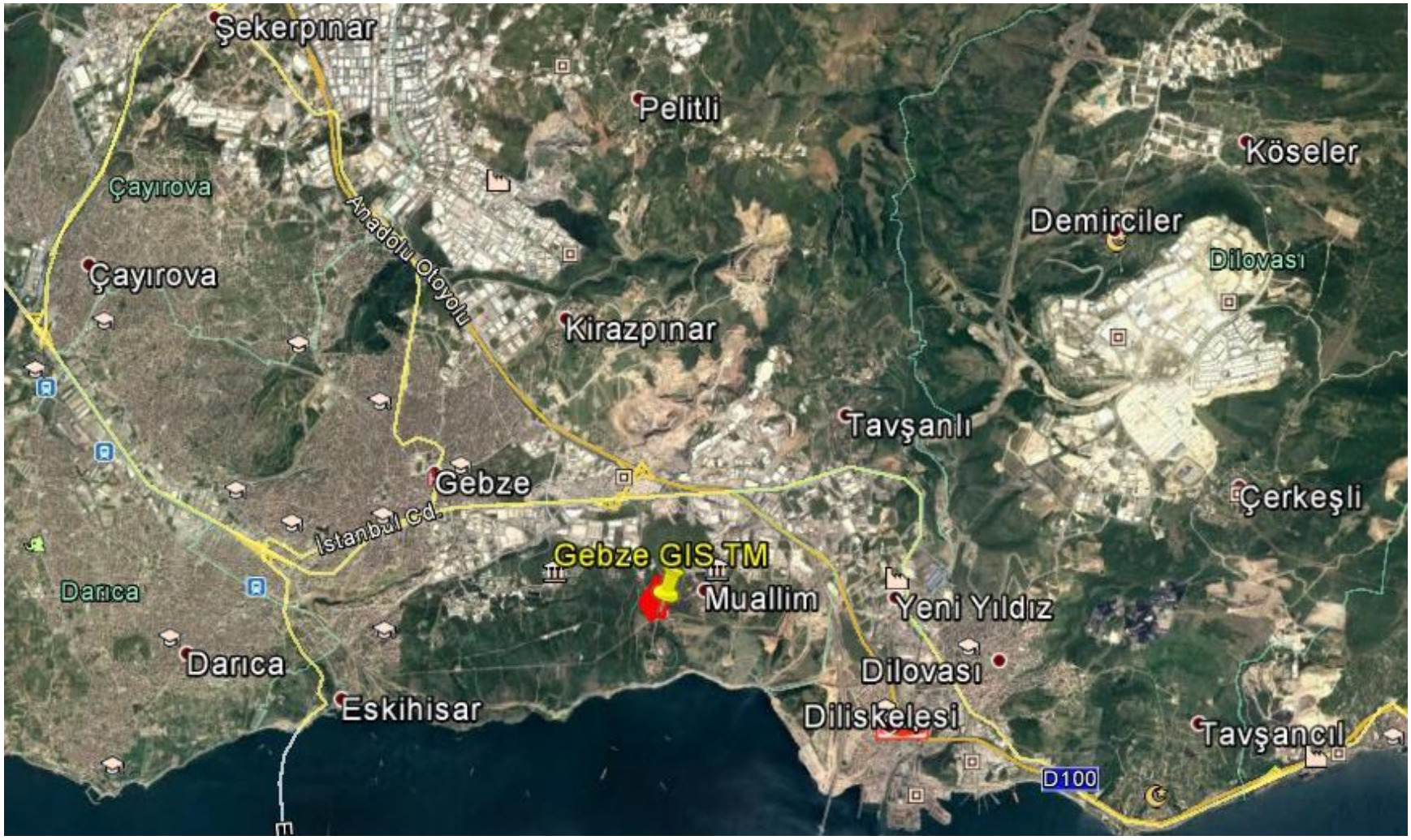
Level	Authority	Application via:	Actions	Process
1	**TEİAS Regional Directorate No. 4** N.Kemal Mah.Sütçü Cad.Şeker Maslak Sok.No:9 PK:18 34762 Ümraniye/İSTANBUL Phone: +90 (216)-521 58 00 (3 LINE) Fax: +90 (216)-328 11 93	Grievance or query shall be handled	personally (face-to-face), via phone or correspondence. Feedback is provided. In the event of failure to remedy the situation, legal remedy shall be sought.	1 Week
2	**TEİAS General Directorate Department of Environment and Expropriation** Nasuh Akar Mah. Türkocağı Cad. No:2/14 Çankaya/ANKARA Tel : +90 312 203 86 11 Fax : +90 312 203 87 17	Grievance or query shall be handled	personally (face-to-face), via phone or correspondence. Feedback is provided. In the event of failure to remedy the situation, legal remedy shall be sought.	2 Weeks
3	Respective Court of First Instance	Conducted upon correspondence	Within the remit of legal legislation	Within the Framework of Legal Process

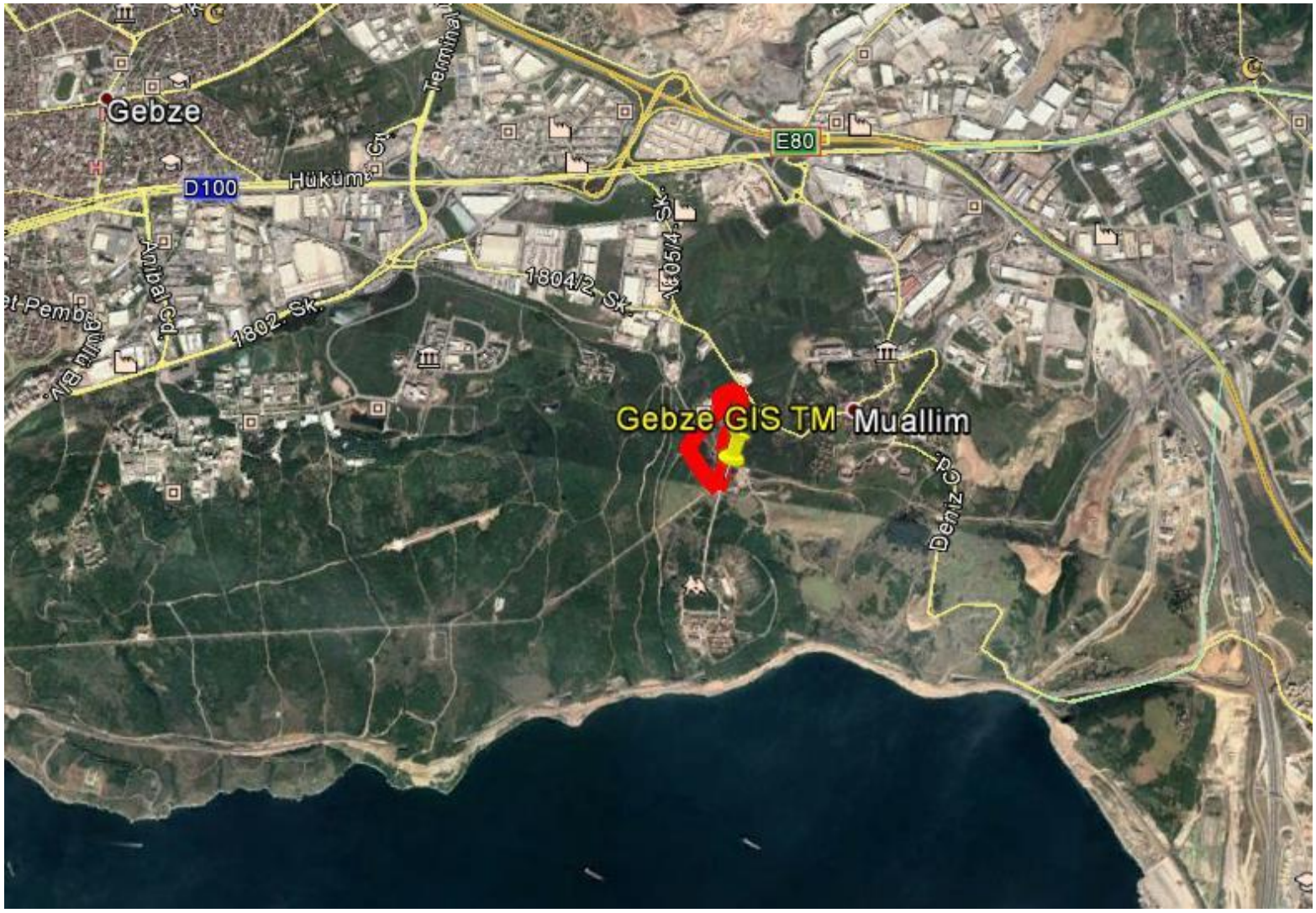
The people have been informed that they could apply to TEIAS Directorate General or 4th Regional Directorate in case they have any compliant or want to obtain any information during the project's construction and operation stages. The necessary contact details (phone number, fax number, address, etc.) were left with the neighborhood headman. Please state if you have received any complaint / question or suggestion recorded to date. These complaints may have been communicated also through the Presidential Communication Center (CİMER).

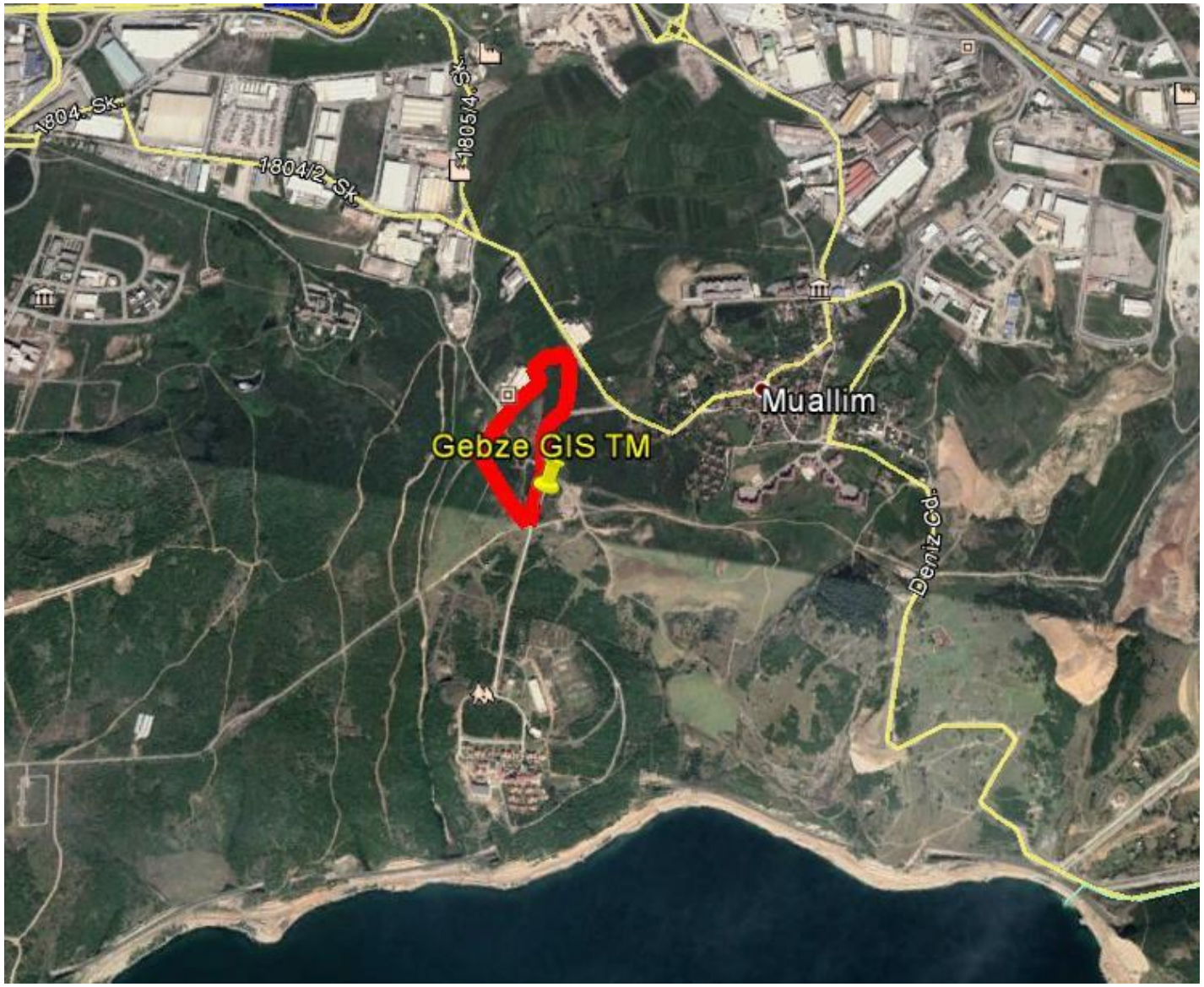
ANNEXES

LIST OF ANNEXES

Annex-A Satellite Imagery and Photos


Şekerpınar
Pelitli
Köseler
Çayırova
Anadolu Otoyolu
Demirciler
Dilovası
Çayırova
Kirazpınar
Tavşanlı
Gebze
Çerkeşli
İstanbul Cd.
Gebze GIS TM
Muallim
Darıca
Yeni Yıldız
Darıca
Dilovası
Eskihisar
Diliskelesi
Tavşancıl
D100


Gebze
D100
Hüküm
E80
1804/2. Sk.
1802. Sk.
Gebze GIS TM
Muallim


1804. Sk.
1804/2. Sk.
1805/4. Sk.
Muallim
Gebze GIS TM
Deniz Cd.

Annex-B Opinion of Republic of Turkey Kocaeli Metropolitan Municipality DG İSU (Water and Sewerage Administration)

REPUBLIC OF TURKEY
KOCAELİ METROPOLITAN MUNICİPALITY WATER AND SEWERAGE ADMINISTRATION (İSU)
Department of Real Estate and Expropriation

06/12/2017

Issue :20885824 *23262*
Subject :Re Gebze GIS Construction

REPUBLIC OF TURKEY
TURKISH ELECTRICITY TRANSMISSION CORPORATION DIRECTORATE GENERAL
4. REGIONAL DIRECTORATE (ANATOLIA/İSTANBUL)
Directorate of Facilities and Control
N. Kemal Mah. Sütçü Cad. Şeker Maslak Sokak No:9 PK:18 34762 Ümraniye/İSTANBUL

Ref.: **a)** Your letter dated 30.11.2017 with Issue E.464672.
b) Our letter dated 25.04.2017 with Issue E.8276.

With your letter specified in Ref., a request was made with regard to your construction of Gebze GIS that the water line and our fixed facilities (Valve Chamber) needs to be displaced outside of the boundaries of your land and that the price for such displacement to be calculated and notified to you.

As stated in our letter in Ref. b), a positive opinion was provided for your construction of Gebze GIS on the condition that no structure is built and no trees are planted on a band of 3 meters width on and around the line route and the facilities itself in order for our Administration to be able to carry out the maintenance and repair work which may be needed.

As a result of a re-evaluation, since it was deemed that the Valve chamber and water line belonging to our Administration and coinciding only with a 3-meter endpoint in one corner of the boundaries of the land of a surface area of 70.000 m2 on which the facilities are planned to be constructed by you shall not constitute an obstacle to your work, it was found that they should not be displaced with a view to avoiding public damage and the calculation of the displacement price was considered to be unnecessary.

Respectfully submitted for necessary action.

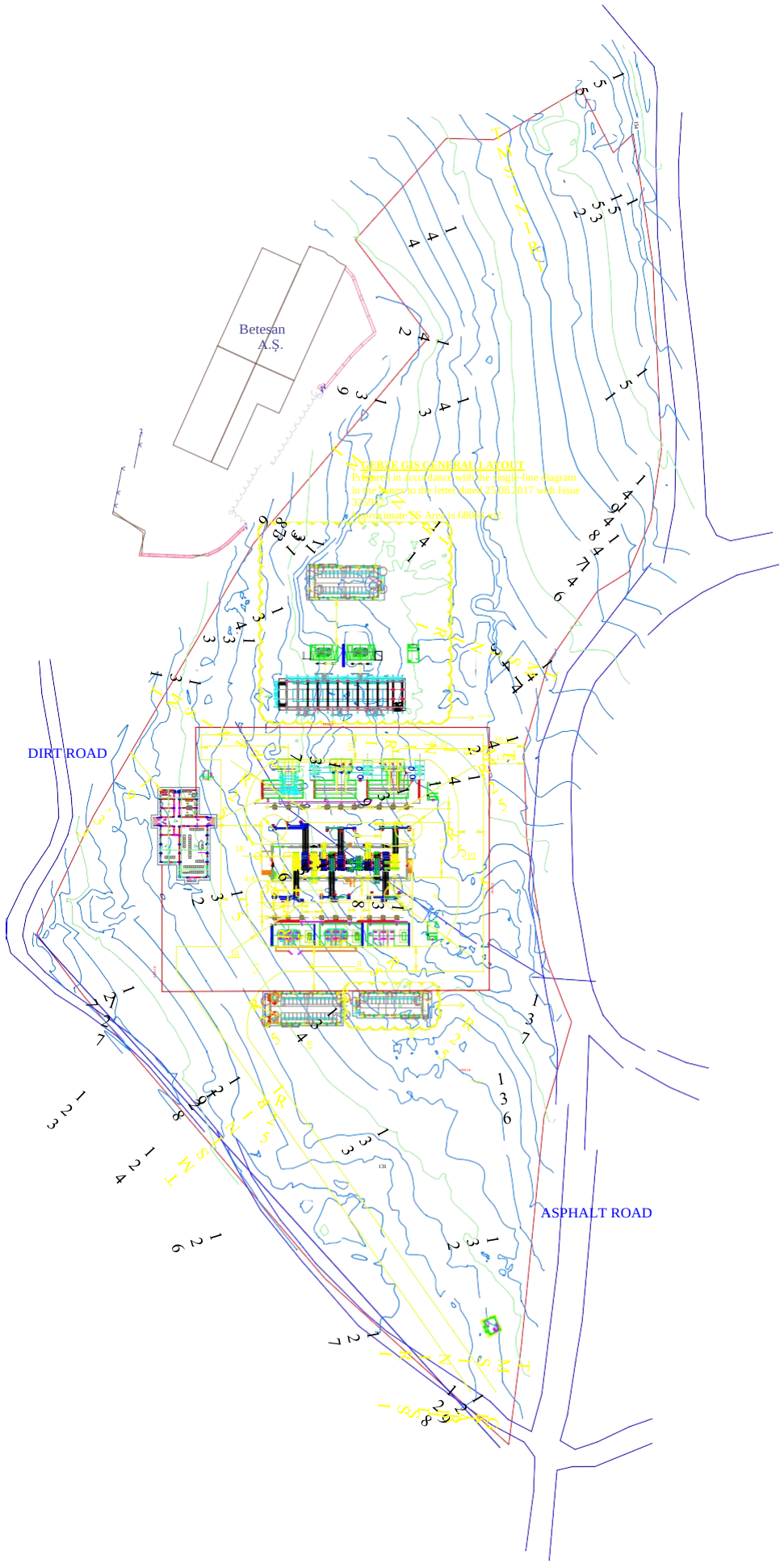
Süleyman KARABAYIR
Head of the Department of Real Estate and Expropriation

Alaeddin ALKAÇ
Deputy Director General of Investments

Bu evrakın 5070 Sayılı Kanun gereğince E-İMZA ile imzalandığı tasdik olunur.
06/12/2017
Yasemin CEYHAN DEMİREL
Genel Evrak Şefi

Address: *On the D-100 Highway 41100 İzmit/KOCAELİ*
Phone: *(0262) 317 30 00* ***Fax:*** *0(262) 317 32 98*
Web: *http://www.isu.gov.tr*
For Detailed Information: *Yunus EMRE DERİCİ*
e-mail: *yederici@isu.gov.tr*
Phone: *(0262) 317 33 75*

Annex-C Principle Layout



C:\Users\ekremkurt\Desktop\YENİ TM YERLEŞİMİ\Gebze TM\380 kV Gebze GIS Yerlesim 2007 Ek 003(Ihaleye Esas TUR).dwg, 1.10.2019 09:07:23, DWG To PDF.pc3

Annex-D Pictures of Existing GIS Substations


AÇIK ŞALT


GIS TM
TEİAŞ
ISUZU


GIS TM


GIS TM

Annex-E 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.

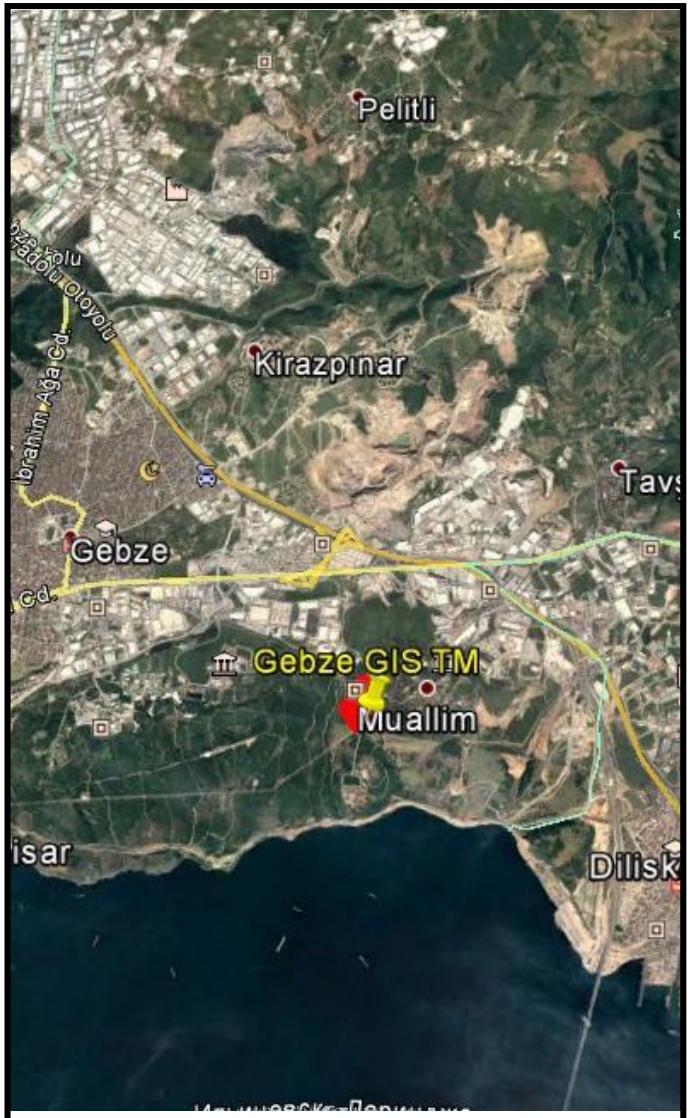
- Excavation debris to generate shall be used as filler material at the construction site. In the event of generation of excavation wastes, such wastes shall be disposed of in areas permitted by the municipality.

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 regulary gauged.

Project Stages

- Pre-survey and Land Selection
- Preparation of the Environmental Impact Assessme and the Environmental Management Plan
- Receipt of Permits from Respective Authorities
- Construction (Facility)
- Operation



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 4. Regional Directorate
N.Kemal Mah.Sütçü Cad.Şeker Maslak Sok.No:9 PK:18 34762 Ümraniye/İSTANBUL
Phone: 0 (216)-521 58 00 (3 LINE) **Fax:** 0 (216)-328 11 93

TEİAŞ

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

380 kV GEBZE GIS SUBSTATION (GAS INSULATED SUBSTATION) PUBLIC INFORMATION BROCHURE

KOCAELİ PROVINCE, GEBZE DISTRICT MUALLİMKÖY NEIGHBORHOOD

Project Description and Objective

Project Description:

The 380 kV Gebze GIS Substation Project is planned to be constructed within the scope of financing from World Bank loan on block 477, parcel no. 1 in Kocaeli province, Gebze district, Muallimköy Neighborhood. The whole of the planned project area is forest land.

Objective of the Project:

Marmara Region, which is the most densely populated region of our country, has a great volume of industry and trade. This potential in Marmara grows exponentially with each passing year. In line with such development, there is a need for uninterrupted energy provision. In order to be able to meet the energy need of Marmara Region which is rising/is going to rise, one needs to increase the installed capacity in the region due to the exhaustion of the capacities of existing substations. In the current situation, there are two substations which feed the region in question. These are Tepeören and Gebze OIZ Substations.

The 380/154/33 kV Tepeören Substation is one with an installed capacity of 650 MVA with agreed capacities held by 6 different OIZs manufacturing in various industrial branches with leather, automotive and chemicals being the most prominent (Anadolu Yakası, Birlik, Deri, Otomotiv, Tuzla Kimya Sanayicileri, Tuzla) and 2 transmission companies (AYEDAŞ and SEDAŞ) and with a central agreed capacity reaching 448 MW. An occupancy limit of 70% has been reached under these circumstances.

Another substation which feeds the region, the Gebze OIZ Substation has a system utilization agreement of a total of 359 MW in the current situation.

Since Gebze GIS will also address some of the loads on Gebze OIZ Substation belonging to SEDAŞ to which 4 OIZs connected, along with Tepeören SS, it will be possible to decrease the loads on Gebze OIZ SS. With an installed capacity of 4x100 MVA against an agreed capacity of 359 MW, Gebze OIZ Substation has already exceeded the occupancy criteria of 70%. In order to ensure the secure supply of the existing and future additional loads of the region in question, Gebze GIS project was included under the Investment Program of our Enterprise. With the setting up of Gebze GIS, an alternative feed source will be provided for urban and industrial loads at Gebze and Çayırova Districts of Kocaeli Province and Tuzla District of İstanbul Province. In the event that Gebze GIS is not constructed, considering the substation loads in the current situation, it

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.)a t 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.

- Construction works shall be carried out between 7 AM and 7 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 Istanbul, 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.
- The EAAA strength of the planned 380 kV Çiftlikköy GIS SS shall also remain below threshold values.

MINUTES

In order to inform the public within the specified time and to receive their opinions and suggestions on the 380 kV GEBZE GIS (Gas Insulated Substation) the construction and operation of which is planned by our organization, the brochures and the Draft Environmental Management Plan (EMP) belonging to the project needs to be delivered to the relevant muhtar's offices by keeping minutes.

In line with this, the information brochure and environmental management plan was delivered to the Muallimköy Neighborhood Muhtar's Office.

The minutes hereby were signed in 3 copies by those mentioned hereinbelow on 12/04/2019.

TEİAŞ
4. Regional Directorate

Delivered by

Muallimköy Neighborhood Muhtar's Office

Teslim Alan

M.Haydar YILMAZ
Muallimköy Mahallesi
Muhtarı

Annex-F Feedback Form

FEEDBACK FORM

For the **"380 kV Gebze GIS"** project the brochures and draft environmental management plans of which were submitted to our party for the information and comments and suggestions of the public;

☑ No feedback was provided.

☐ Feedback concerns the particulars specified below. (Relevant document, petition etc.)

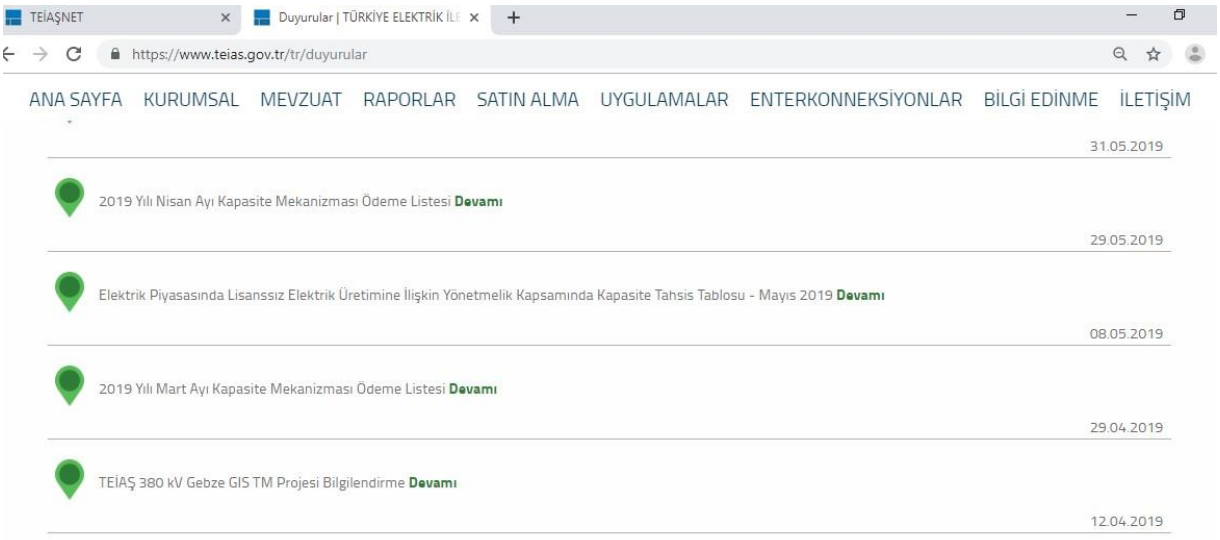
•

REGIONAL DIRECTORATE PERSONNEL

Elif UYANIK
Çevre Mühendisi

RELEVANT MUHTAR

Annex-G Visuals for the Web and Social Media Announcements



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Annex-H Flora-Fauna Study of the Project Area

Flora ve Fauna

Books, “Türkiye bitkileri kırmızı kitabı" (T. Ekim, M. Koyuncu, M. Vural, H. Duman, Z. Aytaç and N. Adıgüzel), "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 area, information at http://turkherb.ibu.edu.tr, https://bizimbitkiler.org.tr have been availed.

The first study on vascular plants in and around Kocaeli province was performed by Akıncı and Özhatay (2004). In the study, the flora of Keltepe (Kartepe) which constitutes the highest point of the mountain range of Samanlı Mountains was investigated and a plant taxon of 418 species and subspecies belonging to 80 families were identified. Later on, in the study of the flora of Ballıkayalar Valley (Gebze-Kocaeli) performed by Akaydın et al. (2006) 416 species, subspecies and varieties belonging to 74 families; in the study of the flora of Beşkayalar Valley
(Gölcük-Kocaeli) performed by Akaydın et al. (2006) 291 species, subspecies and varieties belonging to 73 families; in the study titled İzmit Körfezi’nin Güney Kesiminde Etnobotanik Bir Araştırma by Kızılarslan (2008) 118 species, subspecies and varieties; in the study titled Flora of Arslanbey (İzmit/Turkey) and cultivated plants in Izmit city center by Arslan and Sağıroğlu (2011) 489 species, subspecies and varieties belonging to 101 families; in the evaluation of plants distributed in Kocaeli in terms of endemic species and danger groups performed by Özen and Acemi (2011) and in the study of the flora of Yuvacık Dam Reservoir (Kocaeli-Sakarya) performed by Efe et al. (2013) 485 species, subspecies and varieties belonging to 82 families; in the study of the flora of Kocaeli-Karamürsel-Yalakdere township and its vicinity performed by Yılancıl and Sağıroğlu (2013) 409 species, subspecies and varieties belonging to 79 families; in the study of the flora of Hereke (Kocaeli) performed by Köse (2015) 202 species, subspecies and varieties belonging to 48 families and in the study titled Flora of Turkey by Davis 507 species, subspecies and varieties belonging to 85 families were identified.

There are two studies concerning plant sociology performed in Kocaeli. Of these, the study by Yarcı et al. (2007) addresses the segetal vegetation of Kocaeli Province.

The project site is within the Gebze Organized Industrial Zone. Within the area, stands of Turkish Pine, Oak, Beech, Hornbeam and Willow and a plant cover consisting of weak herbaceous plants are present.

The project area lies within the Euro-Siberian Floral Region of Turkey.

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.

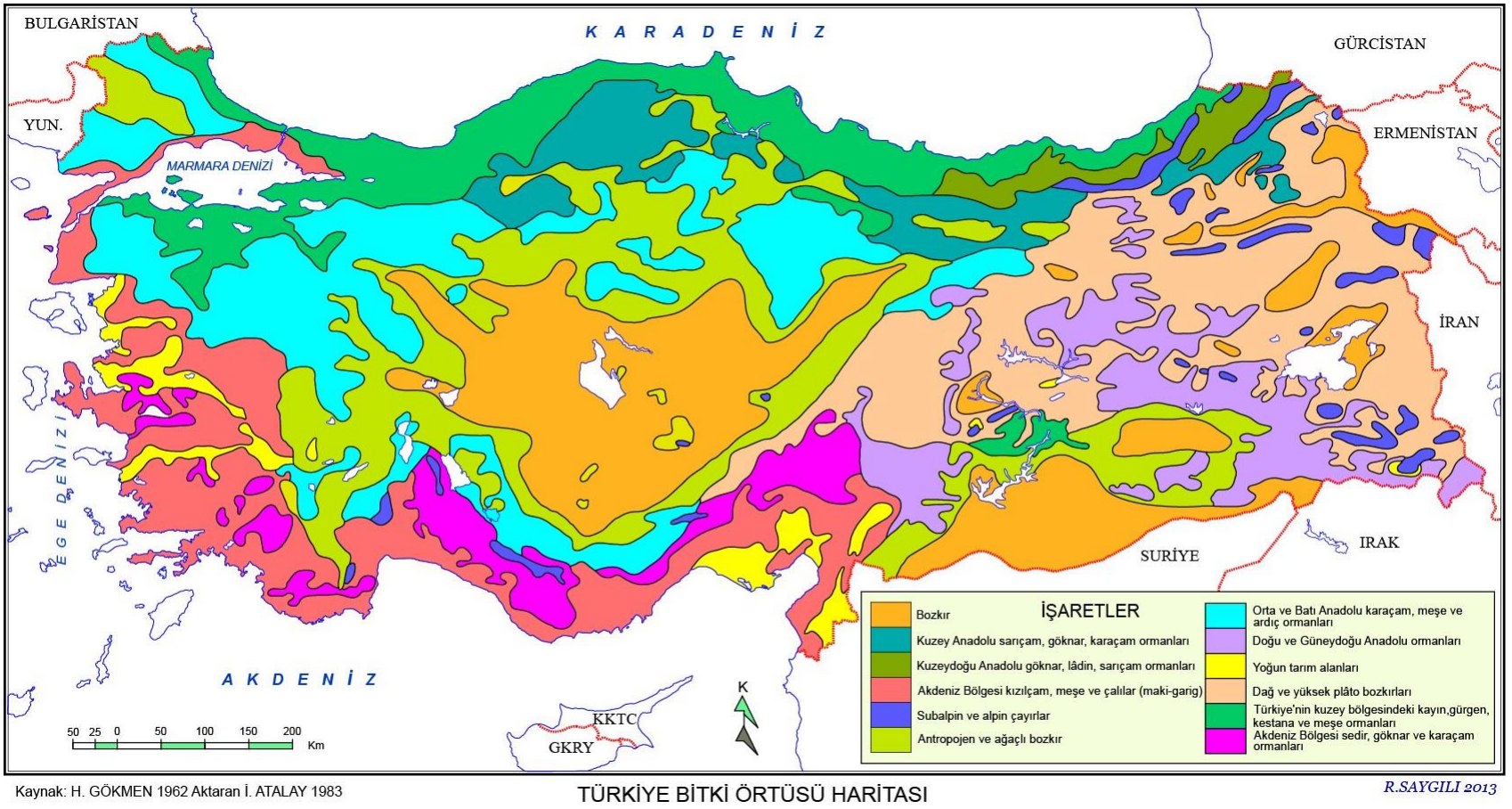


Figure 1: Turkey's Flora Map

Figure 2: Flora Zones of Turkey

The flora inventory provided below has been prepared through field work and literature review. Species have been identified with reliance on “Flora of Turkey and the East Aegean Islands, Vol 1-10, 1965-1988” by P. H. Davis. Regional flora list has been prepared in alphabetical order. Habitats floral zones, endemic status, relative abundance and the risk categories per the Red Book of Turkey's Plants have been provided for each species. Scales and abbreviations provided in the list are defined here-below. Turkish and local names of species have been provided with reliance on Dictionary of Turkish Plant Names (Baytop, T., 1997).

The area of work, as per grid quadrature system, falls inside quadrant A2.

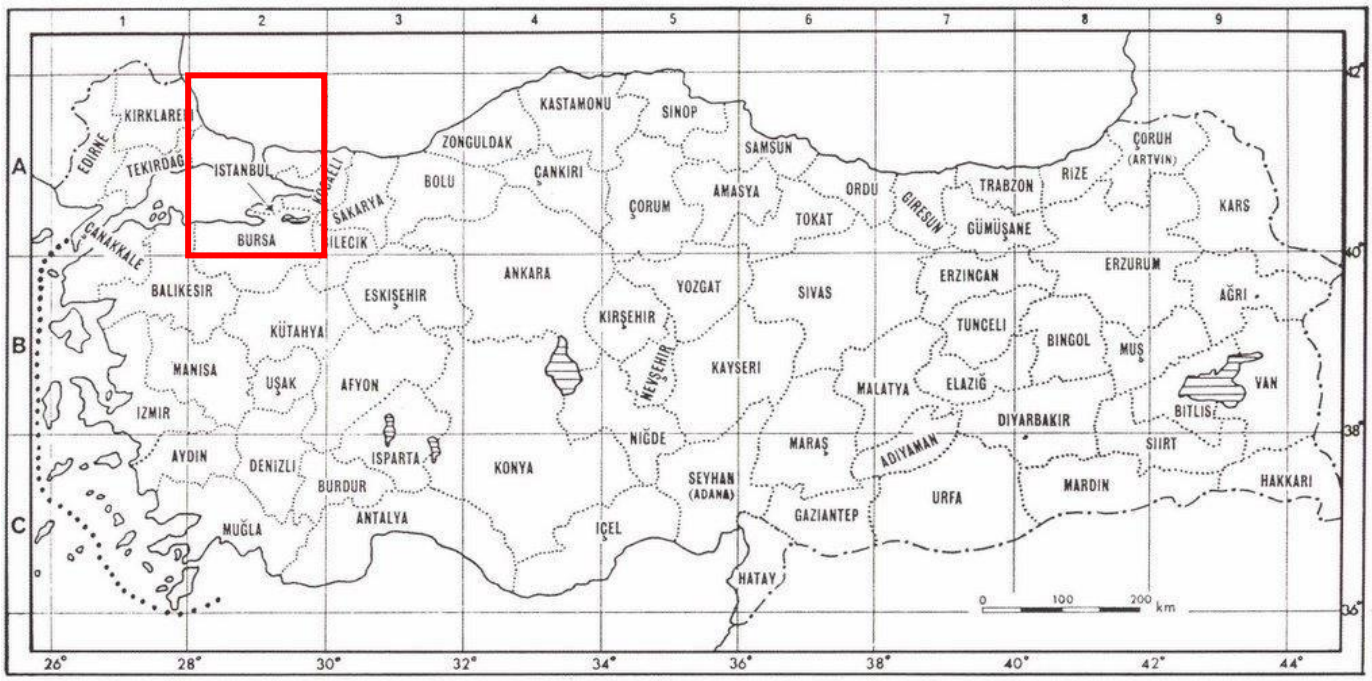


Figure 2: Grid Quadrature System, Map of Turkey

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)**: Species proven to be extinct.
- **EW (Extinct in the wild)**: Species which have gone extinct in the wild but live under captivity for breeding or exhibition purposes.
- **CR (Critically Endangered)**: Species facing high and imminent risk of extinction unless measures are in place.
- **EN (Endangered)**: Species facing lesser threat of extinction in the near future than category CR.
- **VU (Vulnerable)**: Species to face extinction in the wild in the medium-term.

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

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

- **LC (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 under this category.

<u>Central Hunting Commission</u>

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:

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

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.

Anexes 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.

Table-1: Flora Species in the Project Site and the Project Impact Area

Families	Taxon	Turkish Name	Phytogeographical Region	Habitat								Endemism	IUCN	Bern	Source
				1	2	3	4	5	6	7	8				
ACERACEAE	*Acer trautvetteri*	Kafkas Akçaağacı	Euxine	**X**											L
APLACEAE	*Sanícula europaea*	-	Euro-Sib.	**X**								-	-	-	L
ASTERACEAE	*Taraxacum buttleri*	Karahindiba	-	**X**								-	-	-	G
	Taraxacum officinale	Karahindiba			**X**							LC			G
	Lapsana communis subsp. intermedia	Meme otu	-		**X**							-	-	-	L
	Bellis perennis	Koyungözü papatya, Çayır papatyası	Euro-Sib.	**X**								-	-	-	L
	Conyza canadensis	Kanada şifa otu, Pire otu	-			**X**						-	-	-	L
	Echinops ritro	Topuz	-		**X**							-			G
	Artemisia vulgaris	Yavşan otu	-		**X**							-	-	-	L
	Eupatorium cannabinum	Sıtma otu	Euro-Sib.		**X**							-	-	-	L
	Tussilago farfara	Kabalak, Öksürükotu	Euro-Sib.	**X**								-	-	-	L
ATHYRIACEAE	*Athyrium filix-foemina*	Eğrelti	-	**X**						**X**		-	-	-	L
BERBERIDACEAE	*Epimedium pubigerum*	Keşiş külahı	Euxine	**X**						**X**		-	-	-	L

Families	Taxon	Turkish Name	Phytogeographical Region	Habitat								Endemism	IUCN	Bern	Source
				1	2	3	4	5	6	7	8				
BETULACEAE	*Alnus glutinosa subsp. glutinosa*	Kızılağaç	Euro-Sib.	**X**						**X**		-	-	-	L
BORAGINACEAE	*Myosotis laxa subsp. caespitosa*	Unutmabeni, Mine, Sevdaçiçeği	-		**X**										L
BRASSICACEAE	*Cardamine bulbifera*	Soğanlı köpükotu, Soğanlı suteresi	Euro-Sib.		**X**							-	-	-	L
CAPRIFOLIACEAE	*Sambucus nigra*	Kara Mürver	Euro-Sib.		**X**							-	-	-	L
CARYOPHYLLACEAE	*Stellaria media subsp. media*	Serçedili, Kuşotu	-		**X**					**X**		-	-	-	L
CONVOLVULACEAE	*Calystegia silvatica*	Boyatan sarmaşık	-		**X**							-	-	-	L
CUPRESSACEAE	*Juniperus oxycedrus subsp. oxycedrus*	Katran Ağacı	-	**X**								-			G
	Juniperus communis	Ardıç	-	**X**	**X**							LC			G
CORYLACEAE	*Carpinus betulus*	Gürgen	Euro-Sib.					**X**				-	-	-	G
EUPHORBIACEAE	*Euphorbia amygdaloides var. amygdaloides*	Badem benzeri Sütleğen, Sütlüot	Euro-Sib.		**X**							-	-	-	L
FABACEAE	*Vicia sativa var. Cordata*	-	-	**X**				**X**		**X**		-	-	-	L
	Lathyrus laxiflorus subsp. laxiflorus	Mürdümük	-					**X**				-	-	-	L
	Robinia pseudoacacia	Akasya	-		**X**							LC			G

Families	Taxon	Turkish Name	Phytogeographical Region	Habitat								Endemism	IUCN	Bern	Source
				1	2	3	4	5	6	7	8				
	Trifolium pratense var. pratense	Üçgül, tirfil	-							X		-	-	-	G
FAGACEAE	*Castanea sativa*	Anadolu Kestanesi	Euro-Sib.	X								-	-	-	G
	Quercus petraea subsp. iberica	Sapsız meşe	-												G
	Fagus orientalis	Doğu kayını	Euro-Sib.	X		X						-	-	-	L
GERANIACEAE	*Geranium rotundifolium*	Turnagagası	-		X							-	-	-	L
HYPERICACEAE	*Hypericum perforatum*	Binbirdelikotu, Delikli kılıçotu	-	X								-	-	-	L
ILICACEAE	*Ilex colchica*	Çobanpüskülü	Euxine	X								-	-	-	L
LAMIACEAE	*Prunella vulgaris*	Şifaotu	Euro-Sib.		X							-	-	-	L
PINACEAE	*Picea orientalis*	Doğu Ladini	-	X								-	-	-	L
PLANTAGINACEAE	*Plantago major subsp. major*	Büyük yapraklı Sinir Otu, Sinirli ot	-		X							-	-	-	L
POACEAE	*Poa annua*	Yıllık salkım otu	Euro-Sib.	X								-	-	-	G
	Echinochloa cruss-galli	Darıca otu	-					X	X	X		-	-	-	G
	Digitaria sanguinalis	Kızılçatalotu	-				X					-	-	-	G
	Bothriochloa ischaemum	Sakalotu	-					X		X		-	-	-	L

Families	Taxon	Turkish Name	Phytogeographical Region	Habitat								Endemism	IUCN	Bern	Source
				1	2	3	4	5	6	7	8				
	Aegilops geniculata	Konbaş	-					X			X	-	-	-	G
	Bromus arvensis	Tarlabromu	-	X						X		-	-	-	G
POLYGONACEAE	*Rumex acetosella*	Kuzukulağı	-		X					X		-	-	-	G
ROSACEAE	*Cerasus avium*	Kiraz	-	X			X					-	-	-	G
	Rosa canina	Kuşburnu	-		X					X		-	-	-	G

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

Source: http://turkherb.ibu.edu.tr/ (Turkish Plants Data Service- TUBİVES) Baytop T., 1994, Türkçe Bitki Adları Sözlüğü, TDK, Ankara www.iucnredlist.org

Abbreviations: LC**:Least Concern / Endmk: endemic species / M**AK**:Central Hunting Commission Protection Lists/** BERN: **Berne Convention on the Conservation of European Wildlife and Natural Habitats/** IUCN**:International Union for 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 45 plant taxa from 25 families with likely encounter in the habitat have been identified and the Turkish names, families, taxa, endemicity, IUCN status, BERN status and habitats have been listed in Table 1.

Photo 1*: Taraxacum officinale*

Photo2*: Echinops ritro*

Photo 3: *Juniperus oxycedrus suubp. oxycedrus*

Photo 4: *Robinia pseudoacacia*

Photo 5: *Juniperus communis*

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.

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 Forestry and Water Affairs, where, also, tables on protection statuses are prepared in observance of the provisions of the Bern Convention.

AMPHIBIA

Amphibians are a class 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 three species of amphibians the families, scientific and Turkish names of which have been given in Table 2. 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)*, Rana dalmatina (*Çevik kurbağa) and *Bufo viridis* (Gece Kurbağası) among these species are categorized as **Lc** (Least Concern).

As per the Bern Convention, 1 species is categorized as Annex-2 and 1 species is categorized.
as Annex-3.

Table-2: Amphibia Highly-likely to be Encountered in the Project Site and the Area of Impact as of the Habitat Thereof, and their Protection Status

TAXON/FAMILY/SPECIES	TURKISH NAME	HABITAT	MAK	IUCN	BERN
Tax: Anura					
Fam: Bufonidae					
Bufotes viridis	Gece Kurbağası	Waterside, Pastures, Fields	-	Lc	Ann ex II
Bufo Bufo	Siğilli Kurbağa	Stony, rocky areas, pastures	-	Lc	Ann ex III
Fam: Bufonidae					
Rana dalmatina	Çevik Kurbağa	Forests, Clearings, Roadside	-	Lc	-

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/ilPortfolyolari

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 Tortoises, Reptiles, and Snakes)

In the area a total of five such species have been identified, one of which is a tortoise, two are reptiles and one is a snake.

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), 2 of the species are categorized as LC, one species **(*Testudo greace*-Adi tosbağa)** as VU, which put them in the Bern Convention Annex II as strictly protected fauna. Also, another 1 species are categorized as Annex III (fauna under protection).

Table. 3: Reptilia Highly-likely to be Encountered in the Project Site and the Area of Impact as of the Habitat Thereof, and their Protection Status

TAXON/FAMILY SPECIES	TURKISH NAME	HABITAT	MAK	IUCN	BERN
Tax:TESTUDINATA	Kaplumbağalar				
Fam:Testudinidae					
Testudo graeca	Kaplumbağa	Clearings, Roadside, Waterside,	-	Vu	Annex II
Tax:SQUAMATA	Pullular				
Lacerta viridis	Yeşil Kertenkele	Forests, Clearings Waterside, Open slopes	-	Lc	Annex II
Fam: Anguidae	Yılan Kertenkelegiller				
Anguis fragilis	Yılan kertenkelesi	Roadside, Pastures	-	-	Annex III
SUBTAX.: OPHIDIA	Yılanlar				
Fam:Colubridae	Engerekler				
Zamenis longissimus	Eskülap Yılanı	Forests, vineyards, orchards/gardens	-	Lc	Annex II

Source: Demirsoy, A., 2006, Türkiye Omurgalıları "Sürüngenler", 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.

Acronyms:VU : Vulnerable/LC: Lowest Conct. Endangered / DD:Data Deficient/ NT: Near Threatened / 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

BIRDS (AVES)

Bird species which were identified to be present in and around the project site as per observations made therein and literature records are provided in the table here-below. Endangerment status of bird species in the list 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 Kiziroğlu 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, reed beds and marshy/swampy areas, in proximity of settlements and water canals. The rich eco-system also reflects upon biodiversity, especially that of bird species.

33 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 categozied as LC (least concern) with 2 species non-categorized.

24 species are Annex List II species per BERN Convention and 6 fall under Annex List III. Of the species in the table, 25 are Y (domestic) with at least two species having migratory status.

Table-4: Aves Highly-likely to be Encountered in the Project Site and the Area of Impact as of the Habitat Thereof, and their Protection Status

SPECIES	TURKISH NAME	HABITAT	LOCATION	IUCN	RDB	MAK	BERN
ACCIPITRIFORMES	**YIRTICI KUŞLAR**						
ACCIPITRIDAE	**YIRTICI KUŞLAR**						
Buteo buteo	Şahin	Open areas, cultivated areas,	Y	Lc	A.3	-	Annex II
Pernis apivorus	Arı şahini	Mature shedding tree forests	Y	Lc	A.3	-	Annex II
ARDEIDAE							
Ardea alba	Büyük ak balıkçıl	Seaside	Y	Lc	A.3	-	Annex II
Ardea cinerea	Gri balıkçıl	Seaside	Y	Lc	A.3.1	Annex	Annex III
Ardea purpurea	Erguvani balıkçıl	Seaside	T	Lc	A.2	-	Annex II
Ardeola ralloides	Alaca balıkçıl	Seaside	Y	Lc	A.3	-	Annex II
Botaurus stellaris	Balaban	Seaside	Y	Lc	A.2	-	Annex II
Egretta garzetta	Küçük ak balıkçıl	Seaside	KZ	Lc	A.3.1	-	Annex II
Ixobrychus minutus	Küçük balaban	Seaside	Y	Lc	A.2	-	Annex II
COLUMBIFORMES	**GÜVERCINLER**						
Columba livia	Kaya güvercini	Rock cavities	Y	Lc	A.5	-	Annex III
Streptopelia decaocta	Kumru	Human settlements	Y	-	-	-	Annex III
Streptopelia turtur	Üveyik	Human settlements	YZ	Lc	A.3.1	-	Annex III
STRIGIFORMES							
STRIGIDAE	**BAYKUŞGİLLER**						
Athene noctua	Kukumav	Near fields	Y	Lc	A.2	-	Annex II
PASSERIFORMES	**ÖTÜCÜ KUŞLAR**						

MOTACILLIDAE							
Motacilla alba	Ak kuyruksallayan	Barren, gravelly areas	YZ. T	Lc	A.3	-	Annex II
ALAUDIDAE							
Melanocorypha calandra	Boğmaklı tarlakuşu	Open areas	Y	Lc	A.5	-	Annex II
Oenanthe oenanthe	Kuyrukkakan	Open, stony areas with no trees	G	Lc	A.3	ANN EX I	Annex II
TURDIDAE							
Luscinia megarynchos	Bülbül	In suitable habitats almost everywhere in Turkey	Y, KZ	-	A.3	-	Annex II
CORVIDAE							
Corvus corax	Kuzgun	Cultivated areas,	Y	Lc	A.5	ANN EX I	ANNEX III
Corvus frugilegus	Ekin kargası	Cultivated areas	Y	Lc	A.5	ANN EX II	-
Garrulus glandarius	Kestane kargası	All forests	Y	Lc	A.3.1	-	-
Pica pica	Saksağan	Yerleşim alanları	Y	Lc	A.5	ANN EX-2	-
STURNIDAE	**SIĞIRCIK KUŞLARI**						
Sturnus vulgaris	Sığırcık	Mountainous areas with no trees	Y.KZ	Lc	A.5	ANN EX I	-
PASSERIDAE							
Passer domesticus	Serçe	Fields, forests	Y	Lc	A.4	ANN EX-2	-
Passer montanus	Ağaç Serçesi	Fields, forests	Y	Lc	A.3	ANN EX I	Annex III
PICIDAE							
Dendrocopos major	Orman alaca ağaçkakanı	All forests	Y	Lc	A.3	-	Annex II
Dendrocopos syriacus	Alaca ağaçkakan	All forests	Y	Lc	A.2	-	Annex II
Dryobates minor	Küçük ağaçkakan	All forests	Y	Lc	A.1.2	-	Annex II
FRINGILLIDAE							
Carduelis carduelis	Saka	Forests	Y	Lc	A.3.1	-	Annex II
Carduelis chloris	Florya	Sparse woodlands, olive and fruit	Y	Lc	A.3	-	Annex II
EMBERIZIDAE							

Emberiza cia	Kaya Kirazkuşu	Stony, rocky slopes	G	Lc	A.2	-	Annex II
SYLVIIDAE							
Phylloscupus collybita	Çıvgın	Mixed forests	KZ	Lc	A.3.1	-	Annex II
CICONIIFORMES							
CICONIIDAE							
Ciconia ciconia	Ak leylek	Forests and shrubs	T	Lc	A.3.1	-	Annex II
FALCONIFORMES							
FALCONIDAE							
Falco tinnunculus	Kerkenez	Mountains, valleys, forests	Y	Lc	A.2	-	Annex II
Falco subbuteo	Delice doğan	Forest clearings, swamps	YZ	Lc	A.3.1	-	Annex II
CORACIIFORMES							
UPUPIDAE							
Upupa epops	İbibik	Fruit and Olive groves, forest areas with clearings	YZ	Lc	A.2	-	Annex II

Source: Kiziroğlu, İ., 2008, "Türkiye Kuşları" (Species List in Red Data Book), Ankara, www.trakus.org, www.iucnredlist.org, http://www.trakus.org/, www.iucnredlist.org

Acronyms:VU : Vulnerable/LC: Lowest Conct. Endangered / DD:Data Deficient/ NT: Near Threatened / 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

In line with the study 'Birds of Turkey' (Kiziroğlu, 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 natural 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 vulnerable 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 observed surviving populations that do not risk extinction.
A.6: Species that have not been adequately studied and sound data on which are not available.
A.7: An assessment of these species is not possible due to insufficient data in Turkey regarding these species.

II. Species under 'B' are either hibernal visitors or transiting species. These species are also under significant risk of extinction and shall be considered under 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:

Y	Local Species
G/KG	Migratory species (summer
K	Hibernal visitors
T	Transiting migratory species
R	Coincidental species
N	Rare species

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

Mammalia within the project area are found in woods, shrubs and forests, clearings, alcoves and in open areas outside of the forest boundary.

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-5: Mammalia Highly-likely to be Encountered in the Project Site and the Area of Impact**,** and their Protection Status

SPECIES	TURKISH NAME	HABITAT	MAK	IUCN	BERN
ERINACEIDAE	**KİRPİLER**				
Erinaceus concolor	Kirpi	Shrubs	-	Lc	-
VESPERTILIONIDAE	**Düzburun yarasalar**				
Pipistrellus pipistrellus	Cüce yarasa	Open areas and close to water resources	-	Lc	Ann ex III
Rhinolophus ferrumequinum	Nalburunlu küçük yarasa	Forests	Anne x I	Lc	Ann ex II
LEPORIDAE	**TAVŞANLAR**				
Lepus europaeus	Yabani tavşan	All environments	ANN EX II	Lc	-
MURIDAE	**SIÇANLAR**				
Apodemus sylvaticus	Orman faresi	Forest and shrub areas	-	Lc	-
Mus musculus	Ev faresi	Settlements	-	Lc	-
Microtus levis	Tarla Faresi	Cultivated areas	-	Lc	-
Rattus rattus	Sıçan	Settlements	-	Lc	-
CANIDAE	**KÖPEKLER**				
Vulpes vulpes	Kızıl Tilki	Forests, meadows, fields	ANN EX II	Lc	-
MUSTELLIDAE	**SANSARLAR**				
Mustela nivalis	Gelincik	Meadows and grassy areas	ANN EX I	Lc	Ann ex III
SCIURIDAE					
Sciurus anomalus	Sincap	Forests	-	Lc	Ann

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

Measures to be Taken Prior to the Operation Stage

Areas not-to-be-used following the completion of construction works shall be topographically restored.

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.

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.

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.

Annex-I Chance Find Procedure

CONTENTS

Page No.

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	*'Chance find' defines any potential objects, features or areas of cultural inheritance that have been defined as a result of regular monitoring of project-related construction works but extrinsically to an official site*
MUSEUMS	*Kocaeli Archaeological Museum* *Archaeological Museum* *Anatolian Civilization Museums*
REGIONAL CONSERVATION BOARDS	*Kocaeli Regional Cultural Asset Conservation Boards* *Ankara 2nd Regional Cultural Asset Conservation Board*
PROJECT	*GIS SS*
WORKS	*Specifies mandated actions*
AND MANDATED ACTIONS	
COMPULSORY WORK	*Defines that the respective provision is not mandated but recommended.*

1.3 ACRONYMS

Acronym	Definition
TEİAŞ	*Turkish Electricity Transmission Corporation*
E & S	*Environmental and Social*
ESIA	*Environmental and Social Impact Analysis*

1.4 REFERENCES

STANDARDS, LEGISLATION AND LAWS
Ministry of Culture and Tourism, Law No. 2863 on the Protection of Cultural and Natural Assets
Ministry of Culture and Tourism, Decree No. 658, Archaeological Sites, Conditions for Protection and Use

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 activities. All construction staff shall be trained in view of implementation of the procedure.

The Role	Responsibilitie
Site Manager	To ensure that E & S issues are handled sufficiently and as required by all units concerned. To support on-site support to E & S actions, to provide E & S monitoring and supervision and to allocate adequate resources thereto.

3. CHANCE FIND PROCESS

The step-by-step process to follow any chance finds in the project site and its area of impact is given in the Table below.

<table>
<tr><td colspan="2">STAGE 1 - Following a chance find:
□ All works in the survey are shall cease.
□ A transitional buffer zone shall be established around the chance find area.
□ Site management and the museum archaeologist shall be contacted immediately.
□ The area of the finding shall be adequately secured by markings, signposts and banners, etc.
□ Protection of the site. The chance finding shall not be transported, lifted or damaged further.</td></tr>
<tr><td colspan="2">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.</td></tr>
<tr><td colspan="2">STAGE 3 - Communication with local authorities
□ The directorate of the respective Museum shall be notified.</td></tr>
<tr><td colspan="2">STAGE 4 - Museum Decision
□ Museum directorate archaeologist shall determine actions below regarding the chance find.</td></tr>
<tr><td>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 respective authorities.</td><td>STAGE 4B - Site is significant
□ Museum directorate archaeologist declares that the site/find is significant.
□ Museum director or the archaeologist at the museum decide further action and notify the site supervisor.</td></tr>
</table>

□ Site supervisor retains a copy of the chance find for his/her own records. □ No further action is required. □ The chance find procedure is closed. □ ***Construction activities can continue.***	□ Site supervisor notifies respective authorities.

STAGE 5 - **Site survey**

- Project staff follows the instructions of the archaeologist of the Archaeology Museum concerned

- Following site survey, the museum directorate archaeologist declares that the site/**finding is of minor significance.** - Site supervisor notifies his/her superiors. - Site supervisor retains a copy of the chance find for his/her own records. - No further action is required. - The chance find procedure is closed. - ***Construction activities can continue.***	- Following site survey, the museum directorate archaeologist **declares that the site/finding is of moderate importance.** - Advanced studies such as test pit/salvage excavation or remote sensor shall be completed. - Museum archaeologist shall instruct and/or supervise works. - Site supervisor notifies his/her superiors. - Project management shall provide an archaeological task force under the lead of the museum archaeologist. The task force shall be composed of qualified archaeologists as well as other specialists and workers. - Upon completion of excavation, the team shall report to the museum management. - Museum management forwards the findings of the survey to the Regional Cultural Asset Conservation Board. - Relevant Board for the Protection of Cultural Assets shall officially approve that retrieval has been complete and notified the Project Management as required. - Site supervisor retains a copy of the chance find for his/her own records. - No further action is required. - The chance find procedure is closed. - ***Construction activities can continue.***	- Following site survey, the museum directorate archaeologist **declares that the site/finding is of major importance.** - Recovery excavation shall be completed. - 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. - Museum Archaeologist provides instructions and/or supervision for the test pit/archaeological recovery excavation. - Site supervisor notifies his/her superiors. - Project management shall provide an archaeological task force under the lead of the museum archaeologist. The task force shall be composed of qualified archaeologists as well as other specialists and workers. - Upon completion of excavation, the team shall report to the museum management. - Relevant Board for the Protection of Cultural Assets shall officially approve that retrieval has been complete and notified the Project Management as required. - The site shall be registered and placed under protection as per the Turkish legislation. - Archaeology Supervisor(s) shall notify respective authorities. - Site supervisor retains a copy of the chance find for his/her own records. - 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
BÖLÜM A

Project Location: *Proje Sahası*	District (İlçe): Village (Köy):	Date: *Tarih*	Form No: Project Location:

Project Information

Name of person reporting chance find:
Şans bulgusunu rapor eden kişinin ismi

Was work stopped in the immediate vicinity of the chance find? ☐Yes ☐No *Şans bulungusunun tam çevresinde iş durduruldu mu? Yes Hayır*

Was a buffer zone created to protect the chance find? ☐Yes ☐No
Şans bulgusunu korumak için tampon bölge oluşturuldu mu? Yes Hayır

NOTIFICATION
BİLDİRİM

Site manager and E&S manager contacted ☐Yes ☐No
Saha Müdürü ve Çevre Müdürü ile irtibata geçildi Yes Hayır

CHANCE FIND DETAILS
ŞANS BULGU AYRINTILARI

GPS coordinates
GPS koordinatları

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

If not, explain why:
Yok ise nedenini açıklayınız

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

Diğer kayıtlar Yes
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 suyoluna olan mesafe, vb.)

PART B
BÖLÜM B

NOTIFICATION OF MUSEUM DIRECTORATE ARCHAEOLOGIST

Monitoring archaeologist contacted museum directorate archaeologist ☐Yes ☐No
Izleme arkeoloğu, müze müdürlüğü arkeoloğu ile irtibata geçti. *Yes* *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 ARKELOĞUNUN KARARI

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.

Date of notice to resume work:
İşe devam etme tarihinin bildirisi

☐ **Site/Finding of significance - Further actions required**
Önemli Saha — Bulgu - Ek araştırma gerekmektedir

Please Fill out Part C
Lütfen Bölüm C'yi doldurun.

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

Site manager and E&S manager contacted ☐Yes ☐No
Saha Müdürü ve E & S müdürü ile irtibata geçildi Yes Hayır

PART C
BÖLÜM C

FURTHER FIELD INVESTIGATION

☐ Site/Finding of minor significance ☐ Site/Finding of moderate significance ☐Site/Finding of major significance
Az önem taşıyan saha/bulgu *Orta derecede önemli saha/bulgu* *Çok önemli saha/bulgu*

Describe additional work to be conducted: *Yapılması gereken ek işlerin tanımları*		
Date started: *Başlangıç tarihi*	Date completed: *Bitiriş tarihi*	
Date of notice to resume work: *İşe geri dönme tarihi bildirisi*		
Name of museum directorate archaeologist: *Müze müdürlüğü arkeoloğunun ismi:* Contact information: *İletişim numarası*		
Construction manager contacted *İnşaat müdürü ile irtibata geçildi*	☐Yes *Yes*	☐No *Hayır*

ANNEX 2.2 - CHANCE FIND RECORD

DATE OF FIND	BRIEF DESCRIPTION OF THE CHANCE FIND	NAME OF AUTHORIZED STAFF	ACTION TAKEN	CHANCE FIND NOTIFICATION COMPLETE	STATUS OPEN OR CLOSED	OTHER CONSIDERATIONS

ANNEX 2.3 - CONTACT INFORMATION

Museum Directorate	Address	Telephone	Fax	E-mail
Kocaeli Museum Directorate	Archaeology and Etnography Museum Directorate, Eski Gar Binası, Demiryolu Caddesi Kemalpaşa KOCAELİ	(0262) 321 22 74	(0262) 325 53 54	kocaelimuzesi@kultur.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 Boards	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, Elmadağ, 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-J Forest Permit

TEİAŞ

TURKISH ELECTRICITY TRANSMISSION
CORPORATION DIRECTORATE GENERAL 4.
REGIONAL DIRECTORATE (ISTANBUL/ANATOLIA)
4. Region Facilities and Control Directorate

Capital: 5 bn TL
Tax Office: Hitit
Tax No: 879 30 4314
ASO: 5887 ATO:165458

Issue : 95708615-752.02-E.276386 19.07.2017

Subject: Re Receipt of Gebze GIS Site (68,06441 m²) for which a Forest Permit is Granted

TO PLACES OF
DISTRIBUTION

Ref : a) Our letter dated 26.05.2017 with Issue 95708615-752.01.02 - E.204732 addressed to Sakarya Regional Forestry Directorate.
b) Letter dated 20.06.2017 with Issue 61469664-255.03-E.13 14733 by İzmit Forestry Operation Directorate addressed to our Regional Directorate.
c) Our letter Dated 13.07.2017 with Issue 95708615-752.02.0I-E.267784 addressed to İzmit Forestry Operation Directorate

As you are aware, the amounts demanded as per the letter of İzmit Forestry Operation Directorate mentioned in Ref. (b) have been paid along with the obtainment of the "Bill of Undertaking for Final Permit" and the printed receipts for the mentioned amounts and the undersigned "Bill of Undertaking for Final Permit" were sent to İzmit Forestry Operation Directorate annexed to our letter mentioned in Ref. (c) and it was requested that the forest land of a total of 68,064.40 m² (Site of Gebze GIS) be delivered to our personnel Hakan KAHYA with the drawing up of a "Minutes of Site Delivery" and that 2 copies of the mentioned minutes be delivered by hand to our personnel or be sent to our Regional Directorate.

The site delivery of the forest land of 68,064.41 m² found suitable to be delivered for Gebze GIS was made on **19/07/2017** to our personnel Hakan KAHYA who was assigned by our Regional Directorate, and the **"Minutes of Site Delivery"** drawn up as relevant is provided as an annex to our letter.

Respectfully submitted for due action.

e-signature
Atilla KAYA
Regional
Director(G.)

Annex: "Minutes of Site Delivery" dated 19/07/2017 (1 page)

Distribution:

Due Action:
DEPARTMENT OF ENVIRONMENT AND EXPROPRIATION

Information:
Deputy Director General (Mr. Bünyamin

Addres: N.Kemal Mah.Sütçü Cad.Şeker Maslak Sok.No:9 PK: 18 34762 Ümraniye/İSTAN BUL

Telephone: O (216) 521 5800-04 Fax: O (216) 328 11 93
Web: www.teias.gov.tr

For information:Hakan KAHYA Head Mapping Technician

BAKIR)

DEPARTMENT OF TRANSMISSION LINES CONSTRUCTION

DEPARTMENT OF SUSBTATION CONSTRUCTION

DEPARTMENT OF PLANNING AND INVESTMENT MANAGEMENT

Adres: N.Kemal Mah.Sütçü Cad.Şeker Maslak Sok.No:9 PK:18 34762
Ümraniyc / İSTANBUL
Tele fon: O (216) 521 58 00-04 Faks: O (2 16) 328 11 93
Ele ktronik Ağ: www.tcias.gov.tr

For Information: Hakan KAHYA
Head Mapping Technician

İZİN SAHALARINA AİT SAHA TESLİM TESELLÜM TUTANAĞI

E-İZİN NO:	126526
İLİ	KOCAELİ
İLÇESİ	GEBZE
KÖYÜ	MUALLİM MAHALLESİ
Merkez Dos.No	
Bölge Müd. Dos.No	

ORMAN BÖLGE MÜDÜRLÜĞÜ	SAKARYA
ORMAN İŞLETME MÜDÜRLÜĞÜ	İZMİT
ORMAN İŞLETME ŞEFLİĞİ	GEBZE
ALANI (m^2)	68.064,41 m2
KULLANMA AMACI	TRAFO MERKEZİ İZNİ

İZİN SAHİBİ	TÜRKİYE ELEKTRİK İLETİM ANONİM ŞİRKETİ GENEL MÜDÜRLÜĞÜ(TEİAŞ)
RUHSAT NO	

Sakarya Orman Bölge Müdürlüğü, İzmit Orman İşletme Müdürlüğü, Gebze Orman İşletme Şefliği Gebze Serisi 191 no.lu bölmelerinde Makamın 16.06.2017 gün ve 119 sayılı Oluru ile Türkiye Elektrik İletim Anonim Şirketi Genel Müdürlüğü adına Trafo Merkezi izni verilen saha, İzmit Orman İşletme Müdürlüğü'nün 21.06.2017 gün ve 1314809 sayılı emirleri gereğince noter tasdikli / onaylı Taahhüt Senedi alınması üzerine izin sahasının köşe noktalarına zeminden bir metre yükseklikte koordinat değerleri belirli sabit işaretler tesis ettirilip izin sahası teslim edilerek, bu Teslim-Tesellüm tutanağı tanzim edilmiştir. 19/07/2017

TESLİM EDİLEN SAHANIN KÖŞE KOORDİNATLARI(6 Derecelik *)

Nokta	Sağa (Y)	Yukarı (X)

Nokta	Sağa (Y)	Yukarı (X)

Nokta	Sağa (Y)	Yukarı (X)

*) Koordinatlar ek arka sayfadadır.

TESLİM EDEN

İbrahim ÖZARSLANDAN
Orman Muhafaza Memuru

M..Süleyman REİSOĞLU
Orman Muhafaza Memuru

HAZIRDA BULUNAN:

Mahmut POLAT
Gebze Orman İşletme Şefi

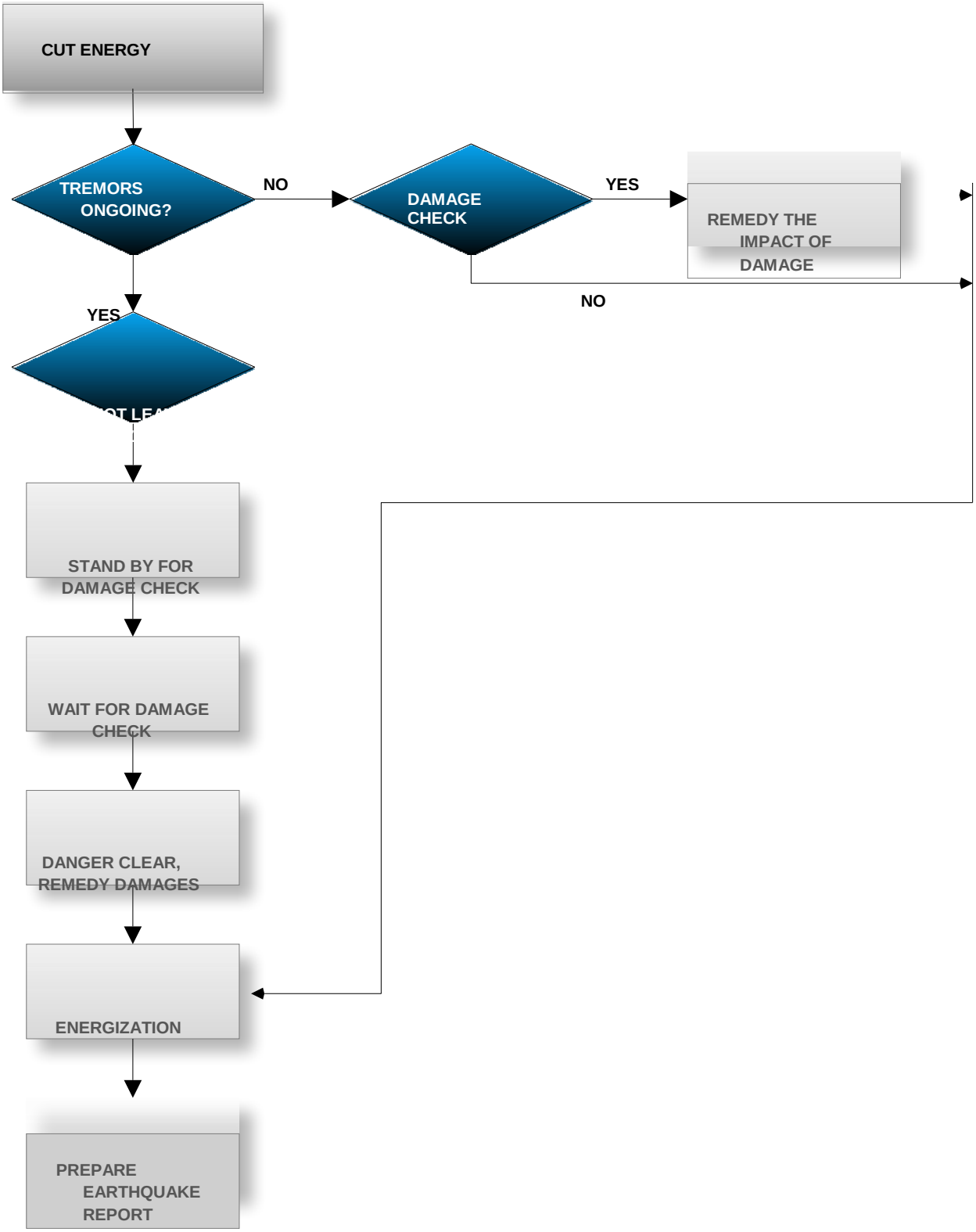
TESLİM ALAN:

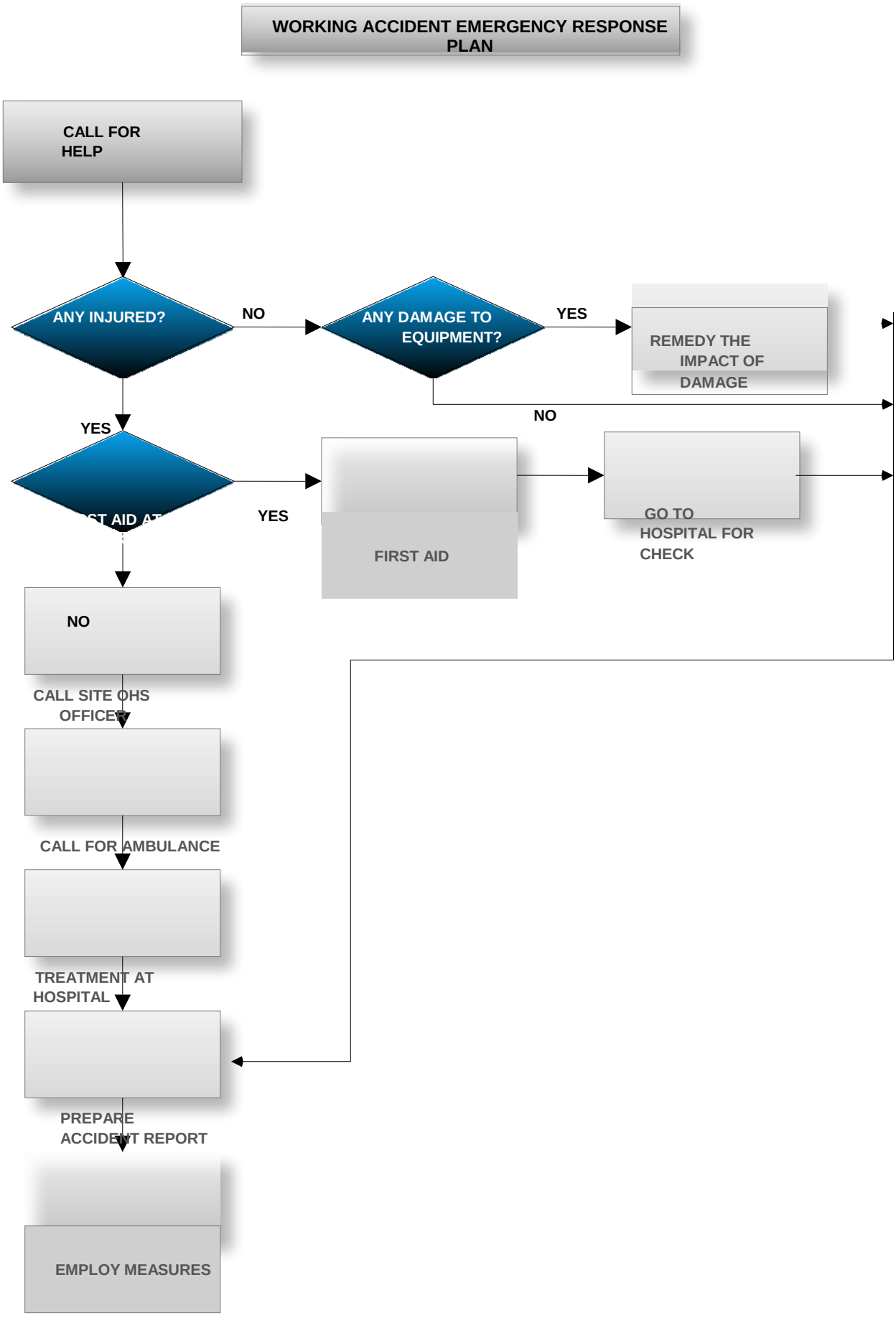
TEİAŞ GENEL Müd.adına

Hakan KAHYA

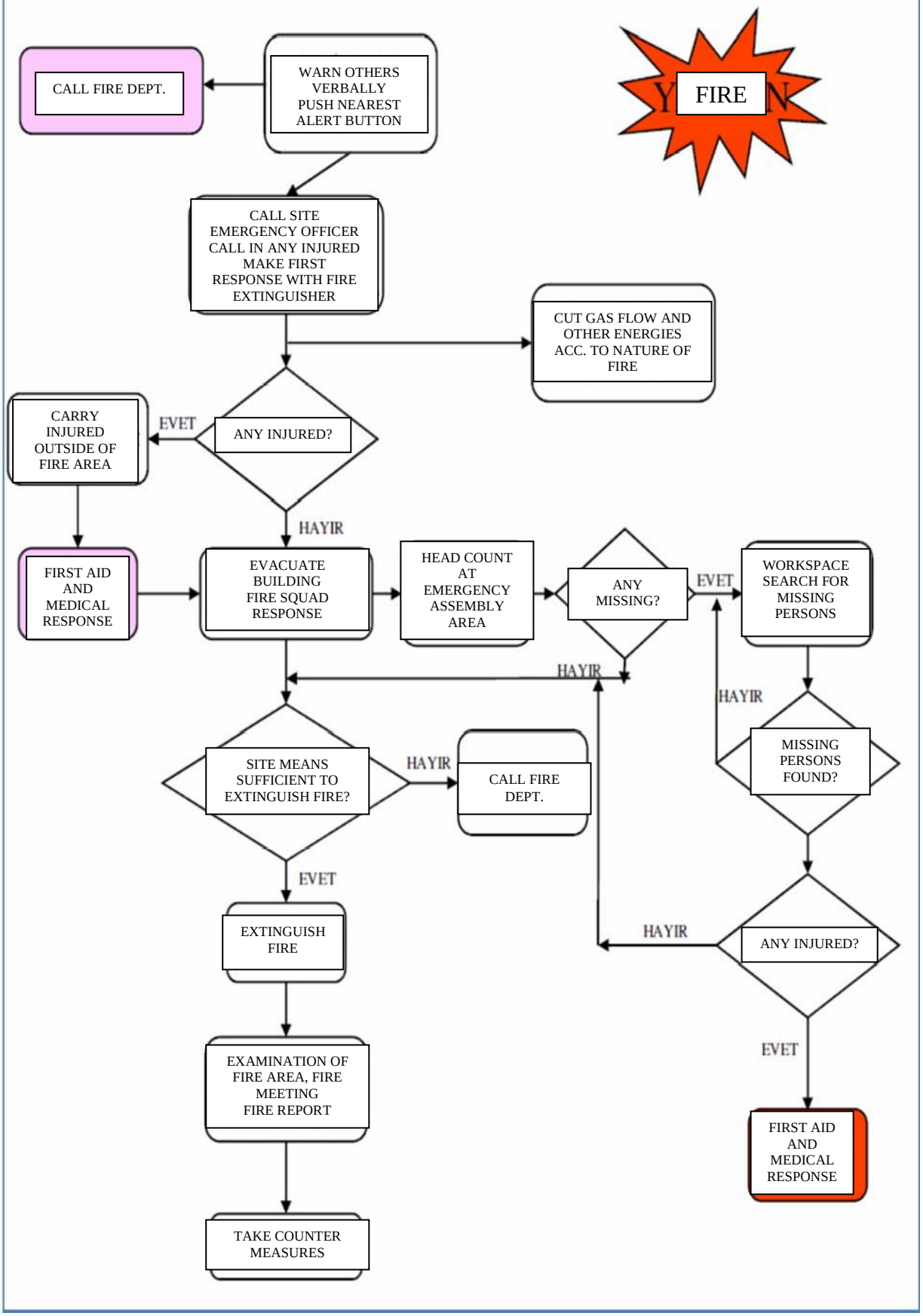
Ek-K Emergency Response Plans

EARTHQUAKE EMERGENCY RESPONSE PLAN




WORKING ACCIDENT EMERGENCY RESPONSE PLAN
CALL FOR HELP
ANY INJURED?
NO
ANY DAMAGE TO EQUIPMENT?
YES
REMEDY THE IMPACT OF DAMAGE
NO
YES
YES
FIRST AID
GO TO HOSPITAL FOR CHECK
NO
CALL SITE OHS OFFICER
CALL FOR AMBULANCE
TREATMENT AT HOSPITAL
PREPARE ACCIDENT REPORT
EMPLOY MEASURES

EMERGENCY RESCUE RESPONSE PLAN



Annex-L Opinion of Türk Telekomünikasyon A.Ş.

Türk Telekomünikasyon A.Ş.

CONTACT: METİN KOR

Main Network Operations Management

Kocaeli Telecomms Dir. (type-1)
İstanbul Regional Directorate

Türk Telekom

21.12.2017

ISSUE *: TT.50461464 - 575.03.02* -236400
SUBJECT *: Public Agencies*

TURKISH ELECTRICITY TRANSMISSION CORPORATION
4. REGIONAL DIRECTORATE
Directorate of Facilities and Control
N. Kemal Malı. Sütçü Cad. Şeker Maslak Sok. No:9 PK:18 34762 Ümraniye / İSTANBUL

Ref: Your letter dated 29.11.2017 with Issue 95708615-755.04-E.464006.

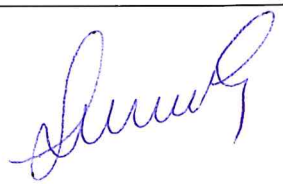
With regard to the Construction of the 154/33 kV Gebze GIS mentioned in the referenced letter, the lines belonging to our Company and located on the site in question need to be displaced. A displacement project has been prepared as a result of the examinations carried out on the field and in the event that the 1. Survey displacement price of TRY 13,644.04 (VAT EXCLUDED) is deposited to our Company's account with the IBAN number TR76 0001 0001 6337 7119 3367 27 at Republic of Turkey Ziraat Bank Kocaeli Branch the displacement work shall be commenced.

Respectfully submitted for your information.

SEDAT YILDIZ
MANAGER

METİN AY
DIRECTOR OF TELECOMMS. (1)

PREPARED BY

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