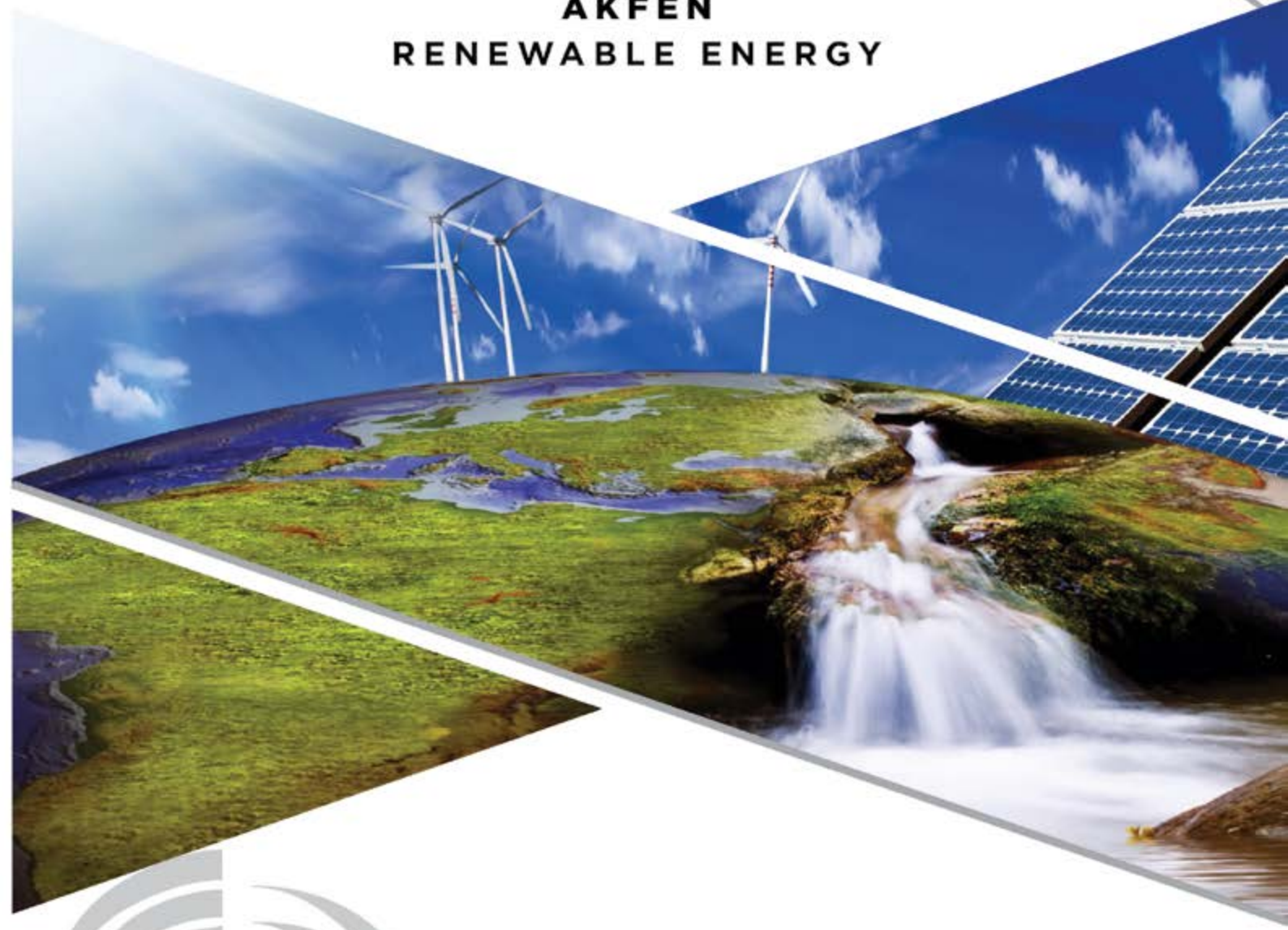




**AKFEN  
RENEWABLE ENERGY**



**ENVIRONMENTAL AND  
SOCIAL MANAGEMENT  
SYSTEM**

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# Abbreviations

ADR	The European Agreement concerning the International Carriage of Dangerous Goods by Road
AKFEN	AKFEN Renewable Energy
EBRD	European Bank for Reconstruction and Development
EIA	Environmental Impact Assessment
EMRA	Energy Market Regulatory Authority
ERT	Emergency Response Team
ERP	Emergency Response Plan
ETL	Energy Transmission Line
GDSHW	General Directorate Of State Hydraulic Works
GPP	Geothermal Power Plants
HEPP	Hydroelectric Power Plant
HS	Health and Safety
HSE	Environment Health and Safety
HR	Human Resources
IFC	International Finance Corporation
MoLSS	Ministry of Labor and Social Security
MSDS	Material Safety Data Sheet
MSDS	Material Safety Data Sheet
PA	Preventive Action
PIF	Project Introduction File
PMT	Project Management Team
PPE	Personal Protective Equipment
SSI	Social Insurance Institution
SPP	Solar Power Plant
TETC	Turkish Electricity Transmission Corporation
TEPP	Thermal Energy Power Plant
WMP	Waste Management Plan
WPP	Wind Power Plant



# 1. INTRODUCTION

## 1.1. About Us

### About AKFEN Holding

AKFEN Holding acts with the mission of creating value in all sectors they carry on business, also opens a road for new industries with long-term investment decisions on sustainable areas having great potential to grow, is a leader infrastructure platform that has impact on economic and human development of Turkey.

AKFEN Holding was established in 1976 and specialized in airport management and operation, construction, seaport management, energy, real estate, marine transportation, waterworks and wastewater services and has deep knowledge and experience.

In the direction of growth plans, AKFEN pays attention to creating new line of business and manages its portfolio in scope of this vision. The Company is highly experienced about purchasing and selling its wealth and the value created especially for sells has great importance since it provides funding for both new business areas and for investments of continuing works. Group companies continue their organic and inorganic growth rapidly, and they fund these investments by efficiently using their finance instruments in order to support this growth. In this scope high profit is obtained with operational leverage provided from the developing associations.

Thus, at the forthcoming period, AKFEN Holding aims to continue to make new investments by developing new business line, same as before, on behalf of creating new employment and to make contributions to national economy.

AKFEN Holding, with its innovative approach and transparent approach based on accountability at every stage of company and associations, forms strategic partnership with the bests in sector and draws the foreign capital investments to Turkey and plays important role on the development of infrastructure of countries in region.

In addition to the solid financial structures of all company and associations, strong human capital is also highly effective in the success of AKFEN Holding. Together with the qualified labor force raised by qualified managerial staff having common radical history, AKFEN Holding is making contributions for 40 years to other social responsibility projects, starting with Turkey Human Resources Foundation, of which AKFEN is a founder and also making contributions to economic development and humane development.

With the ability of risk management, ambition to work, and the skills of accomplishing its responsibilities, AKFEN Holding has become a confidential business partner in both national and international markets, and it continues its powerful growth.

### About AKFEN Renewable Energy

The portfolio of AKFEN Renewable Energy is formed of energy generation from renewable sources and wholesales of electricity trade. Supplying wholesale electricity to free consumers by also using the energy that the company generates is being conducted via AKFEN Electric Energy and Wholesale Inc. At the same time 10% of its company shares belongs to EBRD and IFC, the two important international institutions, it's the growth in renewable energy industry is rapidly increasing.

# AIM AND SCOPE

## 1.2. Aim and Scope

This Environmental and Social Management System scopes the general strategies to be applied in order to mitigate or eliminate the negative environmental, social, occupational health and safety impacts that emerges from the construction and operation of renewable energy projects of AKFEN Renewable Energy and its subcontractors. Primary purpose of this system is to provide guidance for the prevention of accidents and cases that may cause damages on natural and social environment and employees and environmental groups.

Main aims of this management system are as follows:

- To make necessary commitments to mitigate the impacts in terms of both environmental and occupational health and safety during the construction and operation activities,
- To provide guidance to management team about the mitigation of the impacts of environmental protection, social, environmental and HS during construction and operation activities,
- To give support for complying the necessities of environment and HS,
- To determine the modifications in the application and to make revisions,
- To provide sufficient support, human resources and financial resources to obtain effective and continuous social and environmental performance,
- To make plans towards the employment policy and to execute studies to enhance labor,
- To take applicable legal requirements and international best practices as reference,
- To provide organization and to make commissioning in all levels, in order to fulfill the environmental, social and HS requirements in accordance with the responsibilities of management in all levels.

In preparation of this document, following documents and standards were taken as reference:

- National Environmental and HS Legislation,
- ISO 9001 Quality Management System of AKFEN,
- ISO 14001 Environmental Management System of AKFEN,
- OHSAS 18001 Occupational Health and Safety Management System of AKFEN,
- ISO 50001 Energy Management System of AKFEN,
- EBRD Standards,
- IFC Standards.

This management system explains the minimum working standards/applications to be followed and applied during construction and operation activities of head office, office/power plant and new projects. It is also prepared as to provide development for the required additional policies/procedures/applications for environmental protection and health and safety of the stakeholders and other people who can be affected from the activities.

This system is designed to provide assistance for all AKFEN Renewable Energy employees. For the application of the system trainings will be provided in head offices and offices.

This management system will be revised in accordance with the amendment of legislations, activities and needs. In the further sections of this report, AKFEN Renewable Energy will be referred as AKFEN.



AKFEN General Manager and Operation Manager spare the 15% of the daily works to HS and Environment issues. Photographs of some renewable energy plants of AKFEN are displayed below.



**Photograph 1:** Denizli Demirciler HEPP



**Photograph 3:** Sivas Saraçbendi HEPP

**Photograph 2:** Photograph showing the inside of HEPP



**Photograph 4:** Sakarya Doğançay HEPP





**Photograph 5:** Denizli SPP



**Photograph 7:** Mersin Otluca HEPP

**Photograph 6:** Aydın Sirma HEPP



**Photograph 8:** Sivas Saraçbendi Regulator



# ENVIRONMENTAL AND SOCIAL MANAGEMENT SYSTEM

## 1.3. Environmental And Social Management System Policy

AKFEN accepts being respectful to natural and social environment, protecting safety of life and property of stakeholders and employees that can be impacted from activities as main working principle. Thus, in order to certificate and systemize this sensitiveness, studies are integrated ongoing in scope of ISO 9001 Quality Management System, ISO 14001 Environmental Management System, OHSAS 18001 Occupational Health and Safety Management System and ISO 50001 Energy Management system. Within scope of these management systems, the policy commitments of Board of Directors are given below.



### Quality Policy

In accordance with the vision of our Company, by using the developing and current technologies we provide services with products that are reliable and meet the expectations of our clients.

- Reporting, documentation and continuously enhancing of our quality management system in order to meet the requirements of ISO 9001,
- Reaching the company and unit targets within the borders of team spirit based on total quality philosophy,
- Determination of preventive approaches that will increase our performance on work process by making revisions with the self-assessment process,
- Being a reliable and wanted firm within an understanding that fully meets the needs and expectations of clients in all processes,
- Within the framework of quality systems, raising the quality level at all times by paying attention to team work in order to help all the employees to become more competent and to make them use their abilities in a preeminent manner.
- Providing quality awareness to all employees,
- Being in cooperation with suppliers based on trust,
- Preventing the nonconformities that can emerge later by producing the most appropriate, true and economic solutions,
- Completing all projects in accordance with the upmost techniques, at the desired quality and within the limits of budget,
- Being a role model company that is respectful to society and environment and conducting activities that will have contributions to national economy by constantly increasing business volume.

In accordance with the items given above, we manage our activities in integrity with Quality, Health and Safety and Energy Efficiency Management Systems, we work hard to be the role model company.



### Environmental Policy

With our company and employees, we comply with the national and international legislations and regulations and we give environmental friendly services within the scope of an environmental management system that bases a field on constant development.

- Efficient use of energy and natural resources,
- Mitigating the negative environmental impacts in all processes from design to end of life circle,
- Prevention of pollution at source,
- Increasing the environmental consciousness of our employees and society,
- Meeting all legal necessities in terms of environment and customer necessities, making continuous development and enhancement,
- Providing protection for natural resources by using the appropriate technologies that minimizes the harm to environment and mitigating the usage of raw materials within the bounds of technical and economic opportunities,
- Taking the environmental impacts into consideration during the design of facilities and process,
- Handing down a clean and healthy environment to the next generations by continuously enhancing of our environmental performance,
- Raising awareness of all our employees, subcontractors and local community about our responsibilities towards environment and providing their participation,
- Maintaining continuous communication with suppliers and customers in order to mitigate the environmental impacts of the product,
- Assessing the recycling and reusing alternatives, mitigating the wastes that can occur as result of production, transportation, storage, operation, treatment and maintenance activities,
- Forming health, security and environmental integrity by mitigating the emergency risks that may occur within the rules of occupational health and safety.

In accordance with the items given above, we manage our activities in integrity with Quality, Health and Safety and Energy Efficiency Management Systems, and with our environmental leadership, we work hard to be the role model company.



## HS Policy

Our company and with its employees, we comply with the national and international legislations and regulations and within the compass of continuously developing Occupational Health and Safety Management System; we provide healthy and safe working space.

- Analyzing and mitigating the health and safety risks that may occur in the working space,
- Forming Occupational Health and Safety awareness and preparing training activities for development,
- To take any necessary precautions in accordance with the HS legislation in force and all other necessities about HS in order to ensure the health and safety of the employees, subcontractors, visitors in the workplace and in additional buildings and others that are employees outside the offices, providing any tools and personal protective equipment and ensuring the use of these when necessary,
- By conducting an efficient risk assessment, pre-determining and eliminating the unsafe cases and actions that can cause occupational accidents or occupational diseases and possible accident risks in the workplace and in additional buildings,
- Determining the risks in the workplace that can cause occupational accidents or occupational diseases, and to ensure the health, safety and social well beings of the employees on all levels, visitors, subcontractors, and to mitigate any financial and emotional losses that may take place in the future towards them or their families,
- Training our employees about occupational health and safety and provide a good occupational health and safety awareness,
- Ensuring that the subcontractors providing services in the workplace or the visitors obey the rules in terms of occupational health and safety that are established by our company,
- Making our company a role model in terms of HS applications for registered institutions, chambers of industry and associations,
- Predicting the possible outcomes that can be encountered in the future by taking the development of energy industry into account and providing constant development and making revisions,
- Targeting zero occupational accident and zero occupational disease and increasing the efficiency by taking necessary precautions.

In accordance with the items given above, we manage our activities in integrity with Quality, Health and Safety and Energy Efficiency Management Systems, we work hard to be the role model company in terms of occupational health and safety.



## Energy Efficiency Policy

We know that leaving more livable and sustainable World to next generations is a responsibility of each individual, and besides meeting all the legal necessities we are liable, by;

- Measuring and increasing our energy performance continuously without making concessions from our environmental-conscious,
- Mitigating the energy and resource consumptions without making concessions from legislation and comfort conditions by revising the energy consumption structures and system performances and by making revisions within the bounds of company,
- Raising awareness of our employees about environmental-conscious and energy efficiency, and by this means leaving a positive mark not only in the company but also at every stage of daily live,
- Giving priority to using environmental friendly and economical products,
- Keeping the carbon emission at the lowest level as possible,
- Sharing the information and our experiences about all the process of energy management in company and to all other relevant platforms,
- Discussing the effectiveness of our energy management system in the meetings to be held periodically and showing effort to develop by receiving opinions of all employees,
- Developing our energy performance development by setting higher targets periodically.

We hereby announce that we are planning to realize the above-mentioned items in accordance with a suitable plan and in integrity with Quality, Health and Safety and Energy Efficiency Management Systems.

### 1.3.1. Organization Chart of Environmental and Social Management System

In AKFEN Headquarter, there is a Management Representative appointed by Board of Management and is responsible from environmental, social and occupational health and safety implementations. Besides, there is Environment and HS Manager that is responsible for the environmental, HS, social and energy efficiency applications in field. There is Council of Environment that is responsible for examining environmental, social and occupational health and safety applications and for taking necessary actions. AKFEN Board of Management, organization chart and duties are given in Figure 1.

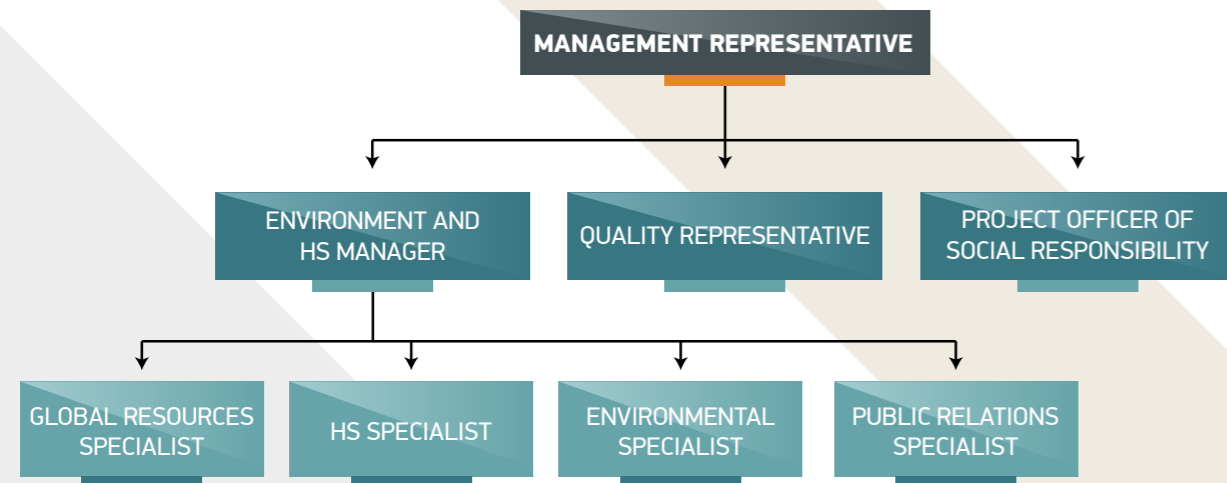


Figure 1: AKFEN Council of Environment



### 1.3.2. Job Descriptions

Yukarıda verilen organizasyon yapısı için belirlenen görev tanımları AKFEN Entegre Yönetim Sistemi kapsamında “Organizyon El Kitabı”nda detaylı olarak verilmektedir. Bu dokümanda ise çevre, sosyal ve İSG ile ilgili anahtar görev tanımları özetlenmektedir.

Title	Job Description
<b>General Manager</b>	<p>General Manager is responsible for the maintaining of policies, aims and activities about the usage of Social, Environmental, HS and global resources in Akfen Head Office and energy plants and execution of relevant industrial good applications. The Management Representative is working directly under General Director. Duties of General Manager are as follows:</p> <ul style="list-style-type: none"> <li>Preventing the environmental impacts and HS hazards in accordance with the actions AKFEN, mitigating and to eliminating the possible social complaints and providing anything that is necessary and applicable to increase the energy efficiency,</li> <li>Determining policies and targets about above mentioned issues,</li> <li>Demanding Council of Environment to make feasibility studies for the possible future investments in accordance with the social, environmental and HS terms,</li> <li>Ensuring there are provisions in the contractor engagements about environment, social and HS necessities in order to ensure that the contractor works in accordance with the national legislation and relevant international standards (EBDR, IFC, etc.) in construction stage of energy investments, and auditing the performance of contractor,</li> <li>Appointing Management Representative,</li> <li>Inspecting the effectiveness of the environmental, social and HS documents and applications and the efficiency of the personnel that are appointed for these issues, and ensuring development,</li> <li>Providing adequate trainings in order to maintain environmental friendly and safe applications of employees,</li> <li>Increasing the skill and motivation of the personnel, managing the labor force, enhancing working conditions, providing resources for personnel trainings and ensuring the performance assessments are being made.</li> </ul>
<b>Management Representative</b>	<p>Management Representative is responsible for the establishment and execution of AKFEN Quality, Environment, Occupational Health and Safety and Energy Efficiency Integrated Management System. Duties of management representatives are follows;</p> <ul style="list-style-type: none"> <li>Execution of quality, environment, HS and energy efficiency system applications in AKFEN central office and plants in operation,</li> <li>Providing effectiveness of the quality, environment, HS and energy efficiency documents and applications and making revisions, ensuring development,</li> <li>Making periodical inspections of the performance of contractors in the plants at the construction stage,</li> <li>Providing continuity of AKFEN Council of Environment works and monitoring the application of decisions taken,</li> <li>Making internal audits and inspecting the execution of integrated systems,</li> <li>Presenting reports to General Manager about the system performance,</li> <li>Determining the national and international legislations that are applicable to the activities and informing General Manager,</li> <li>Working in cooperation with the units given in the organization chart in order to determine the Environmental, Social, HS and energy efficiency targets.</li> </ul>

Title	Job Description
<b>Environment and HS Manager</b>	<p>Environment and HS Manager is both responsible from AKFEN environment and HS applications and also presides at Environment Commission. Duties of Environment and HS Manager are as follows;</p> <ul style="list-style-type: none"> <li>• Determining the national and international legislations that are applicable to the activities and informing General Manager,</li> <li>• Determining the environmental impacts and HS hazards in accordance with the actions, mitigating and to eliminating the possible social complaints and providing anything that is necessary and applicable to increase the energy efficiency,</li> <li>• Ensuring the social, environmental and HS feasibility studies of possible new investments and reporting to General Manager,</li> <li>• Ensuring there are provisions in the contractor engagements about environment, social and HS necessities in order to ensure that the contractor works in accordance with the national legislation and relevant international standards (EBDR, IFC, etc.) in construction stage of energy investments of AKFEN, and auditing the performance of contractor reporting to General Manager,</li> <li>• Determining sectorial good application examples about the precautions to be taken,</li> <li>• Providing efficiency of environmental, social and HS applications and making constant revisions, ensuring their development,</li> <li>• Determining training materials in order to provide employees to be working in an environmental friendly manner,</li> <li>• Determining corrective/preventive actions in case of distortion of aims and targets and monitoring the efficiency,</li> <li>• Providing answers to the environmental and social complaints of employees, local community and local institutions and making audits,</li> <li>• Providing continuity for the works of AKFEN Council of Environment and monitoring the application of decisions taken.</li> </ul>
<b>Social Responsibility Project Officer</b>	<p>AKFEN is responsible from development and application of social responsibility projects. Duties of Social Responsibility Project Officer are as follows;</p> <ul style="list-style-type: none"> <li>• Making cooperation's with AKFEN Holding for that purpose, when necessary,</li> <li>• Determining social supports according to the needs in accordance with the results of social assessment studies conducted for the plants that are in operation and/or under construction,</li> <li>• Making time, budgeted plans for the application of these support projects and applying them with the approval of General Manager,</li> <li>• Monitor the efficiency of these supports and making corrections or forming new arrangements, if necessary.</li> </ul>
<b>Global Resources Specialist</b>	<p>Global Resources Specialist is responsible for applications of ISO 50001 Energy Efficiency System. Duties of Global Resources Specialist are as follows;</p> <ul style="list-style-type: none"> <li>• Forming documents and applications about energy efficiency in Akfen Head Office and plants,</li> <li>• Monitoring the relevant regulations,</li> <li>• Making internal audits,</li> <li>• Determining corrective/preventive actions in case of distortion of aims and targets and monitoring the efficiency,</li> <li>• Determining the needs of trainings about the usage of global source usage,</li> <li>• Making the controls and audits of relevant equipment and materials periodically and keeping records,</li> <li>• Keeping records of the energy efficiency in center and plants, making archives and keeping these records ready to present them to the authorities.</li> </ul>

Title	Job Description
<b>HS Specialist</b>	<p>HS Specialist is responsible for OHSAS 18001 Occupational Health and Safety Management System applications. Duties of HS Specialist are as follows;</p> <ul style="list-style-type: none"> <li>• Forming documents and applications of occupational health and safety in Akfen Head Office and plants,</li> <li>• Monitoring relevant legislations,</li> <li>• Making internal audits,</li> <li>• Determining corrective/preventive actions in case of distortion of aims and targets and monitoring the efficiency,</li> <li>• Determining the needs of trainings about HS,</li> <li>• Making the controls and audits of relevant equipment and materials periodically and keeping records, archives and keeping these records ready to present them to the authorities,</li> <li>• Examining emergency response plans and preparations,</li> <li>• Controlling the HS recordings and performances of contractors or planning these controls,</li> <li>• Coordinating the service of Joint Health and Safety Unit and making audits,</li> <li>• Monitoring the permits and notices about HS, ensuring the permits are taken.</li> </ul>
<b>Environmental Specialist</b>	<p>Environmental Specialist is responsible for ISO 14001 Environmental Management System applications. Duties of Environmental Specialist are as follows;</p> <ul style="list-style-type: none"> <li>• Forming documents and applications of environmental management system in Akfen Head Office and plants,</li> <li>• Monitoring relevant environmental legislations,</li> <li>• Making internal audits,</li> <li>• Determining corrective/preventive actions in case of distortion of aims and targets and monitoring the efficiency,</li> <li>• Determining the needs of trainings about environment.</li> <li>• Making the controls and audits of relevant equipment and materials periodically and keeping records, archives and keeping these records ready to present to the authorities,</li> <li>• Monitoring environmental permits and notices, ensuring the permits are taken,</li> <li>• Examining environmental response plans and preparations,</li> <li>• Controlling the environmental records and performances of contractors or planning these controls.</li> </ul>
<b>Human Relations Specialist</b>	<p>Duties of Human Relations Specialist who will be working under Environment and HS Manager, are as follows;</p> <ul style="list-style-type: none"> <li>• Forming relationships with the stakeholder groups in project/plant impact area, determining social and economic features of region,</li> <li>• Introducing the plant/construction activities to stakeholder groups,</li> <li>• Recording possible complaints, finding solutions,</li> <li>• Helping for the preparation of plans for social support,</li> <li>• Informing public about special activities (blastings, power cuts regarding the infrastructure maintenances, limitations of transportation, etc.),</li> <li>• Finding solutions for possible incompatibilities and making arbitrations,</li> <li>• Implementing stakeholder participation plan,</li> <li>• Controlling that the expropriation and resettlement plans are going as planned,</li> <li>• Giving trainings to personnel about their relationship with local community,</li> <li>• Planning local employment and supply plan,</li> <li>• Preparing monthly reports about social activities and presenting these to Environment and HS Manager.</li> </ul>

# 1.3.3. INTERNAL AUDIT AND REPORTING

## 1.3.3. Internal Audits and Reporting

The conformability of the plants in operation and projects that are under construction with national environment and HS legislations and with EBRD and IFC performance standards are provided with internal audits of AKFEN. The records of the audits made with internal auditors or third-eye independent auditors under the scope of quality, environment, HS and energy management systems will be kept and reporting's will be made. In internal audits, not only implementations, but also the reports of the monitoring's required by the legislation (dust, noise, vibration, exposure, wastewater, etc. analysis reports) are also examined. In this scope, the audits to be conducted, their periods and reporting content are given in App3 Audit Process.

**Internal Audit Report:** In accordance with the **Internal Audit Procedure**, this is a reporting that will be done once in a year in scope of AKFEN quality systems. The internal auditors, in scope of documents and applications, will audit system applications in Head Office and plants.

**Audits of Construction Sites:** Contractors that are constructing the AKFEN renewable energy investments are audited in scope of compatibility with national legislation, AKFEN Environmental and Social Management System and sectorial good applications and audit findings are reported and the performance of contractor is assessed.

**Annual Report:** This is a report where the AKFEN Environmental and Social Management System applications are summarized. This report will be presented to EBRD/IFC. In this report, the data about the following items will be compiled:

- Given trainings
- Meetings conducted with local community and NGO's,
- Complaints,
- Number of workers and their distributions (women-men, number of people that are dismissed, etc.),
- Total man-day work,
- Statistics of accidents (accidents, loss time, etc.),
- Usage of resources (usage of energy and natural resources) and pollution prevention (inventory of greenhouse gas, amount of hazardous and other wastes),
- Risk reducing precautions,
- Land acquisition (Resettlement, etc.),
- Precautions to be taken for preserving biodiversity,
- Findings of cultural heritage,
- Information about new investments,
- Information about the realization of determined action plan.



Title	Job Description
<p><b>Council of Environment</b></p>	<p>Environmental council is formed with the participation of HS, global resources and social works specialist under the chairmanship of Environment and HS Manager. Duties Environmental Council are as follows;</p> <ul style="list-style-type: none"> <li>• Following, determining and recording national and international legislations that can be applicable to activities,</li> <li>• Determining the environmental and HS hazards of activities, determining necessary precautions to eliminate or mitigate these hazards, determining necessary and applicable methods to eliminate social complaints,</li> <li>• Making and reporting social, environmental and HS feasibility studies of possible new investments,</li> <li>• Examining that the contractor meets the environmental, social and HS requirements in accordance with the national legislations and relevant international standards (EBRD, IFC, etc.) during the construction stage of the AKFEN energy investments,</li> <li>• Determining sectorial good practice examples about the precautions to be taken,</li> <li>• Providing efficiency of environmental, social and HS applications and making constant revisions, ensuring their development,</li> <li>• Determining training materials in order to provide employees to be working in an environmental friendly manner,</li> <li>• Determining corrective/preventive actions in case of distortion of aims and targets and monitoring the efficiency,</li> <li>• Making periodical audits and reporting,</li> <li>• Preparing reports for revision activities of management,</li> <li>• Preparing annual reports for partners and/or financial institutions,</li> <li>• Making contributions for determining Environmental Social and HS targets,</li> <li>• Preparing plants and drills for emergencies and making personnel ready by preparing periodical drills,</li> <li>• Realizing HS risk analysis studies and if necessary making revisions of risk analysis in every new case,</li> <li>• Recording the environmental and social complaints of employees, local community and local institutions and replying,</li> <li>• Making accident/case analysis, giving proposals about necessary corrective actions by determining the cause of accidents,</li> <li>• Following and controlling the waste management applications,</li> <li>• Monitoring if the permit, license, etc. are obtained timely for the activities,</li> <li>• Applying the stakeholder participation plan, making necessary revisions,</li> <li>• Coordinating that all necessary safety precautions are taken for HEPP's that is under the scope of ICOLD and making audits.</li> </ul>

### 1.3.4. Statutory Audits

In all land and sea areas that are located in sovereignty and adjudication areas including free and exclusive economic regions, Environmental Law having number 2872 and all pollutions and violations in scope of relevant legislation provisions are subject to statutory audits. Thus, all facilities of AKFEN that is under construction or at operation are subject to statutory audits. This procedure is given in App 4.

Audits are subject to following legislations;

- Environmental Law having number 2872
- Environmental Audit Regulation -21.11.2008/27061
- Environmental Permit and License Regulation -10.09.2014 /28828

Provincial Directorate of Environment and Urban Planning are authorized in the audits of environmental legislation. But, in some provinces, Municipalities are authorized for the audit of excavation, vegetable waste oil, etc. implementations.

In accordance with the Environmental Audit Regulation, there are 3 types of audits; announces, unannounced and by complaint.

After audits, minutes are kept and signed to an authorized personnel and a copy of the minute is kept at the plant. In an audit where the responsibility of contractor is realized, the contractor representative should sign the minutes. Before signing, the minute should be read and misused expressions should be corrected.

Plant/Facility Responsible will deliver minutes of audits to AKFEN General Manager, Deputy General Manager and Environment and HS Manager at the same day.



## 2. PERMIT PROCESS FOR PRE-CONSTRUCTION, CONSTRUCTION, COMMISSIONING AND OPERATION STAGES

### 2.1. National Legislation

Starting from project/final decision-making process and operation phase Turkish legislations will prevail.

Relevant legislations about environment are given in report annex with detailed descriptions (See App-18).

#### i. National Legislations About Renewable Energy

- Electricity Market Law numbered 6446
- Law About The Amendment of Some Laws on Electricity Market Law numbered 6719
- Law about Usage of Renewable Energy Sources For The Purpose of Energy Generation numbered 5346
- Law About Geothermal Sources and Natural Mineral Water numbered 5686

#### ii. Legislations About Environmental Regulation

- Environmental Law numbered 2872

#### iii. National Legislations About HS

- Occupational Health and Safety Law numbered 6331
- Labor Law numbered 4857
- Social Security and General Health Insurance Law numbered 5510

#### iv. National Legislations About Energy Efficiency

- Energy Efficiency Law numbered 5627

#### v. National Legislations About Zoning and Building

- Construction Zoning Law numbered 3194
- Construction Inspection Law 4708

#### vi. Legislations About Preservation of Biodiversity

- Law on Land Hunting numbered 4915
- Law on Animal Protection numbered 5199



## vii. National Legislations About Human Resources

- Labor Law numbered 4857
- Social Security Institution Law numbered 5510

## viii. National Legislations About Expropriation and Land Acquisition

- Expropriation Law Numbered 2942
- Forest Law numbered 6831
- Meadow Law numbered 4342
- National Parks Law numbered 2873
- Law on Preventing Intrusion or Possession of Immovable Property numbered 3091
- Transfer of Possessor of Some of the Immobile Goods Left For The Treasury with the Law numbered 431 and dated 03 March 1340 (1924) numbered 4071
- Municipality Law numbered 5393
- State Procurement Law numbered 2886
- Settlement Law numbered 5543
- Law for Provincial Special Administration numbered 5302
- Law of Protection of Cultural and Natural Properties numbered 2863
- Assessment of Immobile Goods Belonging to Treasury and Value Added Tax Law numbered 4706
- Law for Metropolitan Municipalities numbered 5216
- Turkish Civil Code numbered 4721
- Cadastral Law numbered 3402
- Tax Procedure Law numbered 213

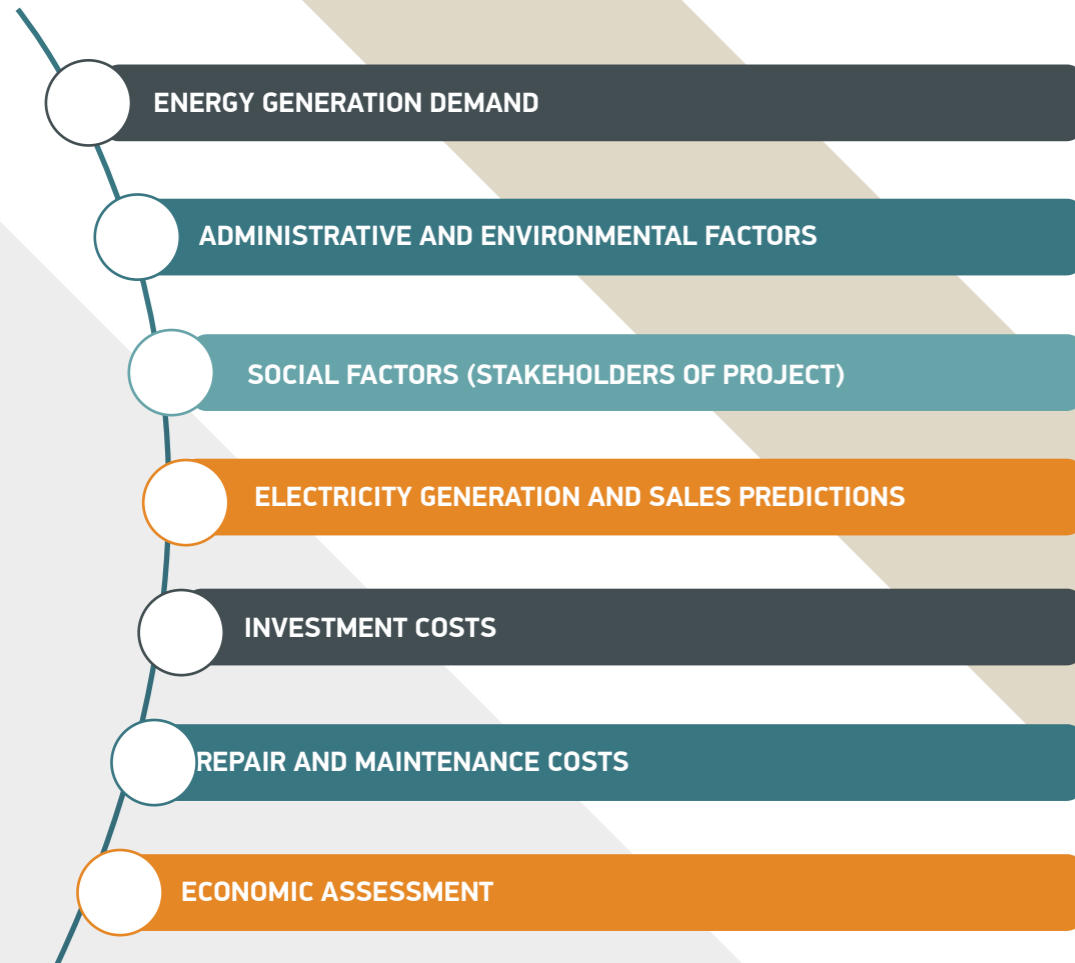
## ix. National Laws About Water Usage

- Law About Underground Water numbered 167
- Law About Waters numbered 831
- Irrigation Unions Law numbered 6172
- Law About The Protection Against Flood Water and Deluges numbered 4373
- Law About Village Potable Water numbered 7478
- Aquaculture Law numbered 1380



## 2.2. Decision Making Process About Final Investment

Final investment decisions in the renewable energy projects are taken after the items stated in Figure 2 are assessed.



**Figure 2: Final Investment Decision Making Process in Renewable Energy Projects**

The process after making the decision to realize the renewable energy project is described separately as pre-construction, construction, commissioning and operation phase.

Before starting any works including the feasibility and engineering works, it is important to assess the area chosen for the construction of energy generation plants within national frameworks and to know what will be the obstacles in terms of local community and to determine a route map to overcome these obstacles.

Designing the Project in accordance with the opinions of local community and with legislations will have positive impact on the Project process both in terms of economy and in time management. Thus after deciding on Renewable Energy Projects, preliminary studies will start.

Human relations will have immense importance in all kinds of researches and activities to be conducted in the field. Thus, starting from preliminary studies, interviews with local community will take place as the Human Relations Responsible determines in the Head Office.

HEPP, WPP, SPP and GPP projects will not be planned in cultural heritage areas and in nationally and internationally preserved areas.

- **Preliminary Studies To Be Conducted Before Feasibility**

For HEPP, WPP, SPP and GPP projects, before the permit process, the availability of the sites in terms of legislations will be determined. Thus, areas that are physically available will be assessed in terms of legislations and the sociological impacts will be studied before feasibility study.

The route to be followed and the regulatory compliance are given in Figure 3. In the construction areas planned for energy generation and in adjacent areas, following items will be determined and a base will be formed in Project examination site, and the area will be assessed in terms of legal status, expropriation and continuity of the Project.

- Cultural properties, archeological sites,
- Current and planned facilities (highways, railways, energy transmission lines, etc.),
- Mining sites,
- Protected areas (Even if there is a unlicensed potentially protected area in the project site, permits should be obtained from relevant institution),
- Land use status,
- Forest areas (Seed Stands, Seed Gardens, Gene Protection Forest, Rejuvenation sites),
- Surface and underground water sources,
- Meadow areas,
- Agricultural areas,
- Aviation obstacle,
- Overlapping with radar and VOR stations (For WPP Projects, minimum 15 km safety distance is required),
- Biodiversity level
- Population density of areas to be impacted from project and social impact level

Any obstacles that prevent realization of the final investment decision or in terms of legislations shall be determined. As a result of preliminary studies, following questions should be answered and if there are possible problems, solutions shall be determined and the process shall continue accordingly.

- Are there any unsurpassable cases in terms of legislations? What kind of methods will be followed in this regard?
- For impassable issues, what permits should be taken?
- Are there any issues to be considered in the planning stage?

If there are unsurpassable issues in terms of legislations, the investment will be ceased and as the negativity is determined before feasibility, the financial and work time losses will be prevented.

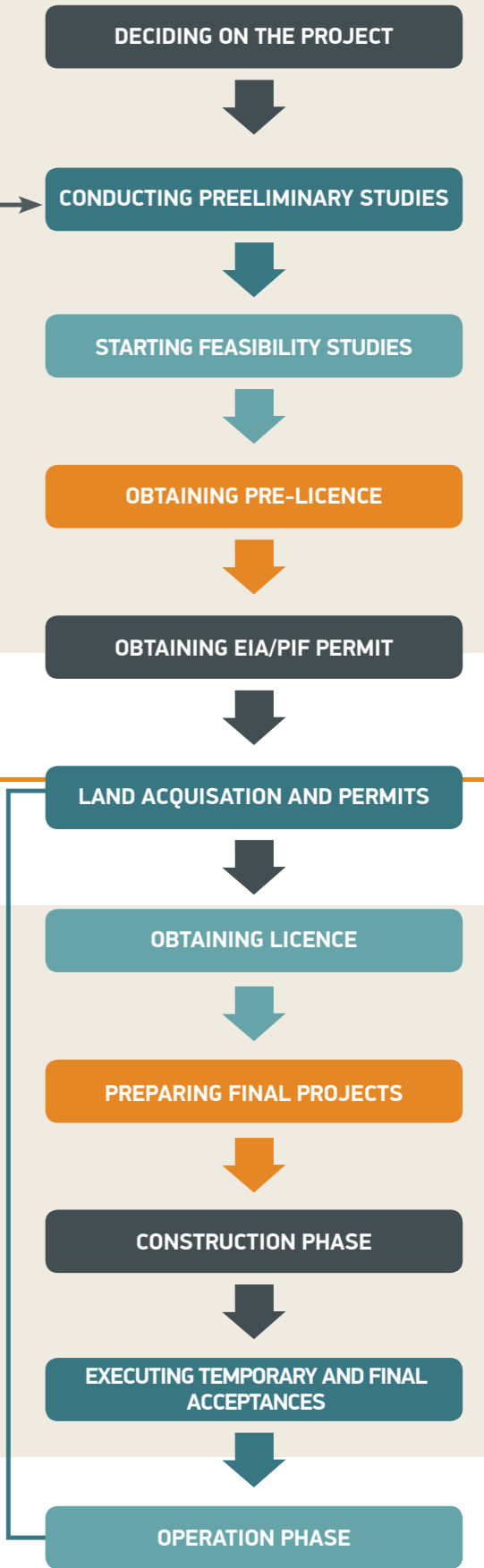
The process showing the works at feasibility stage is given in Figure 3, and the general process after taking investment decision is given in Figure 4.

SUPPLYING OF MAPS	GETTING INFORMATION FROM INSTITUTIONS	EVALUATION OF THE INFORMATION RECEIVED, MOVING TO THRESHOLD ANALYSIS AND FEASIBILITY STAGE
<ul style="list-style-type: none"> <li>• IMPLEMENTARY DEVELOPMENT PLAN- LAND USE PLAN</li> <li>• ENVIRONMENTAL PLAN</li> <li>• SURVEY MAPS</li> <li>• STAND MAP</li> <li>• LAND USE MAP</li> <li>• STALLITE IMAGES</li> <li>• TOPOGRAPHIC MAPS</li> <li>• GEOLOGICAL MAPS</li> <li>• PROTECTED AREAS MAP</li> </ul>	<ul style="list-style-type: none"> <li>• SITUATION SHOULD BE DETERMINED BY SITE WORKS.</li> <li>• PROVINCIAL DIRECTORATE OF ENVIRONMENT AND URBAN PLANNING</li> <li>• REGIONAL OFFICE OF FOREST AND WATER WORKS</li> <li>• REGIONAL BOARD OF CULTURAL HERITAGE PROTECTION DIRECTORATE</li> <li>• INVESTMENT AND MANAGEMENT BRANCH OF PROVINCIAL DIRECTORATE OF CULTURE AND TOURISM</li> <li>• GENERAL DIRECTORATE OF BOTAS (DEPARTMENT OF LAND, CONSTRUCTION AND LAND ACQUISITION)</li> <li>• GENERAL DIRECTORATE OF DSI</li> <li>• GENERAL DIRECTORATE OF TCDD</li> <li>• GENERAL DIRECTORATE/REGIONAL BOARD OF HIGHWAYS</li> <li>• SPECIAL PROVINCIAL ADMINISTRATION/ METROPOLITAN MUNICIPALITY</li> <li>• PROVINCIAL DIRECTORATE OF FOOD, AGRICULTURE AND LIVESTOCK</li> <li>• PROVINCIAL DIRECTORATE OF NATURAL HERITAGE</li> <li>• MUNICIPALITY</li> <li>• GENERAL DIRECTORATE OF TEİAŞ</li> <li>• MİGEM</li> <li>• BRANCH OFFICE OF PROVINCIAL BANK</li> <li>• THE MINISTRY OF DEFENCE</li> <li>• REGIONAL DIRECTORATE OF TRANSPORTATION</li> <li>• PROVINCIAL DIRECTORATE OF FORESTRY</li> <li>• REGIONAL DIRECTORATE OF FORESTRY AND WATER AFFAIRS</li> <li>• RELATED ELECTRICITY DISTRIBUTION COMPANY</li> <li>• PROVINCIAL DIRECTORATE OF SCIENCE, INDUSTRY AND TECHNOLOGY</li> <li>• ENERGY MARKET REGULATORY AUTHORITY</li> <li>• GENERAL DIRECTORATE OF STATE AIRPORTS AUTHORITY</li> </ul>	<ul style="list-style-type: none"> <li>• IS THERE ANY CONFLICT WITH LICENCED MINING AREAS (MINE, QUARRY, SAND AND GRAVEL QUARRY)?</li> <li>• IS THERE ANY ARCHAEOLOGICAL / NATURAL SITE, NATURAL HERITAGE, PROTECTED AREA, TOURISM DEVELOPMENT PROJECT?</li> <li>• IS THERE ANY POTABLE WATER, IRRIGATION AREA, POND, DAM, WELL (EXISTING AND PLANNED)?</li> <li>• IS THERE ANY HIGHWAY, MOTORWAY, VILLAGE ROAD, RAILWAY, BRIDGE, PIPELINE? IS THERE ANY PLANNED PROJECT?</li> <li>• PROJE İLE ÇAKIŞAN RES, GES, HES, JES, TES, EİH VB. MEVCUT VE PLANLANAN PROJE VAR MI?</li> <li>• IS THERE ANY CONFLICT WITH A SUBJECT REQUESTED BY THE PUBLIC DURING PLANNING OF THE PROJECT?</li> <li>• IS THERE ANY ABSOLUTE AGRICULTURE, SPECIALITY PRODUCT, CULTIVATED AGRICULTURE, WATERING AGRICULTURE, FORAGE, LAND CONSOLIDATION AREAS</li> <li>• IS THERE ANY CONFLICT WITH RADAR, VOR STATIONS AND FLIGHT OBSTACLE AREA?</li> <li>• IS THERE ANY SEED STAND, SEED GARDEN, GEN PROTECT FORESTS, REGENERATION SITES?</li> <li>• IS THERE ANY RESIDENTAL AREAS, IMPVED LAND?</li> <li>• IS THERE ANY URBAN WASTE WATER TREATMENT PLANT, REGULAR LANDFILL FOR SOLID WASTES, WILD STORAGE AREA ETC. EXISTING OR PLANNED PROJECTS?</li> <li>• IS THERE ANY CONFLICT WITH MILITARY OR FORBIDDEN AREAS?</li> <li>• IS THERE ANY FREE TRADE ZONE, ORGANIZED INDUSTRIAL SITE ETC. EXISTING OR PLANNED PROJECTS</li> <li>• EXISTING OR PLANNED AIRPORT PROJECTS?</li> <li>• WHERE IS THE NEAREST SUBSTATION AND PLANNED SUBSTATION?</li> </ul>

**Figure 3: Studies To Be conducted Before Feasibility**

**WPP** : WIND MEASUREMENT MAST IS INSTALLED, MEASUREMENTS WILL BE CARRIED OUT FOR 1 YEAR  
**SPP** : SOLAR MEASUREMENT MAST IS INSTALLED, MEASUREMENTS WILL BE CARRIED OUT FOR 1 YEAR  
**HEPP** : FLOW OBSERVATION STATION IS INSTALLED, MEASUREMENTS WILL BE CARRIED OUT FOR 1 YEAR  
**GPP** : EXPLORATION LICENSE WILL BE OBTAINED

• OCCUPATIONAL HEALTH AND SAFETY NECESSITIES ARE REALIZED  
 • STUDIES ARE CONDUCTED IN ACCORDANCE WITH EIA/PIF COMMITMENTS AND ENVIRONMENTAL LEGISLATION  
 • STUDIES ARE CONDUCTED AS TO MITIGATE THE IMPACTS ON ECOSYSTEM  
 • ATTENTION IS PAID TO HUMAN RELATIONS AND SOCIAL AID STUDIES



**Figure 4: General Workflow of Renewable Energy Investments**

## 2.3. Legal Permit Process Before Construction

The Development Plan approval process for all HEPP, WPP, SPP, GPP and ETL projects are given in App 24-6.

### 2.3.1. Permit Process of Hydroelectric Power Plant

Legal permit processes for HEPP Projects are given in App-24-1.

It is very difficult to find adequate and trustworthy flow observation station for HEPP Projects. These data can be obtained from General Directorate of State Hydraulic Works. If there isn't any flow observation station, a measurement station will be constructed at the project area for 1 year and flow data will be obtained. These measurements and values to be calculated with these data for project site will be carefully examined for meteorological modeling and in terms of economical practicability of the project.

For HEPP projects a feasibility study will be prepared and submitted to General Directorate of State Hydraulic Works will be for approval.

With the approval of feasibility study, application for pre-license will be made. Pre-license process for HEPP, WPP, SPP and GPP projects are displayed in one chart in App-24-4.

Necessary legal permits will be obtained before construction.

After obtaining pre-feasibility, license process shall be started with EIA/PIF process. Legal process to be followed for obtaining license is given in App-24-5.

Downstream Water Rights Report will be prepared and approval of General Directorate of State Hydraulic Works will be obtained. For this subject, opinions about current usage cases and future planning are will be obtained from The Bank of Provinces, Branch Offices of Food, Agriculture and Livestock, Municipalities, Provincial Special Administration and Regional Directorate of State Hydraulic Works.

After obtaining EIA/PIF decision, while final projects are prepared, the projects will comply with the commitments given in the reports. If there are any amendments in the project, opinions of Ministry of Environment and Urban Planning and its provincial organization will be demanded. Actions will be taken in accordance with the opinion letter.

Before starting to construction a contract will be made with contractors. In these contracts, an addition clause will be mentioned stating the environmental and occupational health and safety issues. The Contractor will work in accordance with the national legislation and AKFEN Environmental and Social Management System. Also, it will be stated that any pecuniary and non-pecuniary damages caused by acting contradictory to the legislation and AKFEN Environmental and Social Management System will be recourse to the contractor.

## 2.3.2. Permit Process of Wind Power Plant and Solar Power Plant

### 2.3.2. Permit Process of Wind Power Plant and Solar Power Plant

Legal permit process for WPP and SPP Projects, before construction stage are given in App-24-2.

Pre-license process for HEPP, WPP, SPP and GPP project are displayed in one chart (See App-24-4).

Necessary legal permits will be obtained before construction.

After obtaining pre-feasibility, license process shall be started with EIA/PIF process. Legal process to be followed for obtaining license is given in App-24-5, and also for WPP process is displayed in Figure 5.

For WPP and SPP projects, before obtaining pre-license, measurements will be conducted for at least 1 year (See Figure 6). For WPP and SPP projects Turkish Electricity Transmission Corporation organizes a competition. Participation to competition is obligatory for pre-license (See Figure 7 and Figure 8). The measurement and participation to competition process for WPP and SPP projects are also stated below in subheadings.

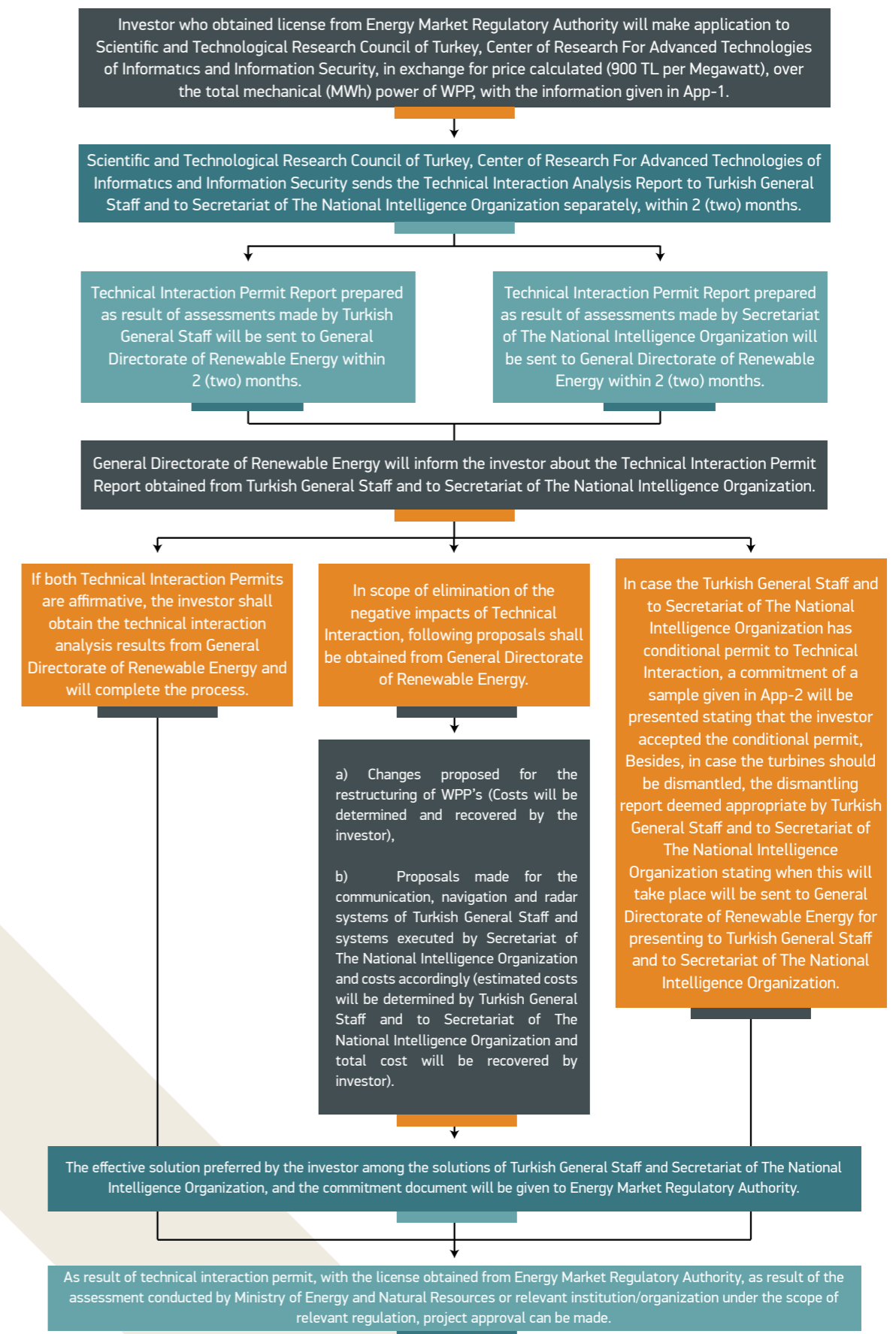


Figure 5: License Process for WPP

# Measurement Process of WPP and SPP

It is obligatory to make at least 1 year of measurements before obtaining pre-license for WPP and GPP, which are both Renewable Energy Projects. Thus, when it's first decided to realize the project, at first a measurement station will be installed and measurement result report will be approved. Legal procedure to follow for WPP and GPP are given in Figure 6.



Figure 6: Measurement Process for WPP and GPP

## Holding Competition for WPP and GPP

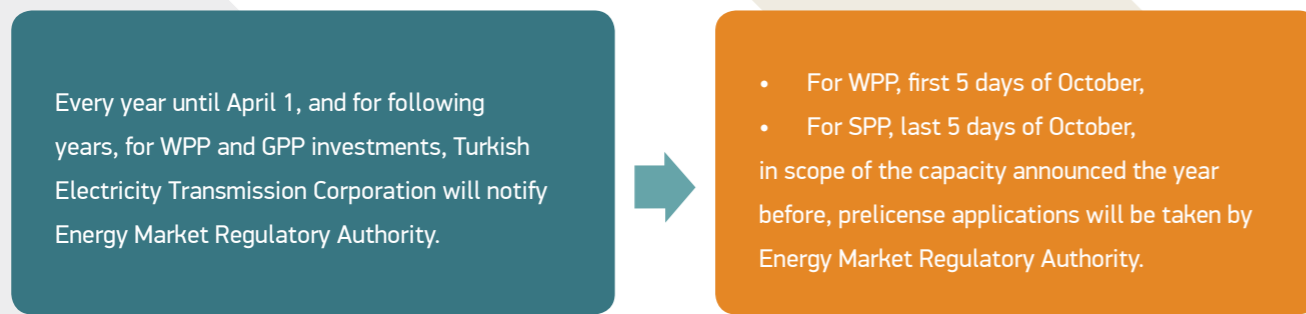
Every year until April 1, and for following years, for WPP and GPP investments, Turkish Electricity Transmission Corporation will notify Energy Market Regulatory Authority, in accordance with the connection point and/or regional basis, the generation capacity based on wind or solar energy that can be connected to a system.

For participation to competition, actions will be made in accordance with the "Regulation for the Competition about Relicense Applications" for installing Power Generation Plant Based on Solar and Wind Power.

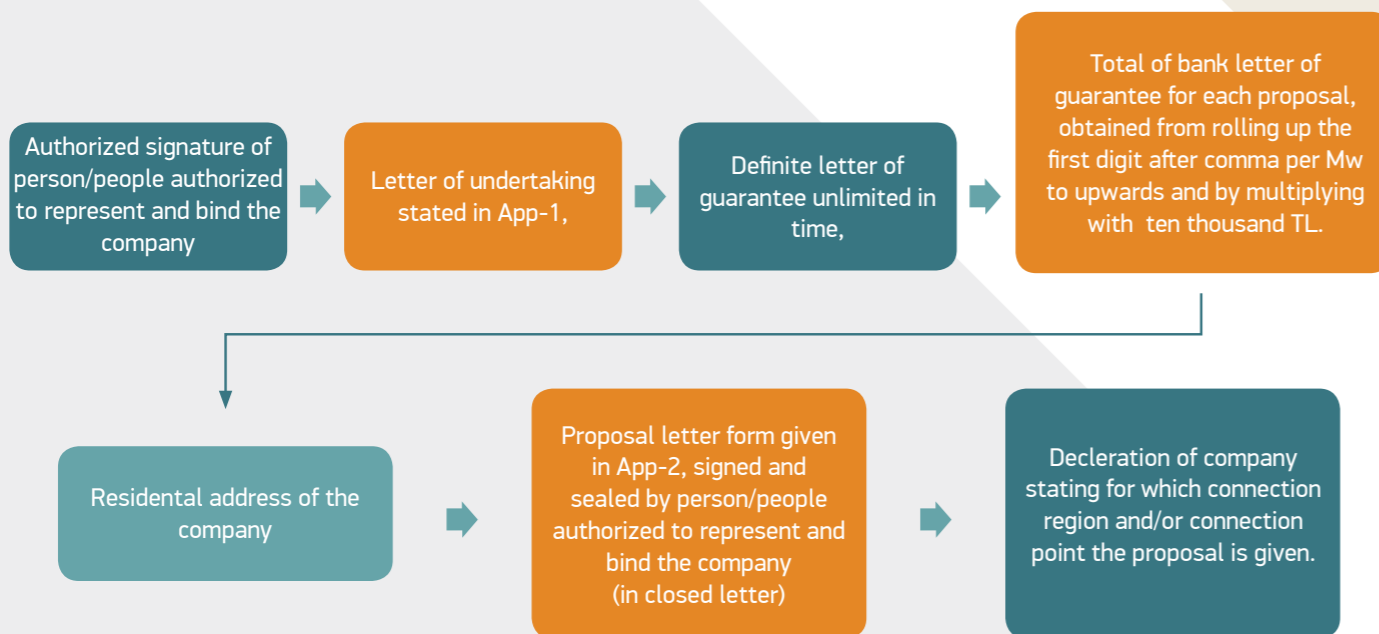
The relicense applications presented to Turkish Electricity Transmission Corporation for installation of generation plant based on wind and solar energy in electricity market will be announced as WPP/SPP projects that can participate to the competition.

The applicator that completely presents the documents stated in Regulation Item 5 to Turkish Electricity Transmission Corporation can participate to the competition. Turkish Electricity Transmission Corporation will announce the location, day and time of the competition.

Legal process is summarized in Figure 7 and 8.



**Figure 7: Turkish Electricity Transmission Corporation Competition Process for WPP and WPP Projects**



**Figure 8: Turkish Electricity Transmission Corporation Competition Process for WPP and WPP Projects, Before Prelicense**

## 2.3.3. Permit Process for Geothermal Energy

### 2.3.3. Permit Process for Geothermal Energy Power Plant

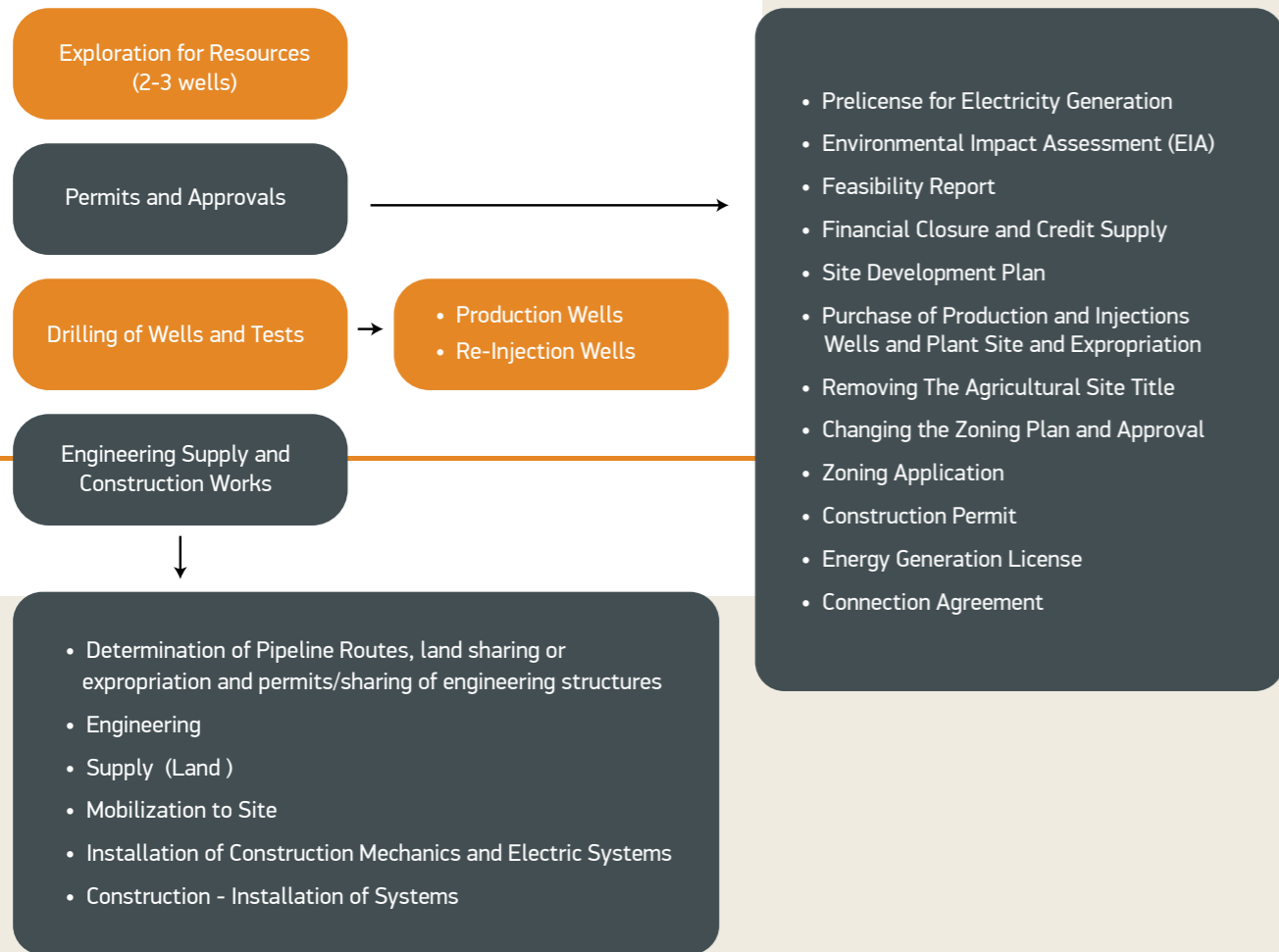
Legal permit processes for GPP Projects are given in App-24-3. Pre-license process for HEPP, WPP, SPP and GPP project are shown in one chart (See App-24-4). For GPP Projects, exploration license shall be obtained before prelicense and operation license (See Figure 9).

Necessary legal permits will be obtained before construction.

After pre-feasibility completed, license process shall be started with EIA/PIF process. Legal process to be followed for obtaining license is given in App-24-5.



## Geothermal Project Business Development Phases



## 2.3.4. Pre-Construction Permit Process for Energy Transmission Line

Legal permit process before the construction of ETL is given in Figure 10. Necessary legal permits will be obtained before construction.

### Legal Process Before The Construction of ETL

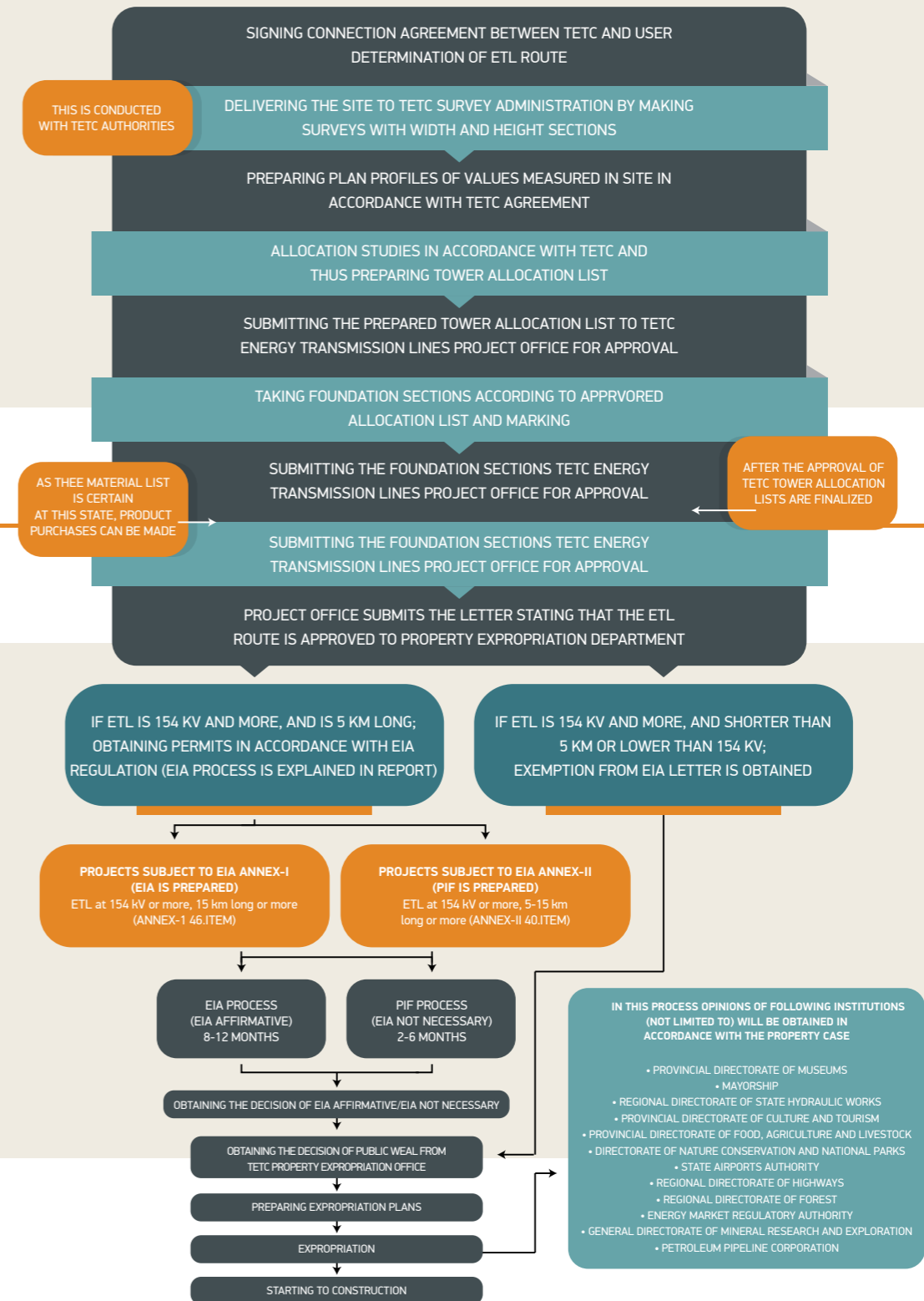


Figure 9: GPP Projects, before construction, construction and commissioning stages

Figure 10: Pre-Construction Permit Process for ETL



## 2.4. Permit Process For Construction Stage

As there aren't big differences in terms of legislations for obtaining legal permits at the construction stage of HEPP, WPP, SPP, GPP and ETL, it is explained in one process and special provisions are stated separately. In this process national legislation, EBRD and IFC standards are taken into consideration.

Legal process for construction is given in 3 stages:

- Preparation for mobilization and installation of construction site (See Figure 11).
- Construction Phase,
  - Legal permit process under the scope of environmental legislation is given in App-25-1.
  - Legal permit process under the scope of HS legislation is given in App-25-2.
- Rehabilitation before construction (See Figure 12).

Photograph 10: Sivas Saraçbendi HEPP Canal Route Rehabilitation -2



Photograph 9: Sivas Saraçbendi HEPP Canal Route Rehabilitation -1



Photograph 11: Mersin Otluca HEPP Landscape -1



Photograph 12: Mersin Otluca HEPP Landscape -2



## 2.5. Permit Process During Commissioning

Commissioning stage permit processes for HEPP, WPP, SPP, GPP and ETL are given in App-26 of this report.

### CONSTRUCTION PERIOD (INSTALLATION OF CONSTRUCTION SITE AND PREPARATION BEFORE CONSTRUCTION)

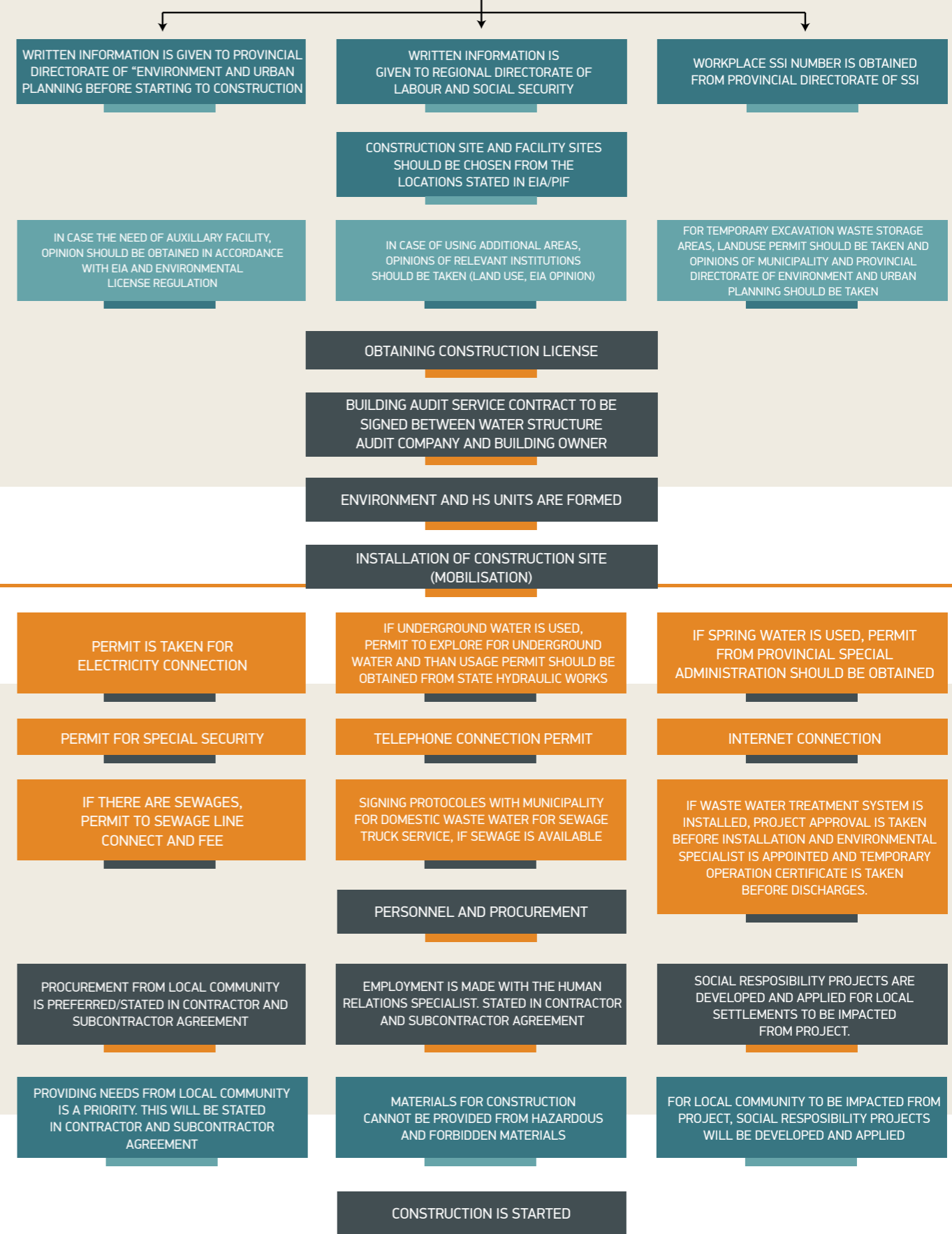
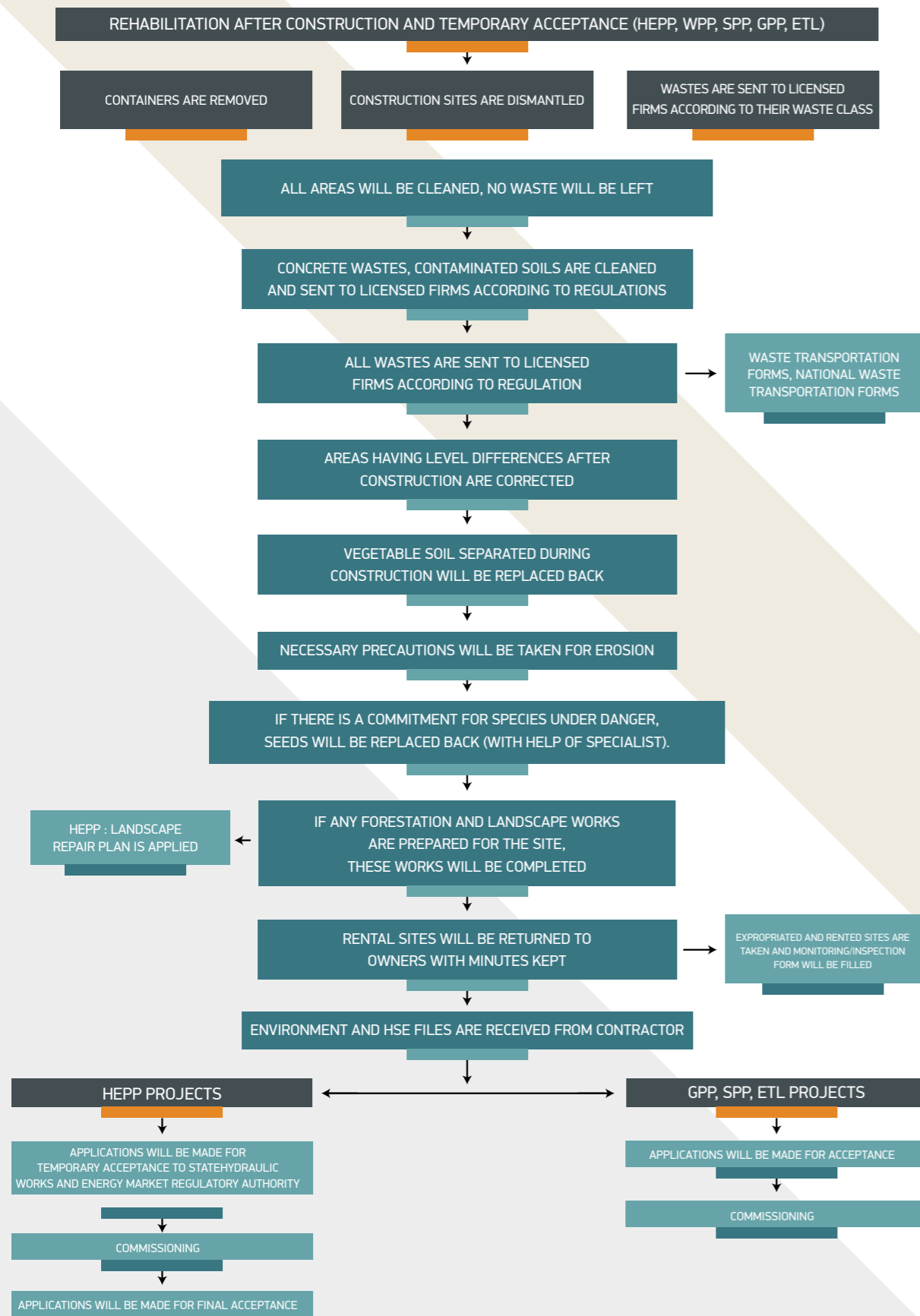


Figure 11: Preliminary Works for Construction and Installation of Worksite

## Rehabilitation After Construction and Temporary Acceptance



**Figure 12: Rehabilitation Process of HEPP, GPP, SPP, WPP and ETL Projects Before Operation**



# 3. MANAGEMENT OF ENVIRONMENTAL AND SOCIAL IMPACTS

## 3.1. ASSESSMENT AND MANAGEMENT OF ENVIRONMENTAL AND SOCIAL IMPACTS (PR 1- PS 1)

### 3.1.1 Assessment And Management Of Environmental Impacts

Environmental Impact Assessment (EIA) process will be a complete procedure for determination of positive and negative impacts on environment due to projects planned to be realized, prevention of negative impacts and mitigating the impacts that can cause hazard to environment, assessment of alternatives of chosen sites with the help of technology and monitoring the project applications and studies that are conducted within this scope.

Without preventing the economic and social development, by protecting the environmental values against economic policies, taking the social impacts of permanent or temporary potential impacts of new projects and developments on environment or their alternative solutions, opinions, concerns and proposals of all relevant parties, into consideration, including pre-commissioning and post-commissioning assessment, was first recognized in the regulation for EIA process that has been published as "EIA Regulation" on 07.02.1993.

The projects/activities that are subject to regulations are divided into sub-sectorial groups as Annex-1 (Projects for which Environmental Impact Assessment will be Applied) and Annex-2 (Project List for which Selection/Elimination will be Applied).

The Ministry has the authority to give decisions of "EIA Affirmative", "EIA Negative", "EIA Not Necessary" for these projects. But, if the Ministry deems necessary, they can limit their authorization, and on the basis of this limitation, the "EIA Affirmative" or "EIA Not Necessary" decisions can be assigned to governorships. Thus;

- For the projects that are under the scope of EIA Regulation Annex-1, Ministry of Environment and Urban Planning will give "EIA Affirmative" record for the projects that are deemed suitable for environmental impact assessment.
- For the projects that are under the scope of EIA Regulation Annex-II, "EIA Not Necessary" record will be obtained from Provincial Directorate that is under Ministry of Environment and Urban Planning.

- If a sub-project is "Out of Scope" project, any permits in accordance with EIA Regulation will not be required. For the projects/activities that are not listed in the annexes of EIA Regulation, during activities provisions of Environmental Law numbered 2872 and provisions of regulations announced in accordance with this law and in accordance with legislation in force, providing that the permits are taken, they will be assessed out of scope.

In EIA Process (See App-27) Annex-I, Annex-II and out of scope projects are completely included and procedure and principles to be applied are explained in App-27 and in sub-titles.

In the renewable energy projects, AKFEN will be responsible to comply with all the procedure and principles of EIA process given in App-27.

"EIA Affirmative" or "EIA Not Necessary" decisions given to the project/activities that are subject to EIA provisions are necessary for starting activities, but they are not adequate. The decisions given under the scope of EIA Regulation will not have the characteristics of final permits and approvals. Thus, in accordance with the legislation in force, all required permits, approvals, opinions and/or licenses should be obtained from relevant institutions or organizations.

During the investment activities, including the stakeholder participation and informing the public, AKFEN adopts the principles of sustainable development and aims to prevent mitigate and manage the environmental and social risks and impacts for the activities. In this scope, national and international environmental legislation and good sectorial examples will be closely monitored.



## 3.1.2. Environmental and Social Management System Action Plan

Environmental and Social Management System Action Plan is given in report annex (See App-1).

In compliance with AKFEN ISO 14001 Environmental Management System, in scope of **Control of Environmental Impacts Procedure** the environmental impacts of all plants in operation and head office are being monitored one by one and action plans are being prepared for risk mitigating/preventing measures.

Prepared Action Plans summarize the organization necessities, activities and monitoring plans that should be realized for three main targets. These targets are as follows:

- Preventing the occurrence of negative impacts,
- When completely eliminating the negative impacts isn't possible, mitigating the remaining impacts to the levels acceptable by environment, health and safety factors and by community,
- Executing works in compliance with Turkish Legislation and EBRD and IFC performance standards and provisions.

Relevant EBRD performance standards are as follows:

PR 1	Assessment and Management of Environmental and Social Risks and Impacts
PR 2	Labor and Working Conditions
PR 3	Resource Efficiency and Pollution Prevention and Control
PR 4	Community Health, Safety, and Security
PR 5	Land Acquisition and Involuntary Resettlement
PR 6	Biodiversity Conservation and sustainable Management of Living Resources
PR 7	Indiginous Peoples
PR 8	Cultural Heritage
PR 10	Information Disclosure and Stakeholder Engagement

Relevant IFC performance standards are as follows:

PS 1	Social and Environmental Assessment and Management Systems
PS 2	Labor and Working Conditions
PS 3	Pollution Prevention and Abatement
PS 4	Community Health, Safety, and Security
PS 5	Land Acquisition and Involuntary Resettlement
PS 6	Biodiversity Conservation and Sustainable Management of Living Natural Resources
PS 7	Indigenous Peoples
PS 8	Cultural Heritage

AKFEN takes the possible environmental impacts into consideration during the preparation of feasibility works of new investments and assesses the alternative choices (in accordance with **Control of Environmental Impacts Procedure**) and gives investment decisions within the framework of protecting the national and social environment.

AKFEN is responsible of the application of Environmental and Social Management System Applications in plants and new projects. However in case cooperation is needed with several contractors for construction, contractor will be demanded to prepare a detailed Environment, Social, Occupational Health and Safety Management plan for their activities. The scope of this detailed Environment, Social, Occupational Health and Safety Management plan is given as annex (See App-19 and App 20).

Contractors will be demanded to take necessary precautions to mitigate the nonconformities and to use competent and experienced personnel for the applications of environment, social and HS necessities that are included in tender documents and they will be asked to assess the environmental and social risks for their services.

The contractors at the supply chain are responsible to act in accordance with the 9001 Quality Management, ISO 14001 Environmental Management, OHSAS 18001 Occupational Health and Safety Management and ISO 50001 Energy Management System Standards.

The construction site works shall start after taking approval the Environment, Social, Occupational Health and Safety Management plan from AKFEN.

In order to assess the performance of contractor in terms of Environment and HS in construction sites, the forms given in annexes will be used (See App 3).

AKFEN is responsible for periodical monitoring/auditing of the contractors for executing their responsibilities in accordance with Environmental and Social Management System Action Plan.

The land selection for renewable energy investments are made by taking the residential areas into consideration, and in design stages, attention is paid so that none of the residential areas are damaged. The following investments of AKFEN will be executed with this same understanding. Expropriation and construction works will be executed in accordance with local and international standards, and the losses of stakeholders caused directly or indirectly by the projects will be compensated within the scope of criteria stated in the project. During the construction and operation of plants, local employment will be a priority and maximum attention will be paid in order to protect the current social structure. All shareholders, NGO's and local community will be informed about the Project activities.

In order to provide continuity and effectiveness of environmental and social performance, AKFEN will provide necessary support, and will provide necessary human resources and financial sources. Human resources policy and procedures will be determined and applied.



# 3.1.3 Monitoring/Audits

## 3.1.3. Monitoring/Audits During and After Construction

AKFEN provides the conformity of the plants in operation and in projects under construction with the national environmental and HS legislation and with EBRD and IFC Performance standards with internal audits. In scope of quality, environment, HS and energy management systems, the records of the audits conducted by internal auditors and third-eye independent auditors will be kept and reporting will be made. In internal audits not only applications, but also the reports of monitoring to be made (dust, noise, vibration, exposure, waste water, etc. analysis reports) in scope of legislations are also audited. In this scope, the audits to be conducted, their periods and reporting are given in App-3 Inspection Process.

Form given in App-3-1 will be used for the audits to be conducted for environment and HS.

The legal necessities of environmental legislation are summarized in App-18.

After monitoring the Environmental Impacts in the plants under construction and in operation, Environmental Impacts Site Control Report (See App-3) will be prepared.

The construction and operation activities will be monitored by AKFEN and they will be recorded in accordance with HS and environmental legislation and social works will be recorded in accordance with EBRD and IFC Performance standards.

The applications in constructions are under the responsibility of Contractor and the control is under AKFEN Construction Management.

The applications in business are under the responsibility of Production License and the control is under AKFEN Management.



# 3.1.4 Environmental Training

Environmental Trainings will be executed for all plants that are under construction or in operation, including the AKFEN head office. After trainings INTERNAL TRAINING PARTICIPATION LIST will be filled in accordance with the quality management system. Besides that these trainings will be recorded at the personnel files. The training process is given in App-14.

<b>CONSTRUCTION PERIOD</b>	TRAININGS WILL BE GIVEN BY CONTRACTOR ENVIRONMENT RESPONSIBLE
<b>OPERATION PERIOD</b>	ENVIRONMENTAL TRAINING WILL BE GIVEN TO CENTRAL MANAGEMENT WITH THE COORDINATION OF PLANT ENVIRONMENTAL SPECIALIST, AT LEAST 1 IN A YEAR
<b>CENTRAL MANAGEMENT</b>	ENVIRONMENTAL TRAINING WILL BE GIVEN TO CENTRAL MANAGEMENT WITH THE COORDINATION OF ENVIRONMENT AND HS SPECIALIST, AT LEAST 1 IN A YEAR

### Responsibilities;

Contractor is responsible for providing the suitable trainings for the employees of construction projects. However, audits will be made by AKFEN.

Environment and HS manager is responsible for providing trainings for the employees in facilities and central management.

As part of orientation program, all new personnel will have basic training that includes waste management and disposal and emergency preparedness.

All personnel will take training about the content of environmental plans. At the end of trainings, the participant records will be kept. If deemed necessary, renewal trainings will be included to the program. The Training Participant List is given in App-14.

In addition to the environmental trainings, special trainings will be provided (using of chemical substances, working in sensitive areas, etc.).

In trainings, existing sources and examples will be used whenever possible.

Each training will be recorded. Trainings will take place in wide rooms and classroom with seats. Besides, toolbox trainings will be provided before work starts.

The trainings to be provided will be determined each year in accordance with **Environmental Awareness Training Plans** and will be monitored with **Environmental Awareness Trainings Control List**.

Trainings with drill will be determined each year in accordance with **Drill Plan** and will be monitored with **Drill Control List**.

### Topics of Environmental Trainings:

- |   |  |
|---|--|
| i. "Environment" concept,   | • Waste monitoring, recording and follow-up applications,                |
| ii. Environmental pollution and consequences,                                 | • Spill/Leak prevention and response,                                    |
| • Air pollution and control, (Works to mitigate the greenhouse gas emissions) | • Importance of recovery   |
| • Climate change,   | iii. Waste Management -Special   |
| • Noise pollution and control,  | • Hazardous wastes   |
| • Water pollution and control,  | • Medical wastes   |
| • Soil pollution and control,   | iv. Emergency response plan, accident report,                            |
| • Waste management- General (hazardous, non-hazardous, domestic, etc.)        | v. Responsibilities in accordance with environmental legislation,        |
| • Temporary Storage   | vi. Administrative sanction in accordance with environmental legislation |
| • Waste Codes (Waste bins and tagging)  | vii. Monitoring and measurements,  |
| • Separate collection at source,  | viii. Reporting  |
| • Waste transfer (storing, loading/unloading, transportation)                 |  |

## 3.2. LABOUR AND WORKING CONDITIONS (PR 2 – PS 2)

Subject about Human Resources are given in Chapter 5.

## 3.3. RESOURCE EFFICIENCY AND POLLUTION PREVENTION AND CONTROL (PR 3 – PS 3)

Pollution Control Process is prepared for possible environmental pollution that can occur in construction and facilities of AKFEN, and precautions to be taken for preventing pollution and response methods are given in App-30.

Contractor will be audited by AKFEN environment responsible and actions will be reported to AKFEN head office.

In AKFEN facilities, all responsibility is under license owner. Facility manager will report the usage of resources and pollution prevention to AKFEN head office in every 3 months.

### 3.3.1 Reducing The Greenhouse Gas Emissions and Energy Efficiency

According to EBRD and IFC criteria, the environmental impact of generation of renewable energy is low to environment and the production of greenhouse gasses is negligible. According to both criteria, in scope of greenhouse gas assessment methodology, for national energy line, the renewable energy projects accepted to provide reduction at the acceptable average emission coefficient. Thus, electricity generation of AKFEN Energy in plants is decreasing the greenhouse gas production (EBRD-GN5 and IFC Greenhouse Gas Reduction Accounting Guidance For Climate- Related Projects).

After assessing the alternatives for new investment projects, possible greenhouse gas emissions will be taken into consideration in feasibility studies.

Table given in EBRD-GN4 stating the grid factors, values of Turkey are as follows:

		2008	2009	2010	2011	2012
Türkiye	EFgrid produced (t <sub>co2</sub> /MWh)	0,605	0,605	0,605	0,605	0,605
	EFgrid reduced (t <sub>co2</sub> /MWh)	0,703	0,703	0,703	0,703	0,703

The amount to be calculated by multiplying the coefficient (EFgrid reduced) with the energy amount generated from renewable resources will be accepted as greenhouse gas mitigation amount. Moreover, greenhouse gas inventory occurring as result of other activities (product transfer, transportation, heating, etc.), the form given in App 16 will be filled in and presented in annual report. Possible emission sources, emission type, measurement style is stated in the form. If one or several emissions listed haven't occurred, that line will be erased or marked as zero. If there is any additional source, it will be added to the list.

In AKFEN Head Office and in active plants, making savings in terms of consumption of natural sources and efficient usage of energy are two important subjects. In order to certify this, ISO 50001 Energy Management System certificate was obtained and applied. Natural sources (water, natural gas, etc.) and energy (electricity, fuel, etc.) usages are recorded. In terms of Energy Efficiency, required data are collected in accordance with Energy/Global Resource Usage Monitoring/Control Procedure and will be reported.

In order to obtain Carbon Certificate, for projects providing greenhouse gas mitigation the Project should be registered to the Ministry of Environment and Urban Planning. For the projects that are under the scope of "Communiqué on Registry Works for the Projects Mitigating the Greenhouse Gas Emissions", works to be done are given in the Figure 13 below.

#### Communiqué on Registry Works for The Projects Mitigating The Greenhouse Gas Emissions

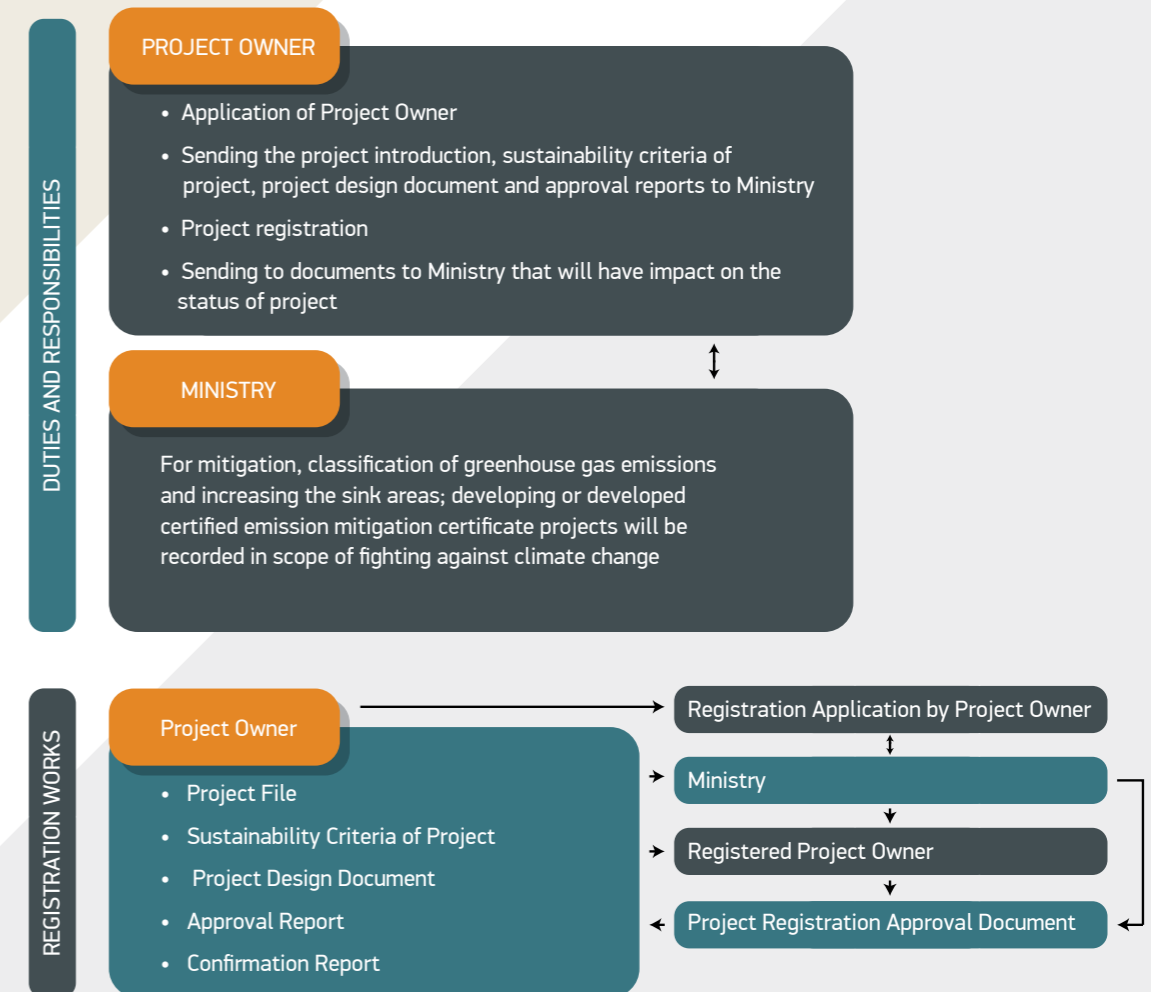


Figure 13: Registration of Projects Providing Greenhouse Gas Mitigation to Ministry of Environment and Urban Planning

### 3.3.2. Waste Management (PR-3 PS-3)

In App 28 the waste management in AKFEN head office, construction sites and plants is explained.

Waste Management Process given in report annex, the following information is stated:

- Responsibility
- Relevant Regulations
- Waste Management
- Waste Containers
- Temporary Storage
- Waste Transfer and Records
- Trainings



**Photograph 13:** Example of Waste Storage Area in one of AKFEN Projects

In AKFEN head office, construction sites and plants, waste management plans and industrial waste management plans are prepared. In the above photograph an example waste storage area is displayed.

#### Waste Management Process;

- National, EBRD and IFC standards and management procedure about the waste process, Monitoring and reporting process,
  - Determining different waste types as defined in international and national regulations,
  - Separation methods,
  - Obtaining waste transportation and disposal permits,
- Preventing and environmental impacts or pollution during works or required criteria to minimize this,
- Records, monitoring and waste monitoring instructions,
- Suitable disposal management and responsibilities,

## 3.4. HEALTH AND SAFETY (PR 4- PS 4)

Information about Occupational Health and Safety is given in Part 4.

## 3.5. LAND ACQUISITION, INVOLUNTARY RESETTLEMENT AND ECONOMIC DISPLACEMENT (PR 5- PS 5)

### 3.5.1. Land Acquisition

In case there is a need to rent and immobile property for temporary works or acquisition of any immobile property or private land or public land temporarily or permanently in the borders or out of the borders of Project site (construction of temporary storage areas or temporary facilities) attention will be paid for following issues;

- If there are any alternatives for land and immobile property, this acquisition and rental will be made from people who will be less harmed as result of this action. Project technical team will realize the determination and assessment of this and the reason will be presented to Project management.
- The process of land acquisition as result of expropriation is given in details in App 8. The contracts, transition to be made for the purchase or renting of a land or other type of immobile property and applications about usage rights will be realized within the framework of national legislation.
- If the mentioned land is planted and the owner or the user of the land has purchased or rented the area before cultivation, the cost of plant will be paid to relevant person. The cost of plant will be determined within the framework of information obtained from Provincial or Regional Directorate of Agriculture. If there is any stock market in the province or in the district for those products, price assessment can be made from that stock market.
- In the contract to be made with the owner of relevant land or immobile property, the rental cost or purchase cost will explicitly be stated. Besides, if the land or immobile property shall be returned to owner after usage, during transfer, if the land or immobile property is damaged, the costs and method of payment and duration of payment for mentioned loss would explicitly be stated in the contract.
- In case of expropriation, the expropriation cost information will be presented to relative person and the Project introduction and Informative Handbook in App 2 will be presented to stakeholders.
- People who take expropriation cost will be encouraged to assess the money in the activity that is located in the region and is open to development (See App 11).



## 3.5.2. Resettlement Plan

### 3.5.2. Resettlement Plan

If the application of Project makes it impossible to live in the impact area and has impact on shelter and livelihood, Resettlement Plan will be applied in such areas. For this application, consent of the relevant community, approval from public institutions, contribution and organization and active participation of investor is necessary. The consent of community is taken while determining the location of Resettlement Plan. Thus, the selection for resettlement will be made with relevant people and with their representatives. Public institutions are responsible in this application at first degree. Because choosing a location, expropriation, health conditions for housing and creating the livelihood processes and protecting the citizens is the first responsibility of any government. In accordance with the Turkish Constitution, Article 23 about freedom of living and traveling, Article 35 about right of property, Article 44 about landownership, Article 45 about protection of people employed in agriculture, livestock and production, Article 46 about expropriation, Article 49 about right to work, Article 56 about health services and protection of environment is under the responsibility of government, Article 57 about right to housing, the government is responsible to provide health living and livelihood to their citizens.

The scope of Resettlement Plan is given in App 10 (See Resettlement Action Plan Format).

## 3.6. BIODIVERSITY CONSERVATION AND SUSTAINABLE MANAGEMENT OF NATURAL RESOURCES (PR 6- PS 6)

In renewable energy projects of AKFEN, EIA Report or PIF is prepared in accordance with the regulation. In scope of these reports, the report format stated by Ministry of Environment and Urban Planning will be used and expert biologists will research the biological diversity features in the foreseen project area and their impact status. Works to be conducted in order to preserve the viability of (i) habitats in danger, (ii) sensitive species, (iii) stakeholder flocks and (iv) primary biological diversity features in accordance with changing conditions and impacts through the project cycle.

In case the impacts on biological diversity and ecosystem cannot be prevented, precautions will be taken in order to minimize the impacts and to restore the biological diversity and ecosystems. For each project, during the construction and operation phases, a calendar will be prepared for the mitigating precautions to be taken in terms of biological diversity, responsibilities, monitoring, inspection and applications. Thus, the "Biological Diversity Management Plan" given in App 1-1 will be prepared by contractor and after the approval of AKFEN; plan will be executed by contractor. The monitoring, inspections and applications during operation will be conducted by AKFEN.

In order to prevent the closure of plant stoma during the activities, necessary precautions will be taken against dust emission. Solid or liquid wastes will not be disposed in natural areas, and waste will not be spilled in river creeks and the streambed will not be restricted.

The vegetable soil will be scraped during excavation works and will temporarily be stored, and after completion of works will be replaced.

Wastewater will be treated and after meeting the discharge standards, will be discharged to receiving environments.

In the operation phases of HEPP; in order to provide continuity of the natural life, for water amounts to be discharged to streambeds, Flow Monitoring Station will be installed and designed accordingly, and the station will be equipped with GPRS and the online connection of stations to the Regional Directorate of State Hydraulic Works will be provided. For the passage of fishes migrating in water or other water organisms, necessary passages will be provided. For this purpose fish passages will be installed or necessary preliminary researches will be conducted in order to provide continuity of the species in ecosystem and fish transfer will be realized.



Photograph 14: Flow Monitoring Station

In the wind power plant projects, during the operation phase, field studies and monitoring's will be made for birds and bats and necessary precautions will be taken for preserving the biodiversity. In order to prevent bats from negative impacts, microwave transmitters will be placed over the turbines and the crashing will be diminished.

Besides the shadow vibration and noise impact caused by the turbine blades will be assessed. In required cases (in case there is a residential area nearby, etc.), the latitude of the region and the angle of sun rays will be taken into consideration and the power of this impact will be determined with modeling. Besides, big metal bodies of turbines and big blades can cause reflections/blocking of TV signals and thus can cause image shadows. However, this is seen more in analogue signals when compared with digital signals. These possible impacts on signals are directly connected with location of turbine (altitude, etc.) and location (if there is more than 1 turbine); it will be taken into consideration in site location.

In wind power plants, in order to preserve biological diversity, bird-monitoring studies will be conducted in construction and operation phases as long and adequate as AKFEN deems necessary. However these periods can be changed with the decision of Ministry. These works will take place in spring and autumn, in bird migration season, and they will be realized by a specialist Ornithologist and Biologists. In order to determine bird migration activities, location and birds using adjacent

areas, monitoring stations will be determined under the scope of works. In the monitoring made at the previously determined areas, bird types, flight heights, land use purposes, reproduction and population, protection status, etc. will be monitored. In order to record these works, monitoring reports will be prepared in regular intervals stated by AKFEN. In reports, the bird migration density and their protection status will be stated and suitable protection measures will be stated.

For WPP, following areas will be taken into consideration as they have importance in terms of biological diversity. Additional assessment will be made for the projects to be realized or current projects in these regions or in adjacent areas and biological diversity studies will be conducted:

- Important Bird Areas (IBA) determined by Birdlife
- Areas of important bird migration
- World Heritage Protected Area
- National Parks
- Special Protected Areas determined with national legislation
- Natura 2000 areas determined in scope of EU legislation
- Virgin forests
- Peat land

In GPP, in order to provide continuity for biological diversity, for drills that can have impacts on current ecosystem, controls and monitoring will be made by specialist. Besides, before the construction site, the species determined in flora and fauna studies will be monitored and the areas they use will be examined. Thus, the biological diversity will be monitored and possible changes will be determined.

In order to reduce the impacts of CO2 and H2S emissions caused by GPP on flora components, the emissions will be kept at the limit value stated in the Regulation on The Control Of Air Pollution Caused By Industry. In order to achieve this, laboratories accredited by Ministry of Environment and Urban Planning will make necessary analysis and measurement and necessary precautions will be taken as result of analysis and measurements. If the results exceed the limit values; in order to reduce gas emissions new additional plants such as H2S catchment system will be installed.

In addition, in order to prevent the fauna elements from the GPP site, the site will be covered with fences, etc.

In the operation phases of projects (HEPP, GPP, WPP, SPP), solid and liquid wastes will not be discharged in natural sites.

In the renewable energy projects of AKFEN, live natural source production is not foreseen.



### 3.6.1. Sensitive and Protected Areas

Activities will not take place in these areas, if possible. However, if the project is legally located in sensitive or protected areas; necessary permits will be taken in accordance with the relevant law and regulations for the realization of the project.

For the projects located in sensitive and protected areas, necessary ecosystem assessment reports and management plans will be prepared. The construction and operation phases of the projects will be realized within the frameworks of assessment reports and management plans.

### 3.6.2. Environmental Flow and Downstream Rights

Environmental flow is amount of water that is added to basin for minimum water needs and over the downstream rights only for living creatures. In HEPP Projects, if demanded by Directorate of Nature Conservation and National Parks, "Assessment Report for HEPP Projects and Other Hydraulic Action Demands" will be prepared. This report will be prepared by at least 3 specialists and will be presented to General Directorate of Nature Conservation and National Parks for approval. In scope of the report, to determine the environmental flow amount, preservation of streambed and the ecological life around will be aimed and at the same time in order to provide maximum outcome from HEPP, the appropriate flow rate will be calculated in accordance with a scientific method stated by AKFEN; and will be applied to dams and regulators of AKFEN.

The photograph of fish passage in AKFEN regulators is given below.



Photograph 15: Fish Passage

In case Assessment Report for HEPP Projects and Other Hydraulic Action Demands is not demanded, mentioned calculations will be stated in PIF/EIA reports and the lifeline amount will be determined.

Besides from the lifeline amount for ecosystems, in order to determine the water rights of streambeds, Downstream Water Usage Rights Report will be prepared. This report will be presented to Regional Directorate of State Hydraulic Works and approval will be obtained.

AKFEN always pays attention to preserving the current ecosystem in investment areas and to protect the function of the site. Thus, with this aim, besides from organic and inorganic point of view for ecology, the sociological dimension is also considered and maximum attention is paid to preserve the rights of stakeholders and water needs of local community and legal businesses are met.

### 3.6.3. Ornithological Assessment

In WPP, for examination of possible impacts of WPP's to birds, biological diversity, ecosystem values and bird migrations report will be prepared and presented to General Directorate of Nature Conservation and National Parks and necessary permits will be obtained.

## 3.7. ASSESSMENT OF SOCIAL IMPACTS AND MANAGEMENT (PR 1,7- PS 1,7)

Main aim of Social Impact Assessment and Management is to prevent any damages or prevent possible damages, or at least mitigate the damages for the people living in residential areas that is under impact area of investment and in case the current economic, social and cultural relations and their livelihoods. Negative impacts or victimization will be compensated by mutual agreements and national legislations. General approach about this subject is given in App 12. With downstream water rights report to be prepared for HEPP projects, the rights of local community are protected. Besides livelihoods of local community, their expectations from project, and their complaints will be determined and solutions will be found. Besides, social responsibility projects for the stakeholders that are under the impacts area will be developed and applied.



## 3.8. CULTURAL HERITAGE MANAGEMENT (PR 8 - PS 8)

During the site location for project conducted by AKFEN, connections with relevant Provincial Directorate of Culture and Tourism will be made and project site will be examined. As result of examination, the project site will be determined in accordance with the instructions of relevant institution and according to cultural heritage detection. However, if there is any cultural heritage that is found as result of excavation works, process is stated in App 17.

In accordance with Code of Protection of Cultural and Natural Properties numbered 2863, Article 4, it is stated that: Those finding mobile or immobile cultural and natural items, or those knowing there is cultural and natural items in their land, should report this to nearest museum office within at least three days or to village headmen or other local authorities.

If this happens during the construction activities the contractor shall inform AKFEN and museum authorities immediately. In case cultural items are detected during project activities, the process to be conducted is given App 17.

## 3.9. INDIGENOUS PEOPLE AND STAKEHOLDER PARTICIPATION (PR 1,7,10, PS 1, 7)

With stakeholder participation plan, protection of natural values, analysis of socio-economic and cultural problems is aimed. Thus, the concerns, expectations and demands of local communities, NGO's, local authorities and other groups will be taken into consideration and will be determined and assessed.

Knowing all the parties (local community, civil organizations, media, private sector, universities, NGO's, etc.) in stakeholder participation plan and the approaches about this matter is examined and their participation will be provided. The preparation of Stakeholder Participation Plan is given in App 15 and a photograph from a meeting is given below.



Photograph 16: Stakeholder Participation Meeting (AKFEN Mersin Otluca HEPP -2009)

# 4. HEALTH AND SAFETY MANAGEMENT

## 4. HEALTH AND SAFETY MANAGEMENT

AKFEN takes the conditions and factors that can have health and security impact on employees or other workers, visitors and other people in workplace with systematic approach and thus formed OHSAS 18001 Occupational Health and Safety Management System. In order to audit and promote HS performance, special, measureable, reachable, realistic targets are set.

With periodic intervals, reaching to identified targets will be controlled thus the efficiency of Occupational Health and Safety applications will be controlled and revised. The degree to reach these targets will form important performance criteria for Occupational Health and Safety Management System (monthly accidents, injuries, near miss accidents, numbers of nonconformities, good applications, etc.).

### Aims

- To create safe working environment,
- To ensure safety of workers in field,
- To protect life safety of people nearby,
- To prevent loss or damages of products,
- To comply with law, legislation and international standards.

### Occupational Health and Safety Targets

- Lost Time Incident Rate (LTIR) <1
- Total Registered Incident Rate (TRIR) < 5
- Number of personnel took HS and Environmental training: %100

With the trainings, it is aimed to provide health, safety and environment awareness at the highest rate and to raise awareness of personnel about these subjects.

## 4.1. NATIONAL HS LEGISLATION

Followed occupational health and safety legislations, but not limited to, are given below,

- Occupational Health and Safety Law numbered 6331
- Labor Law numbered 4857
- Social Insurances and General Health Insurance Law numbered 5510
- Regulations of above-stated laws

### 4.1.1. Documents

In scope of OHSAS Occupational Health and Safety Management System, the legislation follow-up in AKFEN will be made with documents stated below,

**Legal Obligations List**

**Law Amendment Detection Report**

# 4.1.2 Legal Notices

- NACE Code of the workplace will be obtained from SSI number,
- Hazard class of the workplace will be determined in accordance with the above mentioned code,
- Appointments of HS specialist, workplace doctor and other health care personnel will be made according to workplace hazard class.
- If these services will be provided from a Joint Health and Safety Unit, the appointments will be approved from online HS system.
- In case the numbers of employees in workplace changes or in case of amendments in regulations, the online appointments will be revised.

Occupational Health and Safety Procedure is given in Figure 14.

Besides during the studies of legal conformity and occupational health and safety documents, the chart given in App 22 will be used.

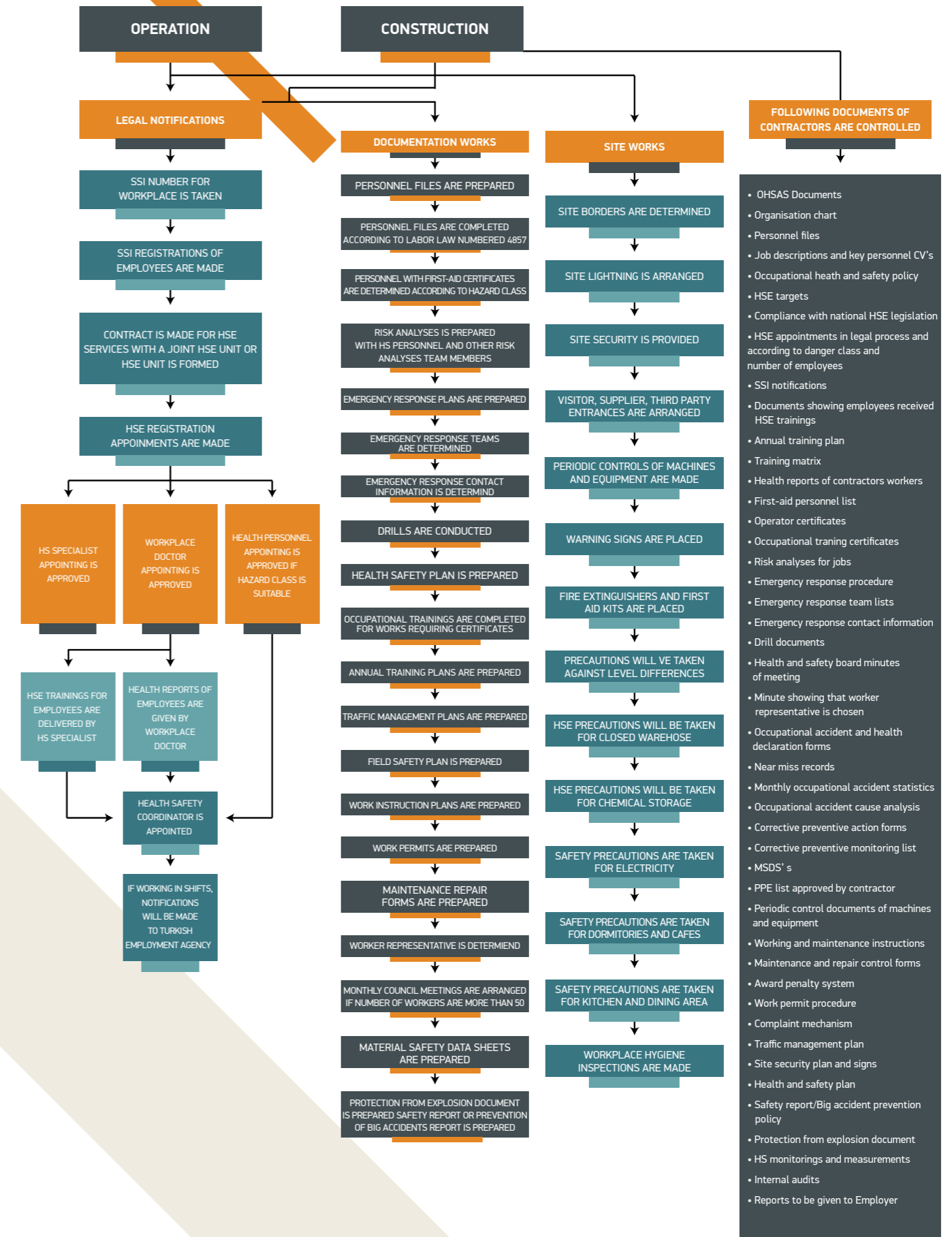


Figure 14: Occupational Health and Safety Procedure

## 4.2. INTERNATIONAL HS LEGISLATION

During our activities, besides national legislations, following international legislation necessities will be followed and applied.

- EBRD 2014 performance specifications PR 2 and PR 4
- IFC 2012 performance specifications PS 2 and PS 4
- IFC 2012 guidebooks

## 4.3. OCCUPATIONAL HEALTH AND SAFETY MANAGEMENT IN AKFEN HEAD OFFICE AND ACTIVE PLANTS

### 4.3.1 Work Instructions

During the operation and construction, works will comply with the occupational safety instructions, which is prepared within the scope of OHSAS 18001 Occupational Health and Safety Management System.

Trainings will be provided to the personnel about how to conduct works with safety and about the precautions to be taken, the trainings will be recorded and will be kept in personnel files. Thus, the personnel to conduct work will be informed and warned about the hazards/precautions of the work.

In case of personnel change, accidents, physical change of workplace, amendments in relevant legislation, prepared instructions will be revised.

Main occupational instructions are, but not limited to, as follows;

- Working at height
- Electric works
- Hot works
- Confined spaces
- Working in or near water
- Locking, tagging system
- Lifting operations
- Scaffolds and stairs
- Safety of hazardous materials
- Transporting materials or equipment

In case subcontractors are used, the employees of subcontractor will be asked to apply the above-mentioned instructions and they will be required to have necessary trainings.

## 4.3.1.1 Working at Height

Any works that has the possibility to fall over and to be result in injuries because of level differences are referred as working at height. (**Regulation on Occupational Health and Safety in Construction Works**).

- All the materials and equipment in field will be in conformity with legislation requirements.
- Work permit system will be used at working at heights.
- Installation and dismantling of materials and equipment of working at height will be made by authorized personnel and they will be controlled after bad weather conditions and weight capacity tags will be put on visibly.
- The stairs used in the site will be in conformity with legislation requirements.
- The personnel working at height shouldn't have fear of height, blood pressure or diabetes.
- In case there aren't any locations for safety harness during working at heights, life lines will be used.
- Suitable PPE will be provided for working at height (work cloths, hard hats, gloves, harness lanyard, etc.).
- Special trainings will be given to personnel working at height and these trainings will be recorded and kept in personnel file.
- Safety harnesses and devices will be controlled monthly and will be recorded with P10-L01 Form.
- Personnel will not start job without a health report stating, "can work at height".
- Working at Heights Work Instruction in scope of OHSAS 18001 Occupational Health and Safety Management was prepared.



## 4.3.1.2 Electric Works

All electrical equipment and electric sources will be used in accordance with safe usage instructions. Before usage the controls of equipment will be made and also period controls will be made and these controls will be recorded with P10-L01 Form. As result of controls, with monthly color code application, the equipment will be marked as safe. Besides, before start of each workday, visual controls will be made.

- Work Permit Instruction will be used in machines and equipment to be controlled, repaired and maintained.
- In scope of OHSAS 18001 Occupational Health and Safety Management System, works will be conducted in compliance with Electrical Works Instructions.
- Suitable PPE will be provided for electric works (work cloths, work shoes for electricians, isolation gloves, etc.).
- Special trainings will be given to personnel and these trainings will be recorded and kept in personnel file.

### Periodic Controls

- Periodic controls of electrical installation, grounding installation, lightning conductor installation and accumulator and transformer and similar electrical installations will be made by electrical engineer, electrical technician or high electrical technician.
- All electrical equipment and energy boards will be controlled periodically in accordance with relevant regulations.
- Electric motors, transformers and stationary units and stationary electrical equipment will have groundings and will be controlled periodically in accordance with relevant regulations.
- For periodic controls, **Equipment Requiring Periodic Controls and Necessary Controls Form** are prepared in scope of OHSAS 18001 Occupational Health and Safety Management System.
- **Locking Tagging System Instructions** will be used for machines and equipment.

### Low Voltage

In boiler or in similar narrow and wet areas with conductive parts, if lamps working with alternative voltage are being used, maximum 42v will be used with separate transformers that are located outside of the work place.

Electrical devices that are used in construction sites and in other open areas will be worked with low voltage or with 1/1 separate security transformers or they will be specially produced and have two insulators. In case the security transformers are being used, only one hand tool will be connected to output circuit.

Boilers, tanks and in similar narrow and wet areas with conductive parts low voltage as used in lamps will not be used. If right current is being used, usage current will not be more than 100v and positive magnetic pole will be grounded. In alternative current the current will be maximum 42v. In these areas flexible and isolated cables will be used and they will not be crushed (<http://www.emo.org.tr/ekler>).

### High Voltage

Other high voltage equipment in the centers of transformer and capacitor will be placed in closed special cells with bars or in wire-floored cages. Chairs, rubber gloves, fire extinguishers that are isolated from high voltage cells and grounding equipment and instructions will be kept ready.

Transformers and capacitors or other similar devices having more than 5000 liters of oil will be placed out of the workplace buildings and will be placed in any calls, partitions that can collect the oil and will be placed on a well or a pit.

The workplaces with transformers and capacitors or other similar devices should be adequately ventilated and the walls and doors should be fire-resistant.

The air-cooled transformers to be placed in workplaces will be kept away from flammable materials or should be separated from flammable materials with fire resistant partitions or should be covered appropriately (<http://www.emo.org.tr/ekler>).



## 4.3.1.3 Hot Works

### 4.3.1.3 Hot Works

In activities of construction that forms flames or sparks or in welding works, work permission is required. Equipment used in this category are welding and burning machines, electrical devices, flaming devices, soldering irons, valve grinder, pneumatic machinery, electrical or battery-powered devices and mobile equipment and materials having motors.

- Special trainings will be given to personnel and these trainings will be recorded and kept in personnel file.
- Work Permit system will be used.
- Suitable PPE will be provided for hot works (welding mask, welding apron, billed cap, etc.).
- Workplace doctor will monitor health condition of welding personnel and if the doctor demands, additional examinations will be made.
- In scope of OHSAS 18001 Occupational Health and Safety Management System, works will be conducted in compliance with **Working at Hot Works Instructions**.

### 4.3.1.4 Confined Spaces

In works where entrance is made with difficulties, and works are conducted under hard conditions, such as tanks, and where respiratory devices are used, special safety precautions will be applied.

- The employees will not be exposed to hazardous dust or other external impacts (gas, vapor, dust, etc.). If employees should work in areas where there are hazardous and harmful materials in the ambience, where the oxygen is not adequate or in flammable areas, the ambient air will be measured, monitored and necessary steps will be taken in order to prevent any hazards.
- Suitable PPE will be provided for personnel working at confined spaces.
- In case works are conducted in limited and conductive areas, electrical devices that have low safe voltage or circuit breakers and lightning devices will be used. The power sources of low voltage or circuit breakers will be placed outside of the limited and conductive areas and only one consumer source will be connected.
- In limited and conductive areas (steel structures, canals, switch house, etc.) only low voltage lightning, circuit breakers or cut out relay will be used.
- Work Permit Instructions will be used.
- In areas where special respiratory devices are used, at least one watchman will be present.
- Special trainings will be given to personnel and these trainings will be recorded and kept in personnel file.
- In scope of OHSAS 18001 Occupational Health and Safety Management System, works will be conducted in compliance with Confined Space Actions Works Instructions.

## 4.3.1.5 Working In or Near Water

### 4.3.1.5 Working In or Near Water

While working on water, at least two people will be present and they should see and hear each other. Besides, these people will be working unless they are close to boat at anchor or to lifesaving boats.

When the air temperature is low and in conditions where there is a possibility that a worker can fall into water, lifesaving boats connected to a rope will be kept present. In case works are conducted in water, lifejackets will be provided. Besides in order to be protected from cold and humidity, protective clothing or gloves, boots, etc. will be provided.

With early flood warning systems all works conducted in water or near water will be protected from floods.

- In scope of OHSAS 18001 Occupational Health and Safety Management System, works will be conducted in compliance with Working In or Near Water Instructions.
- Special trainings will be given to personnel and these trainings will be recorded and kept in personnel file.
- Work Permit Instructions will be used.





### 4.3.1.6 Locking Tagging System (PR-4, PS-4)

This system aims to prevent any damages to human, machines and environment as result of energy given to equipment or accidentally turning on the equipment during maintenance and repairs.

If any worker needs to make maintenance or repairs of a hazardous machine, Locking Tagging System should be used. This system involves instructions for turning on and off the equipment and devices.

These instructions will be followed during service or maintenance in order to prevent unexpected energy loading or operations or releasing a stored energy.

The instructions can depend on devices having electrical, hydraulic, pneumatic, mechanic, thermal or chemical hazards and in case of an accident, how many workers will be impacted. Thus, all personnel will have information about locking-tagging system and procedure.

- In scope of OHSAS 18001 Occupational Health and Safety Management System, works will be conducted in compliance with Locking Tagging System Instructions.
- Special trainings will be given to personnel and these trainings will be recorded and kept in personnel file.



### 4.3.1.7 Lifting Operations

- Bu In scope of OHSAS 18001 Occupational Health and Safety Management System, works will be conducted in compliance with Lifting Operations Instructions.
- Work Permit will be used for lifting materials weighted 5 tons or more.

Unless otherwise is stated in standards, lifting and transfer equipment will have the strength to lift the stated load that is heavier than at least 1,25 times and they will have durable and adequate load breaks (**Regulation on Health and Safety Conditions for Usage of Work Equipment**).

Lifting works will be made with lifting equipment whenever possible, however in obligatory cases manual handling will be made. When manual handling is done, ergonomic rules will be applied.

In operations outside the buildings; the wind speed will be measured periodically and is the wind speed exceeds 12 m/sec or 45 km/hour; lifting operations will not be permitted.

Cranes and lifting equipment will be equipped with safety locks in order to prevent the rope from release.

Loads will not be carried above the workers, and during lifting works hazardous area will be emptied and if necessary, warning band or signs will be placed. During lifting, directing with hands will not be made.

Lifting works will be conducted by certified personnel and with the presence of engineer, foremen or inspector.

During lifting works certified signalman will be used to provide communication with crane operator. Crane operator will obey the "stop" command, no matter who says, and signalman will provide other commands.

### Periodic Controls

- Periodic controls of lifting machines and lifting equipment will be made by mechanical engineers, technical teachers graduated from mechanical or metal department or machine technicians or high technicians. In case non-destructive testing is used, engineers, technical teachers or high technicians in accordance with TS EN ISO 9712 standard will conduct controls. (Regulation on Health and Safety Conditions for Usage of Work Equipment, Article 2.2.2. (Amendment: RG-23/7/2016-29779)).
- Periodic controls of used lifting equipment will be made in periods stated in regulations and control reports will be kept in workplace.
- Safety harness and devices will be controlled monthly and will be recorded with P10-L01 Form.
- Color code will be used for lifting equipment.
- Worn out ropes and hooks will not be used and will be removed from site immediately.
- Expiration dates of slings, ropes, etc. will be given and will be recorded with **Control Form**.

## 4.3.1.8 Scaffolds and Stairs

- In scope of OHSAS 18001 Occupational Health and Safety Management System, works will be conducted in compliance with Working at Stairs Instructions. Work Permit system will be used.
- Special trainings will be given to personnel and these trainings will be recorded and kept in personnel file.
- Personnel will not start job without a health report stating, "can work at height".
- The personnel working at height shouldn't have fear of height, blood pressure or diabetes.

The equipment of working at height will be in good condition. All scaffolds, working platforms, stair rails, barriers will be installed and dismantled by and authorized personnel in accordance to their sizes and material features.

Works that are conducted at places having risk falling from height, without rails or protectors, in scaffold works or in short works such as mounting; systems such as safety harness will be used to prevent falling.

All scaffolds will be designed, constructed and maintained as to prevent falling or accidentally swinging. Cross-connections will be provided throughout the scaffold.

Working platforms, scaffold stairs will be constructed and used in a manner that prevents workers from falling down or protecting workers from falling items.

Maximum load capacity of scaffolds will be stated on scaffolds.

**In following cases authorized personnel will control the scaffolds:**

- Before usage,
- Periodically as stated in legislations,
- In case of changes in weather conditions, after seismic quakes and in any cases that has negative impact on solidness of scaffolds.

## 4.3.1.9 Safety of Hazardous Materials

Materials used in sites and having hazard for human and to environments will be determined and the carriage, usage, storage and disposal of these materials will be made in accordance with the legislations.

Hazard conditions of chemical substances will be determined with "Material Safety Data Sheet" (MSDS) that will be requested from seller or producer.

MSDS's will be kept either in medical rooms or in working sites or in storage sites.

In site, actions will be taken as stated in MSDS forms and necessary controls will be made. In case the workers are exposed to hazardous chemicals actions to be taken and PPE's to be used will be stated in written instructions and personnel will be informed with trainings.

## 4.3.1.10 Transporting and Equipment

In scope of OHSAS 18001 Occupational Health and Safety Management System, works will be conducted in compliance with **Work Instructions**.

In case the heavy loads should be carried in highways, a leader/escort car will accompany the carrying vehicle and warning signs will be placed on the vehicle stating "Caution Long Vehicle" and necessary lights and reflectors will be placed.

For carriage of loads that has special features in terms of weight and size, and when it is not possible to carry these loads in other ways and when these loads exceed the limits, it is obligatory to take permissions form General Directorate of Highways (Highways Traffic Law numbered 2918).

Before the material and equipment enters into the construction site, operator certificate, periodic control form, maintenance records and other documents will be presented. All vehicles (except for ambulances, fire trucks, etc.) will be subject to visual controls. Above-mentioned documents will be presented to authorities. Vehicle user and passengers are obligated to wear seatbelts and speed limit must be obeyed. In vehicles fire extinguisher, first aid kits and reflectors will be present.

### 4.3.1.11 Drilling-Boring Works

In scope of OHSAS 18001 Occupational Health and Safety Management System, works will be conducted in compliance with **Work Instructions**.

Starting from planning stages for drilling and boring works, attention will be paid to installation of drillers and drilling works. To provide safe working conditions, following precautions will be taken into consideration;

- Certified, experienced and trained operators will make drilling and boring.
- Operator of drilling and boring machine and helpers will be provided with PPE's (hardhat, earplugs, glasses and dust mask).
- Drill route will always be controlled in case of aerial and subsoil obstacles (electrical lines, underground pipes and cables, etc.).
- Clothes, hands, feet will be kept away from spinning and mobile parts of machines.
- Before and right after starting the drill or boring machine, daily controls will be made.
- Packers will be inflated with suitable oils.
- Before conducting works in mobile systems, the system will be stopped first.
- Protective parts of mobile parts will not be removed, and suitable protections will be fitted to missing places.
- Controls of manometers showing pressure will be controlled.
- Pressure higher than operation pressure will not be applied and durable hoses will be used.
- The hose or the pipe that is under pressure will not be hit. Actions will be made after cutting of the pressure.
- Before making any works in aerial line, exit valve will be turned down and the air and injection will be emptied.
- In case the spill of drilling material to eye or to skin, protective equipment should be used.



### 4.3.1.12 Excavation-Filling Works

In scope of OHSAS 18001 Occupational Health and Safety Management System, works will be conducted in compliance with **Work Instructions**.

Before starting to works in excavation areas, at first the locations of current electricity, water and other infrastructures will be determined. If necessary, permits from relevant institutions will be taken. In case the excavation is deeper than 1,5 meters, warning signs and barriers/warning stripes will be placed at 1 meter of excavation area.

The periodic controls of construction equipment and trucks to be used in carriage of excavation, filling and materials will be made and they will have original safety system mounted by the producer. The equipment will be used in accordance to its intended use. All operators must have suitable operation certificate.

Necessary precautions will be taken for exposure to dust and noise during loading and unloading of materials, exposure to mobile equipment, and for safety of trucks (falling, overloading, crushing, etc.).

All the equipment used in filling works must have back warning signals and overhead lights. Signalman will be present in order to safely direct the machines and trucks during filling works. Signalman will have vocal and visual (whistles, hand lamp, etc.) warning equipment.



## 4.3.2 Risk Assessment (PR-4, PS-4)

In scope of OHSAS 18001 Occupational Health and Safety Management System, works will be conducted in compliance with **Occupational Health and Safety Procedure**, and will be made by Joint Health and Safety Units or HS Specialist of the company.

Starting from the design and construction phase of all workplaces, risk assessment is realized by determination of hazards, determination of risks and analyzing, comparing the risk control measures, updating the works, documentation and renewal, if necessary. **(Regulation of Occupational Health and Safety Risk Assessment, Article 7.1)**

Prepared risk assessments will be kept ready in workplaces to be shown in audits.

**In following cases the risk assessment will be completely or partially renewed:**

- Moving of workplace or changes in buildings,
- Changes in technology, equipment or materials used in workplace,
- Changes in production method,
- In case of occupational accidents, occupational diseases or near miss accidents,
- In case of amendment in legislation regarding limit values of workplace,
- Deemed necessary as result of workplace measurements and health monitoring results,
- Occurrence of new hazard that is caused by external sources and that can affect workplace.

### Risk Assessment Team

Environment Council carries out risk assessment. These team members are made from the people listed below:

- Employer or employer's represent
- Workplace doctors and occupational safety specialists who conducts health and security services in the workplace
- Represents of employees in the workplace
- Support members in the workplace
- Employees who determined as represent of all departments and also has the information about workplaces' business, risks, current and possible danger resources (Occupational Health and Safety Assessment Regulation, Head 7)

In case of need for extra support service will be taken from people and organizations from outside the workplace.

### Documentation

Risk assessment will be documented includes minimum aspects as given below:

- Workplace's title, address and employers name
- Names and titles of the people who responsible for risk assessment including the information about occupational safety specialist and workplace doctors documents given by the Ministry
- Actualization date and date of validity
- Name of the departments if risk assessment is done separately for each department
- Determined danger resources and dangers

f) Determined risks

g) Method or methods used in risk assessment

h) Analyze results including determined risks according to priority and importance

i) Corrective and preventive control measures, actualizations dates and the risk level is detected afterwards

- The documents of risk assessment will be saved in workplace after pages are numbered, had initials in every page and signed the last page by all people in the process.
- Risk assessment documents can be prepared electronically and archived in similar electronic environments.

### Renewing Risk Assessment

Former risk assessments will be renewed according to classification of danger mentioned below;

- At least two years in very dangerous workplaces
- At least four years in dangerous workplaces
- Maximum six years period in least dangerous places **(Occupational Health and Safety Assessment Regulation, Head 7.1)**



## 4.3.3 Plant Social Facilities (PR-2, PS-2)

### Drink Water / Hot Drinks

- Drink water is provided in workplaces and offices and saved in acceptable temperature.
- Hot drinks are also provided.
- Drink and tap water have to be analyzed in 6-month periods and recorded.

### Cleaning Opportunities

Suitable and adequate number of showers, WC and lavabos has to be located in workplaces and offices. These places are must be clean, open to usage and hygienic all the time. Cleanings will be recorded under the Cleaning Control Form.

### Toilets and Urinals

If there is a need, portable toilets will be provided in working site. Sufficient lighting, health and clean environment will be provided in toilets. Wastewater of the portable toilets are collected and given to the treatment plant / septic tank.

### Breaks and Rest Areas

Rest areas have to have protection from sun, rain, cold and if needed safety warmed places provided for the workers in seasonal conditions.

### Dormitories

In conformity with the regulation, enough air volume will be provided per person in the workers dormitories. The entrance of dorms contains a close shoe cupboard for work shoes and locked wardrobe for each employee. Beds have to be bedstead/ bunk bed and sufficient blankets will be provided.

Dormitories ensure the wired windows provide air condition and safe heating system.

Smoking, lighting fire, cooking and eating are forbidden in the dormitories.

### Cafeteria

Desk and chairs in the dining hall have to be fit the number of employees.

Calorie calculated food is given to drudge in every meal and witness samples are taken from each meal and saved in fridge for 72 hours with closed cups.



Periodic health examinations are done for dining hall personnel. Workers of dining hall have to use clean apron, bonnet and galosh. Special cupboards are provided for the personnel for their casual clothes. Dining hall personnel has entrance to the cooking division.

Cafeteria will provide adequate lighting and ventilation; windows will be double opening and fly wired. Cold air warehouses have calibrated heat measurements. First entered supplier has to consume first. Expiration dates are followed. Cold air storage's doors are controlled with isolation thermal cameras. Lighting luminaries will be waterproof.

All materials in the cafeteria cold air storage have to be closed and labeled with the information about entrance in warehouse. Periodic disinfestations and precaution is taken for insects in the dry material storage.

Daily cleaning and weekly disinfection will be done in cafeteria and recorded in accordance with Cleaning Control Forms.

### 4.3.4 Labor Health (PR-4, PS-4)

Workplace doctors and other health personnel conduct workers health in the business and constructions. This personnel's working period will be determined in accordance with related regulations, classification of danger and number of the employees of the company.

- Studies about workers health are defined in the OHSAS system, which contains P12-L01 Legal Obligation List.

- 1) Starting job
- 2) Changing job
- 3) Demands to come back for job after occupational accident, occupational diseases or after health problems
- 4) In determined regular periods during the work, worker and quality of the job and classification of danger (**6331 numbered Occupational Health and Safety Law**)

Every new beginner has to take health report before start working.

In accordance with 6331 numbered law, health reports have to be taken from workplace doctor. Reports can be taken from public utilities or family doctors for companies which has at least 10 employees and least dangerous. Results of required examinations for the employees and statement for job, periodic health examination results have to be saved by workplace doctor.

Workplace doctors follow and save their medical, patient and records with policlinic record book.

In the direction of risk assessment which was done with international standards and considering employees personality triad, workplaces' class of danger and quality of work;

- **once in a 5 year period** in least dangerous workplaces,
- **once in a 3 year period** in dangerous workplaces,
- **once a year** in most dangerous workplaces,
- The periodic examination will be repeated **once in 6 month period** at latest for young and pregnant workers who includes special policy requirement. (**6331 numbered Occupational Health and Safety Law**).

However, these periods will be shortened if workplace doctor find necessary. Again if workplace doctor find necessary, additional examination can be demanded from personnel. For instance; lung x-ray demanded from employers who works in dusty places, hygiene examination would be done to cafeteria personnel, audiometric examination will be done to employees who will be work in noisy environment etc.

### 4.3.5 Alcohol and Drug Usage

Using, keeping and distributing alcohol, intoxicated materials, drugs, illegal or unauthorized medication, drug staff are forbidden in workplace. Employees alcohol situations will be controlled in regular periods, with the alcoholmeter in the workplace, consent on the condition that in the contracting stage.

Employees cannot be work while they are under the prepossession of a drug/alcohol, which can affect their working specialties, reflects, coordination or bad effect to safety of other workers during the job.

Medications will be allowed under the condition of legal prescription, which will be written by a licensed doctor, and original of prescription will be kept in the box of the drug. Legal medications will not be affect person's capability of work, reflects, coordination and response.

### 4.3.6 Personnel Protective Equipment (PR-4, PS-4)

Personal protective equipment, will be used for improve safety and health conditions in unpreventable situations which risks, collective protection provided by precautions or work organizations and working methods cannot be limited or prevent work accidents or occupational illnesses, protecting workers health and safety risks.

**All personal protective equipment;**

- 1) Suitable for preventing the related risk before it occur
- 2) Suitable for the conditions of workplace
- 3) Suitable of health conditions and ergonomic requirements
- 4) Fits the user when required adjustments are done
- 5) All materials including in the Personal Protective Regulation must have CE sign and Turkish User Manuel.
- 6) Personal Protective equipment will be controlled visually before using.

Employees without Personal Protective Equipment (PPE) will not allow to work on flied. According to the results of the risk assessments if PPE is expected to use such as headphones, dust mask, etc. will be given the related personnel.

- Applied training about usage of personal training equipment will be given and this training recorded and saved in personal files.
- PPE's will be given to personnel with debit ticket.

Studies are conducted under the essentials of **PPE Usage Insturctions** contended by OHSAS 18001 Occupational Health and Safety Administrative System.

### 4.3.7 Environment and Personal Exposure Measurements

Environment and personal exposure measurements will be done in accordance with **Legal Liability List**.

To provide a safe working environment, personal aspects or physical, chemical and biological effects oriented to working environment measurement, test, analysis and evaluations will be done by compliance certificated or prequalified laboratories. Measurement results must be shown when they are demanded during evaluations in company or construction areas. Saving the results of hygiene measures will be saved based on the periods determined by the related regulations.

Work hygiene measures and tests depend on the risk assessments:

- When difference occurred in workplace environment or personal aspects
- Hygiene measures, tests and analysis will be repeated if workplace doctor or occupational health specialist seem necessary.



### 4.3.8 Warning Signs (PR-4, PS-4)

Safety and security signs will be used adequately for the results of risk assessments when working methods; work organizations and collective protections cannot fill or increase the risks.

- Definitions of the signs and required behaviors are determined by the OHSAS 18001 Warning Signs scope is defined in the instructions.
- Training will be given to employees about safety and security sign in the company
- Warning signs will be located into near the special dangerous places or dangerous things, the entrance of the dangerous places, which are considered by obstacles, well located and suitable height, easy to reach and visible. Fluorescent colors, artificial light or reflector material will be used in poor natural lighted places.
- Signs, will be removed when implied situation disappeared.

Information given in Figure 15 will be used while preparing the warning signs.

Color	Meaning or Aim	Direction and Information
<b>Red</b>	Forbidden	Dangerous move or behavior
	Danger Sign	Stop, shut down, stop, turn, emergency stop device, evacuated
	Fire-fighting equipment	Showing the location of equipment and what it is
<b>Yellow</b>	Precautionary signal	be careful, take precautions, check
<b>Blue (1)</b>	Necessity mark	Specific behavior or action Use personal protective equipment
<b>Green</b>	Emergency escape, first aid sign	Doors, outlets and routes, equipment, facilities
	No danger	return to normal
<b>(1) Blue:</b> <b>(2) Florissant orange:</b>	<ul style="list-style-type: none"> <li>• Is used only in a circular shape is considered as a safety color.</li> <li>• Police used instead of yellow signs outside.</li> <li>• This natural color is most striking, especially in poor visibility conditions.</li> </ul>	

**Figure 15: Warning Signs (Regulation on Health and Safety Signs)**

Examples of signs showing the reservoir and downstream hazards and stating hazardous actions are given below:



## 4.3.9 Community Health, Safety and Security

in the prepared EIA / PIF reports, effects of projects' community health, safety and security will be examined in detail without limited by the situations mentioned below;

- Effects of noise and actions to be taken,
- Dust emissions and actions to be taken,
- Vehicle emissions and actions to be taken,
- Occurred electric and magnetic field and severity, effects and action to be taken, (for WPP and ETL),
- In construction and company process, providing drink water and ways for disposal of waste water,
- For HEPP's: usage of the water resource to be used, possible differences occurred as a result of water retention, actions to be taken to prevent the results of this differences such as landslide, erosion,
- For SPP's heavy metals and toxic chemicals carried by geothermal fluid (arsenic, lead, zinc, significant amounts of carbonate with boron, silica, sulphate, chloride, etc.) with carbon dioxide, to be taken towards gases such as hydrogen sulphide measures,
- For WPP's: for the prevention of electrical shock to be made to the plant grounding and lightning protection procedures relating to the establishment,
- For SPP: glare / reflections and glare effects and precautions,

Effected by the project with the potential of settlements and the local population, for the health and safety risks associated with the project and identified adverse effects will be evaluated. These risks and impact in proportion to the appropriate protection, prevention and mitigation measures will be developed. On mitigation measures and plans will be made cooperation with local authorities and other stakeholders. These measures, local laws and regulations shall be consistent with the reduction hierarchy approach and with international practices.

The project's public health and measures to prevent or reduce the impact on the security may be the responsibility of local governments. In such cases, the necessary notifications to be made to the relevant authorities and will cooperate with the authorities find solutions. Notifications and cooperation to be made regarding public safety are given in App 12 Community Safety Department.

Infrastructure, building and third parties for hardware design and security and to take into account the security risks that occur for affected parties and international best practices will be taken as samples.

The construction and during operation, third party fire and life safety audits for existing buildings and new buildings used for common objectives will be achieved.

Both construction and major renovations of buildings used for common purposes, which will be designed according to the concept of universal emergency.

The dams as located in highly risked locations of the structural elements or components, which are working or failed one or more qualified specialist with experience will be studied when workers and local population's security will be threatened.



## 4.3.10 Subcontractor Management (PR-2, PS-2)

Contractors are required to provide safety for the working conditions of its employees. Therefore; they ensure adequate controls and have undergone training for the situations for the employees working in or out the field. (See App 20).

Contractor employees will be informed about foreseeable hazards and necessary actions exactly. Records of these applications will be controlled by AKFEN.

### Responsibilities of Contractor Employees

Contractor employees will show the necessary attention to the health and safety for themselves and the others. Therefore, employees and subcontractors will work in safe and competent manner the company and will take care of the people's health and their work and they may affect safety.

Subcontractors involved in the business have the minimum responsibilities described below:

- Contractor and/or AKFEN will arrange to attend OHS training,
- While working in the company to have a fully-equipped safety standards,
- The current OHS legislation, to assign occupational health and safety professionals in the specified time and number,
- The work done in the company to take all necessary measures to affect other employees and 3rd parties,
- During studies, take full responsibility for the health and safety of workers,
- Own expenses; improve regulations for accident prevention and insurance tools,
- Excavation, driving, trained for electricity and hot work, qualified employees to hire,
- Before starting work with and for the duration of the work interval specified in the legislation, to make health checks of employees,
- To organize work and risk analysis for the period specified in the legislation update,
- To inform the employees about their work visible / invisible dangers,
- Establish OHS council, in the case of operating under the specified number in the regulation, to determine a candidate from employees,
- Without exception, always ready to PPE, the PPE's free of charge while providing their employees and ensure the usage by employees,
- Provide the fire extinguisher, first aid and necessary equipment,
- Lifting machines, wire slings, chains, shackles of checking that they are in good condition and to competent and qualified people required to make periodic checks,
- If the studies require work permits, get a work permit,
- Work in accordance with the lock out tag out system,
- To ensure the implementation of all Turkish laws and regulations.

**Subcontractor Management Forms** will be used administration of subcontractors.



## 4.3.11 Award Penalty System

AKFEN has an Award Penalty System to improve the motivation of employees and to ensure compliance with OHS rules (See App 9).

In this regard, OHSAS 18001 Occupational Health and Safety Management System in accordance with the principles of the work will be carried out under the **Operating Instructions**.

### Award

As a result of unannounced inspections, occupational health and safety rules in accordance with the employee and management staff are identified to them by a "Certificate" or be awarded a prize. Award winners will be announced to all employees on notice boards.

### Penalty

The penalties for all employees (including subcontractors) shall apply. A list of penalties will be prepared in addition to the contracts. If needed, fines and amounts will be updated once a year.



## 4.3.12 Work Permission (PR-4, PS-4)

Work Permission system will be applied high hazard potential for business activities. The work permission system in business is defined as an application which works to reduce the risk, will be applied in the work permission system works (See App 13).

Work permission system is an important application for the creation of a safe working environment. Business permission system to identify hazards and risks of the activities of a staff expert, with measures to be taken will be provided to take account of the situation and limit the field to do the job. These are mainly;

- Identify exactly the work to be done and to identify hazards that may occur,
- Identification of measures to be taken,
- Identify who will do business,
- The field activities will be held and the determination of the equipment to be used,
- The definition of work time.

This document is signed by responsible HS personnel and permission will be taken. The document is also signed by team leader that means all the work-related limitations of the team and the dangers and precautions to be taken.

### Description of Work Permission

#### a) In business, generally the following are subject to work permission;

- Working at heights,
- Electrical work,
- Hot jobs,
- Entrance to confined space,
- The water in or near the work,
- Excavation and fill work,

#### b) Supporting and Auxiliary Documentn

- Machinery and Equipment Inventory List
- Maintenance, calibration certificates of the equipment will be used, if any
- OHSAS 18001 Occupational Health and Work Permit Instructions under the Security Management System

#### c) Job Category

## Conditions Requiring Work Permission

Work permission system is one of the main ways to ensure a safe working environment. This system will be used for the construction work to be found significant hazards and precautions. When determining the activities that require work permission, it is necessary to get permission to do this work.

## Authority to Give Permission

Person who is signing the documents confirming the work permission and providing the work is started. This document was prepared as ratification and all attachments must be checked to be sufficient.

## Authority To Conduct Job

This person is the personnel who are allowed to do business. Team and him/herself mentioned in this work permits, limits, dangers and measures to be taken and must know the job will be done with the form described all conditions.

## Permission to Work at Height

All work in level difference in the enterprise has been identified as working high. Creating work permissions for the work to be done in the high, employees aim enabling people to work in a safe environment. High catwalk in accordance with national legislation in studies, scaffolds, guardrails, ladders, safety belts, ropes, etc. systems and equipment will be checked. High standards of staff employees are required to use a seat belt. The seat belt will be used in the parachute type and staff to keep hanging drops will be connected to a suitable place. Before using the seat belt will be controlled by staff. Working at height will be checked with field control form will be added to the work done and permission forms.

## Electrical Work

Electrical equipment maintenance must be done in time, lock out tag out system will be used and Work Permit system will be operated. Work permits for electrical work will be started by an electrical engineer or technician, according to business size. 220 volts and above will be controlled by applying electric lock out tag out system in the works and will be added to the record business permit.

## Hot Works

In activities of construction that forms flames or sparks or in welding works, work permission is required.

The equipment used in this category;

Welding and burning equipment, electrical appliances, flames issuing tools, soldering tools, grinding-blasting machines, pneumatic drilling machines, used in flammable environments are powered mobile equipment and vehicles with objectionable that electric or battery-powered tools. An hour after finishing work permitted or work area will be observed again. Hot jobs will be checked and added to the registration area to do work permit.

## Confined Space/Entrance

Confined spaces (corridors, manholes, wells, etc.) getting Work Permission is required for work to be done. Experienced and fully equipped staff will come to analyze the air in the closed area.

The official confirming the permission to work in an enclosed area to check that the air analysis done in these closed areas is essential. Control is not permitted if done. Off the field to be checked and added to the record business permit.

## Working In Or Near Water

Work Permission is required for work to be carried out in or near water. Which work done in water, and how long and who will be stated in the work permit will be made. In or near the work area will be checked and water is added to permit business records.

## Permission For Filling/Excavations

The excavated soil or coated the ground, the wells drilled to erect poles, etc. excavation and demolition works fall into this class and requires a work permit.

Excavation work in getting permission first reason is that the area to be excavated cables, pipes, etc. It is the protection of infrastructure. Permit the person approving the excavation / earthmoving buried service lines of inquiry in all areas to be made; they must allow to control and then give permission.



## 4.3.13 Health and Safety Committee

- Occupational health and safety committee will be created fifty or more employees and is located in continuous operation for more than six months
- The committee will meet at least once a month. However, the committee, taking into account the risk level of the workplace, this time for two months in dangerous workplaces may decide to set at three months while the less dangerous workplaces.
- Agenda of the meeting place, date and time will be communicated to the committee members at least forty-eight hours before the meeting (**Regulation on Occupational Health and Safety Committees**).

### The committee consists of the following people:

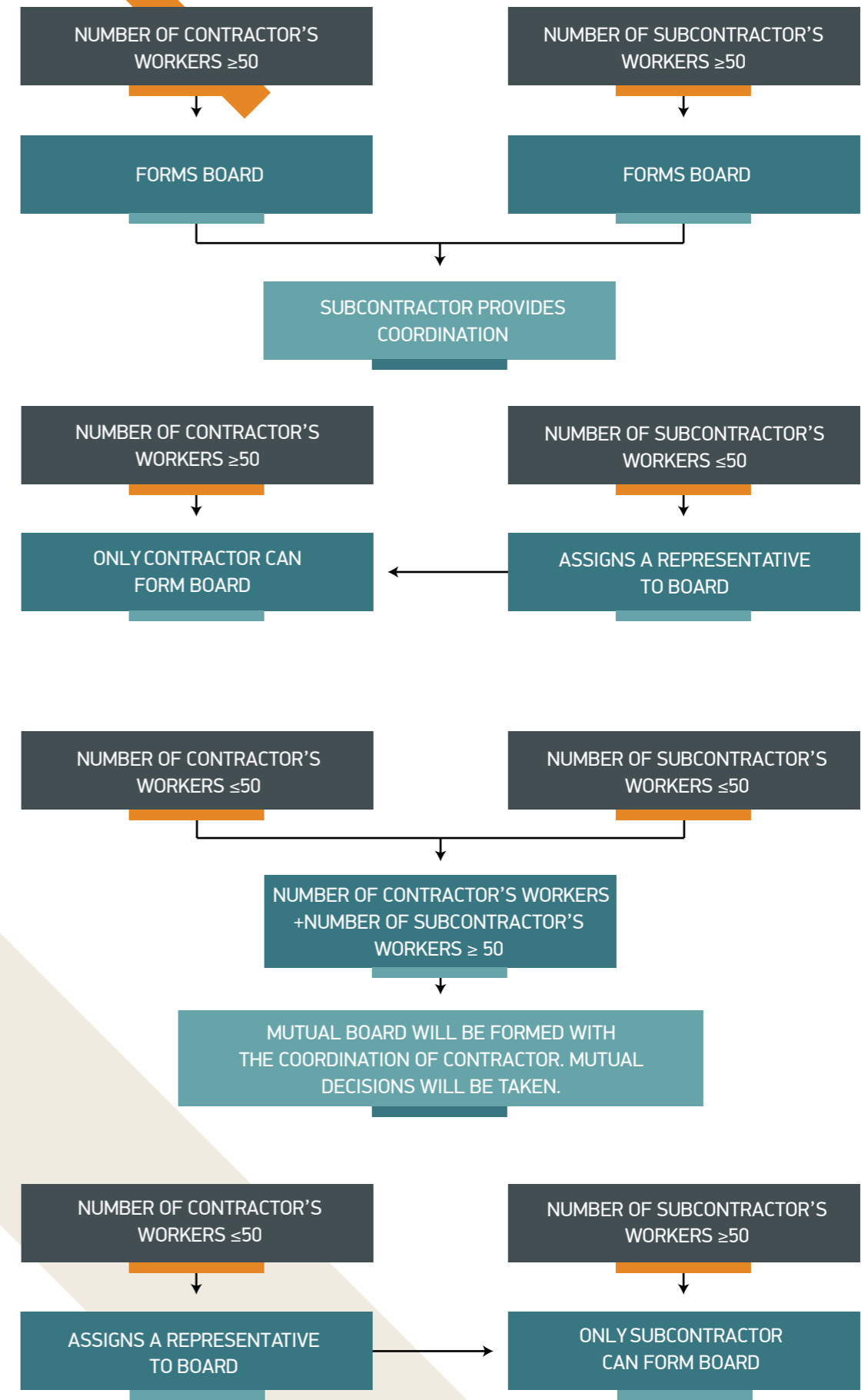
- The employer or his representative,
  - Occupational safety expert,
  - Commercial physician,
  - Human resources, personnel, to carry out social work or a person administrative and financial officer,
  - Civil defense expert, if any,
  - If any, foreman or master,
  - Employee representative, if there is more than one representative per employee representatives in the workplace.
- The president of the employer or his representative is the secretary of the committee safety expert.
  - The establishment of the secretariat in full-time employment workplaces without necessity of occupational safety specialists; human resources, personnel, to carry out social work or administrative and financial affairs will be conducted by an official person.
  - The alternate members of the board will be given to training in occupational health and safety issues by the employer. The education of the Committee members and their alternates shall include at least the following issues;

- The duties and powers of the Board,
- National regulations and standards of occupational health and safety issues,
- Frequently encountered causes of occupational accidents and dangerous occurrences,
- Business basic principles of hygiene,
- Communication techniques,
- Emergency measures
- Occupational diseases,
- The specific risks of the workplaces,
- Risk assessment

### (Regulation on Occupational Health and Safety Committees)



## Forming Boards According To Number Of Workers



## 4.3.14 Worker Representative

In companies, by paying attention to risks at several parts of workplace and taking the number of employees into consideration, in case the representative is not chosen with election, a representative will be appointed.

### Qualifications of Representative:

The representative must have following qualifications:

- a) Full-time employee of the workplace,
- b) Must have at least 3 years of work experience,
- c) Must be at least middle school graduate (**Communiqué on The Qualifications and Selection of Worker Representative of Occupational Health and Safety**).

### Determination of the number of Representative

The worker representative will be appointed in accordance with the relevant legislation for number of employees.

### Selection and Appointment Conditions of Representative

The selection will be made with the participation of at least half of the employees plus one. The voting will be confidential. Candidate or candidates having the most votes will be appointed as representative. For workplaces working in shifts the selections will be organized accordingly so that all employees can vote.

### Authority and obligations of Representative

- Representative is authorized to participate in works for occupational health and safety, to monitor works, to request taking precautions for eliminating the hazard source or mitigating risk caused by hazard, to make offers and to represent the workers in similar subjects.
- The rights of the representative cannot be limited as they execute works.
- Representative is obligated to keep the information about the issues learned by employer or trade secrets and the information about employees confidential.
- Representatives will be specially trained about the occupational health and safety in accordance with the relevant legislations; the trainings will be recorded and will be kept in personnel files. (**Communiqué on The Qualifications and Selection of Worker Representative of Occupational Health and Safety**).



### 4.3.15 Work Stoppage (PR-2, PS-2)

If a life-threatening subject is determined in the buildings and auxiliary buildings of workplace, in working methods and manners or in work equipment, by taking the feature of the hazard and the risk that can have impact on areas caused by hazard and the workers into consideration, work will be stopped partially or completely until the hazard is eliminated. The board that is authorized to make the partial or complete stoppage is formed of three inspectors. Ministry Work Committee of Inspection determines the inspector that will take the chair in board (**Regulation on Work Stoppage in Workplaces**).

### 4.3.16 Right to Avoid Working (PR-2, PS-2)

Workers that are faced with serious and near hazard can apply to board, or to a Contractor in workplaces where there is no board, and can demand the determination of situation and to take necessary precautions. In this case board will gathered immediately, and the Contractor will make immediate decisions and will keep minutes about this situation. The decision will be given to worker and the representative in writing.

- Until the board makes a decision toward the demand of worker, the worker has right to avoid work until all the precautions are taken. The fee of the worker in this period and other rights obtained by the law and work contract are reserved.
- In case the serious and near hazard is not preventable, workers can leave the workplace or the hazardous area, without being subject to first procedure, and will go to the safe area that was previously determined. The rights of the workers cannot be limited for this action.
- In case necessary actions aren't taken despite of the workers demand, the work contract of the worker can be abolished in accordance with the provisions of law that they are subject to (**Occupational Health and Safety Law numbered 6331**).



### 4.3.17 Maintenance and Repair Works

In workplaces, specialist and authorized person will control the safety of work equipment and a document will be prepared stating that the equipment is working properly;

- After installation of equipment,
- Before using the equipment first time,
- Every time the equipment changes place,
- In periods stated in relevant legislation and standards.

Control results will be recorded and will be kept for showing the authorities when demanded.

For this purpose, **Machine and Equipment Inventory List** will be prepared for each machine and equipment used in workplace. Features of machine and equipment such as brand name, model, plate, etc. and maintenance and/or testing periods will be stated in this list.

In workplaces Maintenance **and Repair Instruction** and a **Machine and Equipment Registry Card** will be kept that states the maintenance, test and repair methods for each machine and equipment. The maintenances and repairs will be recorded to the card.

Likewise, **Monthly Maintenance Form for Vehicles** will be prepared for the vehicles in the workplace. **Control Form** will be filled in for lifting equipment, if any, that displays controls that should be done periodically.

The machine and equipment inventories and registry cards will be kept in workplaces in case of possible audits.



## 4.3.18 Machine and Equipment Safety

All equipment in workplace will have control equipment that will stop the equipment safely and completely in case of emergencies. According to the type of hazard and in suitable places, equipment will have emergency stop button. Except for the cases when the control mechanisms should be kept away from the hazardous parts and for the cases where these mechanisms doesn't cause additional risks, in places where the mobile parts cause risk, protectors and equipment will be provided in order to prevent the entrance to hazardous parts and to stop mobilization of equipment without approaching.

### Protective equipment:

- Will be in solid shape,
- Will not cause additional dangers,
- Can be easily removed and deactivated,
- Will be kept away from hazardous areas,
- Will not prevent seeing the mobile parts of machine,
- Will not prevent changing parts or making repairs, will only prevent access while working and if possible, will be impossible to remove.

### Work equipment:

- Warning equipment will be easily recognizable and understandable.
- Equipment will be used according to their design purpose.
- In maintenance and repair periods, workers will have safe access to these areas and will have safe working environment.
- All equipment will be installed in a matter to prevent direct or indirect electrical shocks.
- In case used in workplaces, all construction equipment (dozer, loader, mobile crane, truck, etc.) will have back signals. Authorized personnel will use construction equipment.

- Drivers are obligated to park the vehicles in parking areas and the vehicles should face to exit directions.
- All vehicles will be in compliance with usage aims, traffic laws and regulations.
- Reflectors, first aid kits, fire extinguishers, etc. will be present in all vehicles.
- The traffic in workplaces and construction site will be in accordance with determined speed and route, the right of ways will be marked with big signs and disturbance will be prevented.
- All passengers must be seated.
- Periodic controls and maintenances of vehicles will be made.
- Before moving, the driver will ensure that all passengers are seated and they have their seatbelts.
- In vehicles there will be materials to suck possible oil/fuel leaks.
- Speed limit will be determined (to minimize dust and to protect pedestrians), speed limit signs will be placed and all vehicles will be obligated to comply with limits. IF there are any pick-up trucks and trucks used, tachygraphy or GPS will be used to monitor their speed limits.
- Barriers will be placed to dangerous twists and turns, and road safety will be provided.

## 4.3.19 Traffic and Road Safety

The route chosen for access to workplace will be safe and will not have health risks. In order to provide safe access, following measurements will be taken;

- All drivers will have driving license according to type of vehicles they use and they will have professional competency certificate.
- Driver and passengers are obligated to use seatbelts.
- If a load will be carried, it will be tied to vehicle accordingly and sharp endings will be prevented.
- If the load exceeds the vehicle, this will be in acceptable limits and will be seen clearly.
- While carrying a load, after some time the vehicle will be stopped and load will be controlled again.



## 4.3.20 Occupational Accidents and Occupational Diseases (PR-4, PS-4)

**Occupational accidents:** Are incidents that occur in workplaces or occurs as result of execution of work and causes death or causes disabilities in physical or spiritual integrity.

**Occupational diseases:** Are diseases that occur as result of occupational exposures (**Social Insurances and General Health Insurance Law numbered 5510**).

**Near miss:** Are incidents that don't cause any harm or loss, injuries, diseases, death, financial loss or damage to environment. After near miss incident Hazard/Near-miss Notification Card will be prepared and recorded.

### Which Cases Are Defined As Occupational Accidents?

- In the definition of occupational accident, whether the worker was working at the moment or not, or was during their shift or not, the only condition is the presence of worker in workplace.
- Accidents that occurs when the employee is not present in the workplace, but is in charge of other duty that is assigned by employer,
- Accidents that occur during breast-feeding permission, whether the employee is subject to labor legislation or not, in periods stated in legislation,
- Accidents that occur during the transportation of the insured, with a vehicle provided by the employer (**Social Insurances and General Health Insurance Law numbered 5510**).

### Notification Periods and Notification Methods of Occupational Health and Occupational Diseases:

- The authorized police force in the accident area will be informed immediately.
- Online notification to SSI will be made in at least 3 days after the accident.
- The health care providers or workplace doctor will notify occupational disease to Employer and SSI will be informed about the disease in at least 3 days after acknowledgement.
- Workplace doctor or health care providers will transfer the occupational disease cases to health care providers authorized by Social Security Institution.
- Health care providers will inform SSI about the occupational accidents and authorized health care providers will inform SSI about the occupational disease in at least 10 days.
- For the notifications made with post office or with mail, transition day to Institutions records will be taken as a basis, and for the notifications made with registered letter with advice of receipt or express mail the date of sending will be taken as a basis.
- For the period given for notifications, the days which are included in national holidays, will not be taken into consideration in accordance with three-day calculation.
- In case the notification is not made in the given periods, the Institution will collect the pension against incapacity to work to from employer until the notification is made.
- If the insured had an accident in locations that are beyond the control of employer, and in cases where it is not possible to obtain information, the notification period is 3 days after obtaining necessary information.

### In operation buildings;

- Records of all occupational accidents and disease will be kept and after making necessary revisions, reports will be kept. During these works, Occupational Accident Report and Accident File Control Form will be used.
- Operations are obligated to prepare reports about the incidents that has the potential to cause harm in workers, workplaces or equipment and that causes damages to workers and workplaces, even though the incidents doesn't cause injuries or deaths. The accidents occurred would be recorded to Accident List Form.
- Before starting to work, additional trainings will be given to the worker that had occupational accident or disease about the reasons of the subject accident or disease, protection ways and safe working methods.
- For employees that were away from working for six months for any reason, will be trained again before starting to work.
- After removal from office due to occupational accident, disease or health problems, if the employee demands, Workplace Doctor will give return-to-work report.

Operations will execute a detailed investigation after each occupational accident and near miss incident and will determine the causes and the precautions to be taken so that the accident will not happen again. In the Actions After Accidents Instructions, the methods are explained.

HS responsible will execute these investigations. As result of the investigation accident root cause analysis report will be prepared and the precautions to be taken to prevent accident from reoccurring and the expiration date of precautions will be stated in the mentioned report.

### Accident /Incident Types and Reporting

In operations/plants monthly accident statistics will be calculated and recorded.

### Workforce Loss (in days)

Workforce loss is accepted as number of days that the worker is not capable of working. During the calculation of workforce loss, the number of unemployed days after accident is taken into consideration. If any, the vacation days (Sundays) will also be included to calculations.

### Accident Frequency Rate (AFR)

This rate shows how many accidents took place in 1,000,000 work hours in one calendar year. The math formula is as follows:

$$AFR = \frac{\text{Number of accidents}}{\text{Total man-hour work}} \times 1.000.000$$

### Accident Significance Rate (ASR)

This rate shows how many days are lost due to occupational accident in 1,000,000 work hours in one calendar year. The math formula is as follows:

$$ASR = \frac{\text{Total workforce loss (day)}}{\text{Total man-hour work}} \times 1.000.000$$

Assessments made for employee satisfaction with employee **SATISFACTION SURVEY Form** will be recorded.



## 4.3.21 Safety Watchman

In order to minimize the risk and to control the current risks, one of the most efficient ways to be used is the safety watchman system. In operations, safety watchman will be used for fire, confined space works and for traffic.

### Safety Watchman

- Will be aware for fire, confined space activities and traffic dangers during the execution of works by other workers.
- Will provide relevant conditions and necessities for work permits.
- Will control that the flammable materials are kept away from heat sources.
- In case of fire, will extinguish the fire or will ring the fire alarm.
- In case of emergency, will inform the people determined in the contact list.
- Will stop works if deemed dangerous.
- Will ensure that the workers in workplace know the locations of fire extinguishers and traffic rules.
- Will maintain visual or vocal communication with other workers as possible.
- Will control the workplace in terms of fire, confined space activities and traffic risks before starting of each shift.
- Will ensure that fire extinguishers, hydrants and fire hoses are always ready to use.
- Will not leave the work area during the hot works, confined space activities and risky traffic conditions; if watchman has to leave, the work will be stopped until he returns.
- After completion of works, will not leave the work area until he is sure that there aren't any risks at the area.

## 4.3.21 Occupational Health and Safety Trainings (PR-4, PS-4)

The Occupational Safety Trainings to be given to employees are defined in **Occupational Safety Awareness Training Instructions**. Annual training plan for all workplaces will be prepared according to **HS Training Plans**. Internal trainings are defined in App 14, Internal Training Participation.

Delivered trainings will be controlled with **HS Trainings Monitoring Control List**.

The duration of trainings will be applied according to training plan prepared in accordance with the national legislations.

## 4.3.22.1 Trainings of Plant Personnel

### Training Subjects:

All personnel in the operation will receive training about occupational health and safety that includes the topics given below (See Figure 16). Authorized HS professionals in workplaces can give orientation trainings. Trainings will be monitored with **HS Trainings Monitoring Control List**.

TRAINING SUBJECTS
<p><b>1. General subjects</b></p> <ul style="list-style-type: none"> <li>a) Information about labor legislation,</li> <li>b) Legal rights and responsibilities of employees,</li> <li>c) Workplace cleaning and order,</li> <li>ç) Legal consequences arising from occupational accidents and occupational diseases.</li> </ul>
<p><b>2. Health subjects</b></p> <ul style="list-style-type: none"> <li>a) Causes of occupational diseases,</li> <li>b) Application of principles and techniques to avoid occupational diseases,</li> <li>c) Biological and psycho-social risk factors,</li> <li>ç) First aid</li> </ul>
<p><b>3. Technical subjects</b></p> <ul style="list-style-type: none"> <li>a) Chemical, physical and ergonomic risk factors,</li> <li>b) Manuel lifting and carrying,</li> <li>c) Protection from flaming, explosion and fire,</li> <li>ç) Safe usage of work equipment,</li> <li>d) Working with screened equipment,</li> <li>e) Electricity, hazards, risks and precautions,</li> <li>f) Reasons of occupational accidents and protection principles,</li> <li>g) Health and safety signs,</li> <li>ğ) Usage of personnel protective equipment,</li> <li>h) General rules of occupational health and safety and safety culture,</li> <li>i) Communication, evacuation and rescue in case of Emergencies</li> </ul>

Figure 16: Training Subjects (Regulation on Trainings of Employees about Occupational Health and Safety)

#### Who can give trainings?

- HS specialists employed in workplace and workplace doctors,
- Institutions formed by employee, employer and public servants or education foundations founded by these people and joint training centers, universities, training departments of public institutions, professional organizations having the characteristics of public institutions and education institutions authorized by Ministry and joint health and safety units (**Regulation on Trainings of Employees about Occupational Health and Safety**).

#### When to deliver trainings?

- Before actively starting to work, trainings will be delivered to worker about the work and risks of workplace and protection measures.
- Additional trainings will be delivered in case of change of work place or work, change of equipment, new technology applications.
- Trainings will be delivered to employer returning to work after occupational accidents or diseases, about the causes of accident and diseases, protection measures and safe working methods.
- Trainings will be delivered to employees that were away from working for six months for any reason.
- Trainings will be repeated in following periods:
  - a) Minimum once a year in most dangerous workplaces.
  - b) Minimum once in every two years in dangerous workplaces,
  - c) Minimum once in every three years in dangerous workplaces,
- Trainings will be given by taking the old, disabled, pregnant and breast-feeding employees that requires special policy into consideration.
- Trainings about the duties they are authorized will be given to supporting workers, worker representatives.
- Every worker will receive trainings explaining job-specific risks.
- The cost of occupational health and safety trainings will not be reflected on employees.
- Time used for trainings will be considered as work time.
- Annual training program showing the training activities in one year will be prepared.
- Opinions of workers and representatives will be asked while preparing the training programs.
- In new recruitments or according to changing conditions, if new risks emerge additions will be made to annual training programs.
- In case of amendment in relevant legislation or occurrence of new risks arising from change of works, regardless of annual training plan, employees will receive suitable training.
- In annual training plan subject, date, duration of trainings and participants and aim and target of trainings will be stated.
- The trainings delivered to employees will be delivered in periods stated in legislations and at recruitment.

#### After trainings:

- Participants will be recorded to Internal Training Participation List (See App14).
- At the end of trainings assessment and evaluation will be made. As result of the assessment, the efficiency of training will be determined and if necessary, training program or person delivering trainings will be changed or training will be given again.
- Trainings will be documented and these documents will be kept in personnel files. The name, surname, duty, subject and duration of training, name, surname, duty, signature of the person delivering training and the date of the training will be stated.

## 4.3.22.2 Orientation Training

In orientation training the operation, work friends, managers and job will be described to the new personnel and to provide adaption to workplace.

Orientation training will include following subjects, but are not limited to;

- Safety aims and targets
  - Safety rules
  - Duties of employees
  - Traffic rules
  - First aid
  - Works with high risks
  - Fire prevention and emergency response
  - Usage of personnel protective equipment
  - Employee will be requested to bring PPE's given to them
  - Person not having PPE will not receive orientation training,
  - After training, employee will sign a training participation form stating that they understand the information given and will comply with the rules state. These records will be kept in operation throughout work.
- Trainings will be recorded with **Internal Training Card**.

### 4.3.22.3 Visitor Trainings

Visitors of the workplace will be asked to join visitor information training. Visitor training will include following subjects, but are not limited to;

- Aim and scope of project
- Target
- Site rules
- PPE usage
- First aid and other issues
- Emergency response plans
- General safety and foreseen hazards

1) Trainings will be recorded with *Visitor Information Form*.

### 4.3.22.4 Reminder Trainings

Personnel conducting wrong applications will be subject to HS reminder trainings.

1) Provisions given in *Internal Training Instructions* will be complied.



### 4.3.22.5 Toolbox Trainings

Toolbox trainings will be organized in construction stage. In certain periods, before each shift, the definition of job to be executed and health and safety hazards caused by work tool will be explained to the team executing works. These trainings will also include the risks of works, its impact on health and suitable protection measures.

- Provisions given in *Occupational Safety Awareness Training Instructions* will be complied.

### 4.3.23 Emergency Response Plans (PR-4, PS-4)

Starting from the design and construction process, emergency response plans will be prepared by determining the emergencies, taking preventive and limiting precautions, determining the authorized personnel, forming emergency response and evacuation methods, documentation and renewal of emergency response plans (See App 21). Foreseen emergencies are as follows, but not limited to;

- Fire
- Occupational accident
- Safety alarm (sabotages, etc.)
- First aid response
- Earthquake
- Flood
- Avalanche
- Opening dam gates.

It will be suitable to examine the possible emergencies in two separate titles:

#### Emergencies Occurring in Workplace:

If the accident or indecent takes place in the workplace and has impacts on employees, machines and equipment located in the borders of workplace, it is referred as emergencies occurring in workplace.

#### Emergencies Occurring outside of Workplace

If the impacts of emergency that took place in workplace exceeds the limits of workplace and impacts the residential areas and residents in adjacent areas, it is referred as emergencies occurring outside of workplace.

#### Aims of preparing emergency response plans for emergencies occurring outside of workplace:

- To prevent death and injuries,
- To prevent or minimize financial loss,
- To give fast response in order to provide normal execution of works.

Emergency plans prepared for emergencies occurring outside of workplace should be prepared in coordination with operation and local managements. Prepared plans should be updated regularly and plans should include the telephone numbers, address details, etc.

In case of emergencies occurring outside of workplace support and information may be demanded from following:

- Police
- Fire Department
- Health Institutions
- Municipalities



- State Railways
- Department of Telecommunication
- Directorate of Electrical Power Resources Survey and Development Administration
- Provincial Directorate of Environment
- Press and Media (<http://www.HS.gov.uk/>)

**Emergency Plan for emergencies occurring in workplace:**

Emergency response plans will be documented to scope following:

- Name, address of workplace, name of the Employer
- Name, surname and titles of person prepared the plan
- Preparation and validation date
- Determined emergencies
- Preventive and limiting precautions.
- Emergency response and evacuation methods
- Site location map displaying the workplace or part of workplace including following items;
  - Locations of all emergency equipment, including the fire extinguishing equipment,
  - Locations of first aid kits,
  - Exit roads, emergency assembly points and if available, evacuation plan including the warning systems,
  - Name, surname, title, responsibility area and contact information of authorized personnel and substitutes,
  - Contact information of institutions (not the workplace) about first aid, emergency medical response, rescue and firefighting.
- Page numbers of the emergency plans will be stated and personnel prepared the plan will put their initials in each page, and last page will be signed and the plan will be kept in places that are easily accessible by response teams.
- Location plan prepared in scope of emergency response plan will be hang in places that are easily visible **(Regulation on Emergencies in Workplaces)**.

**Emergency response and evacuation methods:**

- Emergency response methods will determine emergencies that requires warning search, rescue, evacuation, communication, first aid and fire fighting
- After evacuation, necessary controls will be made including counting the number of workers in case anyone is trapped inside the workplace.
- Emergency assembly areas will be determined in emergency response plans and employees will receive instructions in advance.
- If there are any old, disabled, pregnant employees, precautions for escorting them during evacuation will be taken in advance.
- While forming emergency response plans and evacuation methods, the presence of customers and visitors will be taken into consideration.
- Lighted and loud alarm system will be installed.
- If necessary, fences, rails, panels, walls, etc. will be installed.
- Warning signs will be placed in necessary areas.
- Early flood warning systems, cameras and sensors will be placed of HEPP's.
- Equipment such as chains, boats, lifeboats, etc. will be provided for HEPP's.
- Ropes and stairs will be provided for rescuing.

#### Determination of personnel to be appointed for emergencies:

- In accordance with danger class and number of employees, emergency response teams will be formed.
- For each of the following topics, special trained employees, support personnel having suitable equipment will be appointed:
- Search, rescue and evacuation,
- Firefighting,
- First aid
- There will be main and substitute personnel in teams.
- Team members will be distributed in accordance with shifts (**Regulation on Emergencies in Workplaces**).

#### Emergency drills:

- In order to regularly monitor the application steps given in emergency response plans and to ensure applicability, drills will be executed, monitored and revised and if any, corrective and preventive actions will be taken.
- Drill report including the date of the drill, deficiencies and regulations to be made according to deficiencies will be prepared.
- As result of drills, emergency response plans will be revised according to deficiencies and necessary corrections will be made.

#### Renewal of emergency response plans:

- In case of any changes that has impact on determined emergencies or in case new emergencies occur, the emergency response plan will be partially or completely changed according to size of impact.
- Prepared emergency response plans will be renewed for at least two, four and six years for very dangerous, dangerous and least dangerous workplaces. (**Regulation on Emergencies in Workplaces**).

#### Informing the employees and trainings:

- All employees will be informed about the emergency response plans and authorized personnel.
- New recruited employee will be informed about occupational health and safety plans and also about emergency response plans.
- Personnel specially authorized for emergency cases will receive special trainings for actions.

#### Documents to be used

- Drill Plan
- Drill Monitoring Control List
- Equipment for Emergency Responses and Monitoring Control List
- Emergency Contact List

## 4.3.24 Audit and Maintenance for Dam Safety (ICOLD)

Dams higher than 15 m or having height of 10 m with a crest length more than 500 m, or having 1 million m<sup>3</sup> water retention capacity or dams having 2.000 water retention capacity are assessed according to ICOLD criteria.

In this scope, to adopt ICOLD standards, “environmental council” with a team including specialists (civil, geological engineer etc.) or by getting a 3rd Party service, will make dam safety audits and will check the compliance of operation buildings according to ICOLD standards and national legislation. ICOLD implementations and national legislation requirements are given in App-23. Control form to be used when auditing ICOLD implementations are given in App 23-1



## 4.3.25 Occupational Health and Safety Monitoring and Audit

All operation staff will continuously audit HS implementations during their daily tasks. In case of non-compliance, they will record it by preparing **Corrective Action Form**.

To assess the compliance of HS implementations and the efficiency of the measures taken, systematic and independent audits will be made. Actions will be determined for improvements.

#### Daily Site Security Audit

HS officer of the plant will make Daily security audits. In this way, it is ensured that the activities reach to a standard complying legislation.

İşletme İSG denetimlerinde göz önüne alınacak başlıca konular aşağıda verilmektedir;

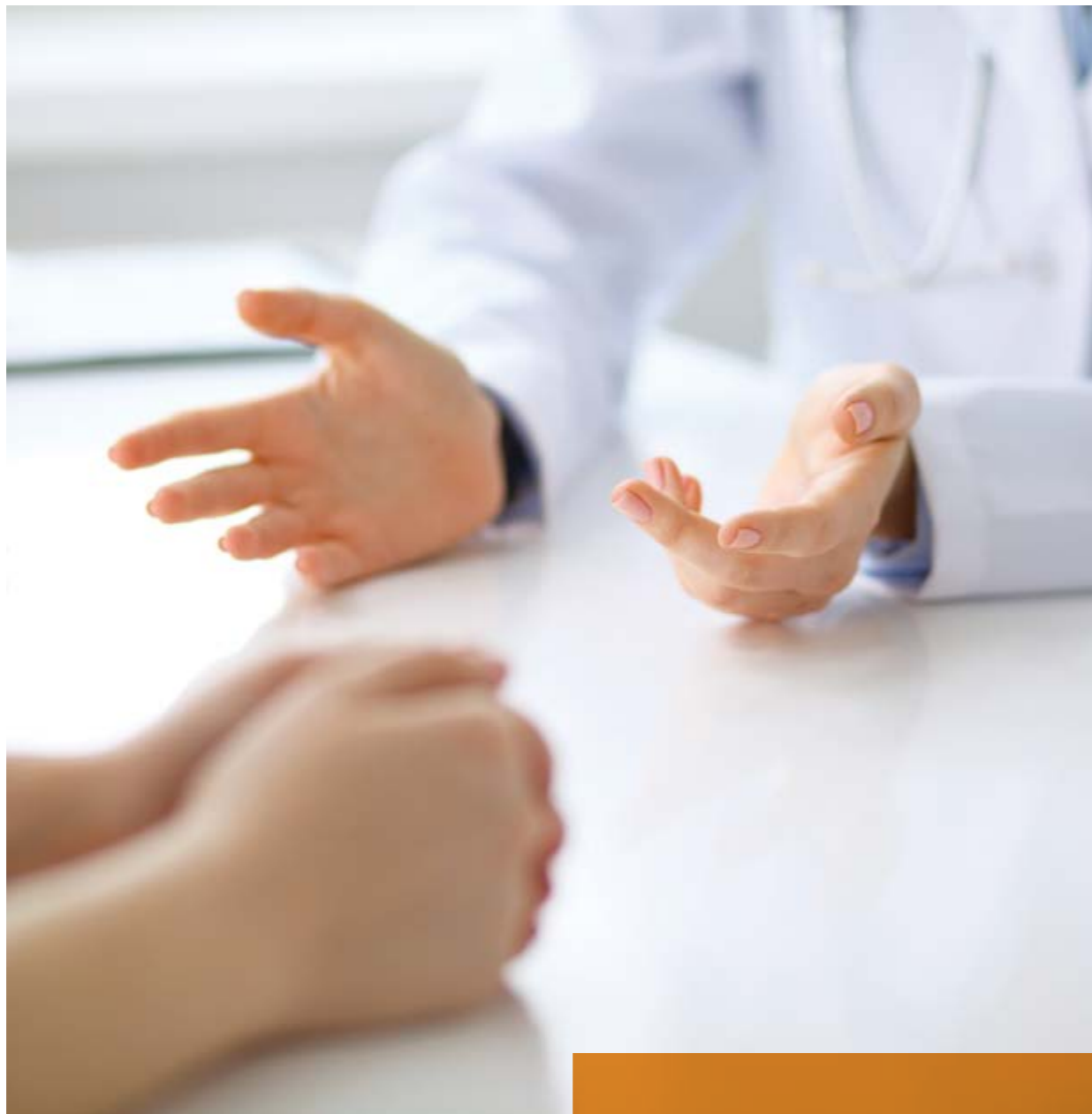
- PPE usage
- Compliance to security rules and work permit implementations
- Conditions of the work site
- Conditions of equipment used

Audits will be mad at the beginning of workday, at the peak working hours and near breaks.

### 4.3.26 Recording the Complaints (PR-2, PS-2)

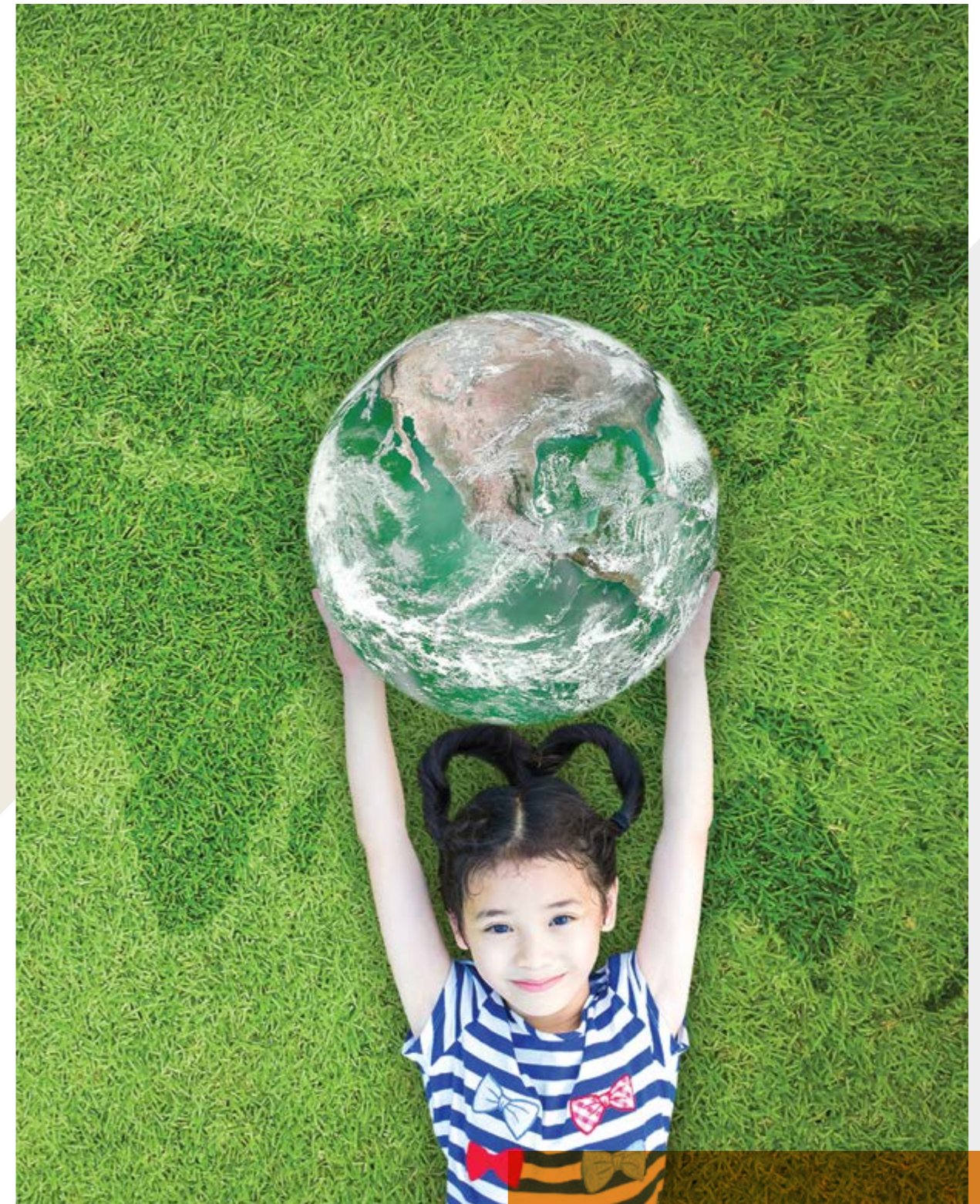
HS related complaints from personnel; staff, local public, local authorities or contractors will be recorded. Recordings will include information about the subject of the complaint, complainant, corrective actions and feedback to the complainant (See App 7).

Complaints from local public, local authorities or contractors will immediately be reported to AKFEN. Taking no action against complaints is not an option. Details are defined in **Human Relations Procedure**.



### 4.3.27 Principles of Employing Child and Youth Labor (PR-2, PS-2)

As AKFEN, we commit that we will not employ any child and youth worker in any of our construction and operation site.



## 4.4. OCCUPATIONAL HEALTH AND SAFETY SERVICES

To provide occupational health and safety services scoping actions to prevent occupational hazards and relevant measures to be taken, AKFEN;

- Assign occupational safety expert, on-site doctor and other healthcare personnel at workplaces having ten or more personnel and categorizes as highly hazardous.
- Provide this service by getting service from common health and safety unit, if there are not suitable personnel amongst employees.
- May fulfill this service by taking hazard category and number of staff, if it has determined qualification and necessary document.
- Employers or representative of employers of workplaces not having the determined qualification and necessary document, however, having personnel less than 10 and falling in less hazardous category, may perform occupational health and safety services, excluding employment and periodical examinations (Occupational Health and Safety Law numbered 6331)

### 4.4.1. Occupational Health and Safety Specialist

Staff, who will be assigned as HS officer by Employer, has to have valid HS specialist certificate.

Among HS specialists;

- The ones having (C) class certificate are allowed to work in less hazardous workplaces,
- The ones having (B) class certificate are allowed to work in less hazardous and hazardous workplaces,
- The ones having (A) class certificate are allowed to work in all workplaces falling in any type of hazard category.



To fulfill their assignment, HS officers work at certain times mentioned below:

- a) **at least 10 minutes per month** per worker for the ones at less hazardous category,
  - b) **at least 20 minutes per month** per worker for the ones at hazardous category,
  - c) **at least 40 minutes per month** per worker for the ones at highly hazardous category
- 
- At least one full-time HS officer is assigned for each group of 1000 workers at workplaces categorized as less hazardous and having 1000 or more workers.
  - At least one full-time HS officer is assigned for each group of 500 workers at workplaces categorized as hazardous and having 500 or more workers.
  - At least one full-time HS officer is assigned for each group of 250 workers at workplaces categorized as highly hazardous and having 250 or more workers. (**Regulation Concerning the Assignment, Authorization, Responsibility, and Trainings of HS Specialist**).

## 4.4.2. Workplace Doctor

Staff, who will be assigned as on-site doctor by Employer, has to have valid workplace doctor certificate according to relevant legislation.

To fulfill their assignment mentioned in legislation, on-site doctors work at certain times mentioned below:

- a) **at least 5 minutes per month** per worker for the ones at less hazardous
  - b) **at least 10 minutes per month** per worker for the ones at less hazardous
  - c) **at least 15 minutes per month** per worker for the ones at less hazardous
- 
- At least one full-time on-site doctor is assigned for each group of 2000 workers at workplaces categorized as less hazardous and having 2000 or more workers
  - At least one full-time on-site doctor is assigned for each group of 1000 workers at workplaces categorized as hazardous and having 1000 or more workers.
  - At least one full-time on-site doctor is assigned for each group of 750 workers at workplaces categorized as highly hazardous and having 750 or more workers (**Regulation Concerning the Assignment, Authorization, Responsibility, and Trainings of Workplace Doctor and Other Healthcare Personnel**)



## 4.4.3. Other Healthcare Personnel

Staff, who will be assigned as other healthcare personnel by Employer, has to have valid other healthcare personnel certificate according to relevant legislation.

To fulfill their assignment mentioned in legislation, other healthcare personnel work at certain times mentioned below:

- a) **at least 10 minutes per month** per worker for the workplaces categorized as highly hazardous and having workers between 10 and 49
  - b) **at least 15 minutes per month** per worker for the workplaces categorized as highly hazardous and having workers between 50 and 249
  - c) **at least 20 minutes per month** per worker for the workplaces categorized as highly hazardous and having workers 250 and more
- 
- Assignment of other healthcare personnel is not required at workplaces where full-time on-site doctor is assigned. However, to provide more efficient occupational health and safety service, other healthcare personnel can be assigned upon the request of on-site doctor and approval of the Employer (**Regulation Concerning the Assignment, Authorization, Responsibility, and Trainings of On-site Doctor and Other Healthcare Personnel**).



# 4.5. OCCUPATIONAL HEALTH AND SAFETY MANAGEMENT AT AKFEN ENERGY CONSTRUCTION SITES (PR-2, PS-2)

## 4.5.1. Preparation of Construction HS Management Plan

AKFEN energy has the contractors to construct the renewable energy plants. When choosing the contractor, suitable experience and qualifications are main assessment criteria.

Contractors should have OHSAS 18001, ISO 14001 certificates. Contractor will be asked to prepare Occupational Health and Safety Management Plan in accordance with their construction activities (See App-20). Unless this plan is approved by AKFEN, the contractor will not be allowed to start activities in the construction site.

## 4.5.2 Auditing of the Contractor

HS performance of Contractor's activities will be determined by periodic audits. Including but not limited to the below mentioned documents and records are checked during these audits;

- a) OHSAS Documents, if exists
  - b) HS Organization Chart
  - c) Job definition and key personnel CVs
  - d) HS Policy
  - e) Compliance to National HS Legislation
- 
- HS Specialist Appointments within legal timeframe, proper to hazard category and number of workers
  - Social security institution notifications
  - Personal files
  - Documents showing that Contractor's personnel have had HS training
  - Annual training plan
  - Training matrix
  - Health reports of Contractor's personnel
  - First-aider personnel list
  - Operator certificates
  - Vocational training documents
  - Risk analysis specifically prepared for each work
  - PPE use
  - Emergency response plans
  - Emergency response team primary and secondary list

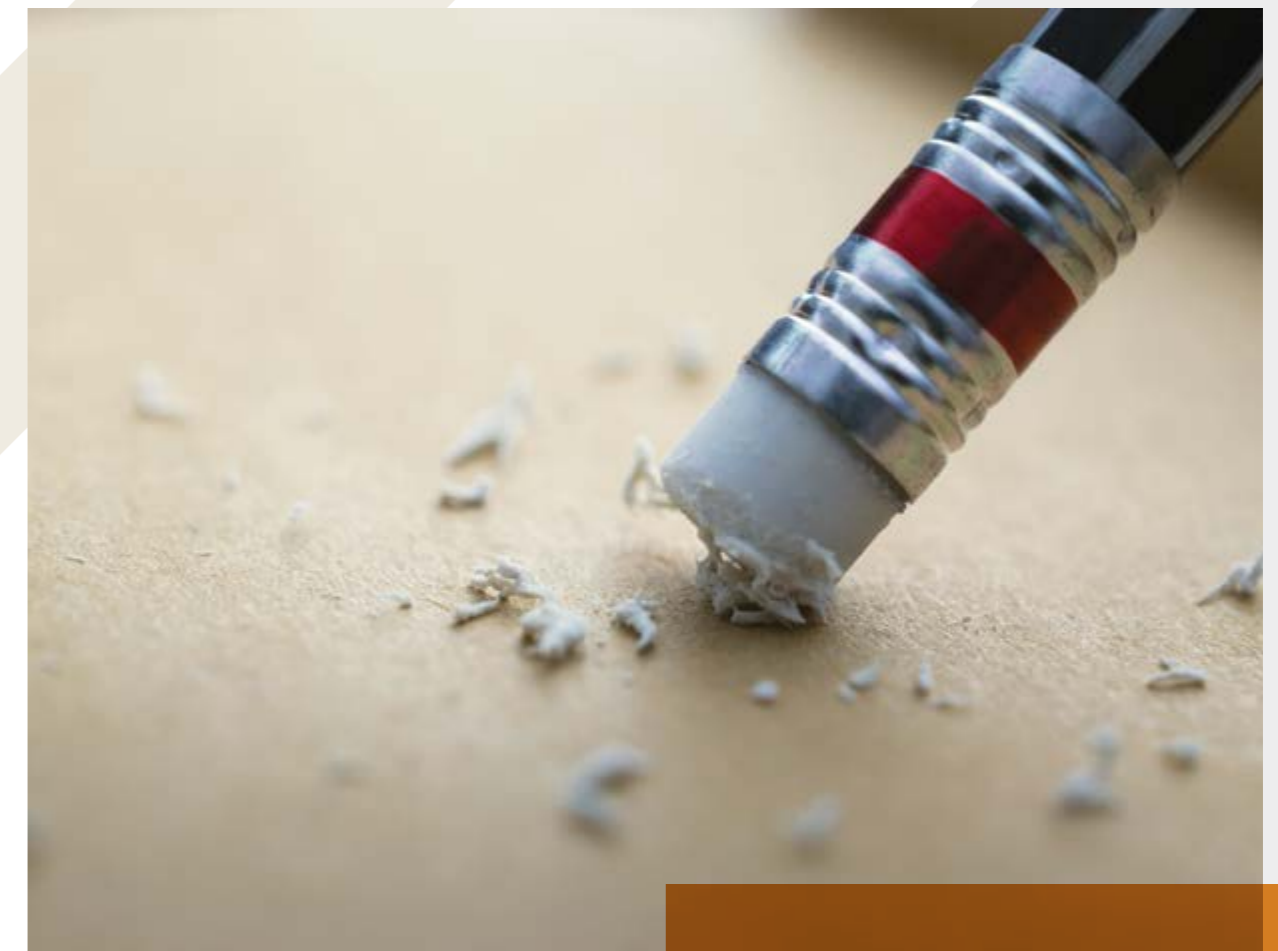


## 4.6. CORRECTIVE PREVENTIVE ACTIONS

HS Officer and HS auditors assigned by him/her will observe the site (construction and/or operation sites) continuously and check that the works are performed according to HS rules. When non-compliance is observed relevant action will be taken immediately and correct method will be illustrated. While doing this, what is right and what is wrong will be explained with reasons and employees' attention will be caught. Realization and appreciation of observed good implementations always draw more attention and motivate the workers. Therefore, good implementations will also be praised and rewarded.

Additionally, it will be observed that the subjects mentioned in relevant work permits relevant to the work performed at site, are fulfilled completely. Otherwise, work will be stopped until the necessary safety rule mentioned in work permit is fulfilled. To record non-compliances and corrective actions below mentioned forms will be used:

- **Corrective Action Process Scheme**
- **Preventive Action Process Scheme**
- **Corrective Action Form**
- **Preventive Action Form**
- **Corrective / Preventive Action Follow-up List**



- Emergency response contact information
- Drill documents
- Health safety council minutes
- Minutes showing that the employee representative is selected
- Occupational accident and occupational illness notification forms
- Monthly occupational accident statistics
- Occupational accident root cause analysis
- Corrective preventive activity forms
- Corrective preventive follow-up list
- Safety Information Forms
- PPE list approved by Contractor
- Periodic control documents of machine and equipment
  - Lifting vehicles
  - Pressure vessels
  - Electricity, grounding and lightning conductor
  - Fire-extinguisher equipment
  - Scaffoldings and work at height equipment
  - Operating machines and devices
  - Stationary equipment
  - Human Relations Management

- f) Working Instructions
- Work at height
  - Electricity works
  - Hot works
  - Indoor activities
  - Working inside or near water
  - Locking labeling system
  - Lifting operations
  - Scaffolding and ladders
  - Safety of hazardous material
  - Material and equipment transportation
  - Blasting activities
  - Excavation filling activities
  - Iron, mold, concrete works
  - Drilling and injection works
- g) Maintenance and repair control forms
- h) Reward and penalty system
- i) Work permit forms
- j) Grievance mechanism
- k) Traffic management implementations
- l) Site safety implementations and markings
- m) HS monitoring and measurements
- n) Internal Audits

Reports to be given to employer HS control form will be used contractor audits at site (See App-3). Form will be updated depending on location of construction site, specifications of activities and changing legislation.

As per HS legislation, legal permit processes are defined in App-25-2.

# 5. HUMAN RESOURCES MANAGEMENT

AKFEN, accepts that the principal source is human relations and believes in creating value together with its employees in order to achieve sustainable competitive advantage. It improves corporate performance and realizes strategic goals in the end with employees having high skill and motivation level who are prone to professional development. Therefore, Human Relations Procedure (See App-31) is formed. This procedure is prepared to define how to prepare and form the personal file content, personnel employment and CVs, job descriptions, trainings and performance monitoring.

In scope of this procedure below mentioned items are defined;

- Job descriptions in accordance with the scope of organization chart of AKFEN, authorization and manager/ personnel experience and skills criteria,
- Procedures towards request of new personnel, determination of wanted qualifications
- How the applications to new personnel employment,
- Who controls the job application process and how it is controlled and followed,
- Who provide the orientation training to the new personnel and how it is provided and recorded,
- Who will make personnel performance and how,
- Developing performance criteria suitable for the job,
- How the performance data is assessed and what are the sanctions,
- Who determines the training needs and how,
- How the training needs supplied by internal/external resources,
- How the minimum criteria of trainers for internal and external trainings are define and how the trainings assessed,
- How the administrative, health and training records of personnel is prepared, where and for how long the records are archived,
- How the labor continuity will be provided when personnel cannot come to work due to permits, leave of employment, health problems etc.,
- How the personnel questionnaire, suggestion, objection and complaints will be gathered and assessed,
- Personnel contact rules developed according to hierarchical structure,
- Audit and control principles made to Contractor's personnel,
- In-house disciplinary rules.

In this context following will be provided;

- Assessing the diploma, professional competence certificate, experience, competence, knowledge of foreign language, other trainings and certificates for determination of personnel suitable for job,
- Not giving priority to patronage, etc. determination of personnel suitable for job,
- Ensuring job and work for personnel in accordance with their occupation, experience, competence,
- Determination of good salary/wage that takes competence and success as basis,
- Not showing favoritism to gender, race, religion for salary,
- Increasing the personnel performance and provide continuity,
- Providing internal trainings, courses, etc. for increasing the personnel performance and provide continuity and encouraging participation,

- Encouraging personnel to increase personal and occupational competency,
- Providing equality for accessing all these opportunities and ensuring that personnel are taking advantage of opportunities,
- Informing the employees about discipline rules of company in shortest time and monitoring discipline,
- Providing easy access to company work rules,
- Announcing the changes in company work rules at the shortest time and provide communication for announcement,
- Providing opportunity for workers to have easy access to information,
- Providing physical exercise opportunity in workplace,
- Providing opportunity for workers to keep them motivated and psychologically relaxed,
- Providing recreation opportunities for workers to spend resting times,
- Internet, library opportunities
- In plants located far away from residential areas, giving personnel opportunity to communicate with their families and to follow the changes in country,
- Organizing courses and activities such as chess, bridge games, foreign language course for workers to spend their free times,
- Organizing cultural tours, picnic, sports competition, celebration activities in order to enhance the relationship of workers,
- Encouraging workers to share their experiences and skills with their coworkers,
- Providing opportunity for implementing the good applications in one workplace to another,
- Adopting the company policy,
- Supporting to provide personal development and continuity, sparing project-based financial sources,
- Preventing labor loss due to human resources and planning work schedule and work durations, keeping work communication open and functioning,
- Implementation of suitable communication channels between personnel and management (taking and assessing the requests and complaints, giving feedbacks on short notice),
- Monitoring the potable water, food, infrastructure, etc. needs of subcontractors and raising their life qualities,

Job descriptions, job criteria, power of attorney and authorities given in AKFEN organization chart is given in **Organization Handbook**.

**Discipline Instructions** are prepared for implementation of discipline in workplace. Human Resources Manager delivers this instruction to all managers/personnel during orientation trainings. Following subjects are given in mentioned instructions;

- Compliance to work hours,
- Communication with other personnel and managers, (Internal/External Communication Procedure)
- Communication with third parties/institutions 3(Internal/External Communication Procedure)
- Dress code,
- Permits (will be executed in accordance with Permit Instructions).

Besides for personnel selection, extensive training, performance evaluation, recruitment dismissal applications, following subjects are handled with priority.

#### Management of Labor Force:

This is a process that effectively plans labor force in workplace. Main criteria in planning is to provide the corporate performance to optimum amount of workers. One of the performance criteria of workers is compliance with work plans

prepared by AKFEN. Human resources unit will make contributions for assessment the compliance and increasing efficiency with reports to be prepared for the plans.

#### Equality of opportunity and anti-discrimination:

Principle of equality of opportunity is defined in Labor Law numbered 4857, Article 5.

- In working relationship, discrimination against language, race, gender, political opinions, philosophical belief, religion and similar subjects are prohibited.
- Unless otherwise essential reasons are given, employer cannot discriminate the part-time workers against full time workers, and workers with indefinite duration against workers with definite duration.
- Unless because act of god caused by biological reasons or work related reasons, direct or indirect discrimination towards gender or pregnancy is prohibited at forming, duration and end of contract.
- A lower wage cannot be decided because of gender, for same and equal work.
- Application of special protective provisions because of workers gender, doesn't enforce the application of lower wage.

We, AKFEN commit to comply with provisions of equality of opportunity given above.

#### Work conditions (including contractor and subcontractor):

Right to work in health environment, right to rest are constitutional rights of workers. As they are bill of rights, they are absolute and unconditioned. Work conditions provided for AKFEN employees are formed by taking the national legislations and sectoral best applications into consideration and with utmost care and compatible with human dignity.



#### Employee rights:

Employee rights are defined as social and economic rights within the framework of Labor Law. These rights are explained to personnel in scope of internal trainings. As AKFEN, we commit to comply with all employee rights that are under the scope of national labor legislation.

#### Child employment and forced labor:

According to Turkish Constitution "No one can be forced to work. Forced labor is prohibited." Procedures for employing workers under age of 18 are stated in national legislation. As AKFEN, we announce that we will not have child employees and we will not force anyone to work and we are against forced labor.

Determination of work conditions for AKFEN employees and subcontractors, and improvement are stated in **Implementation of Occupational Health and Safety Procedure.**

## 5.1. LABOR SATISFACTION (PR-2, PS-2)

In order to provide employee satisfaction, employee questionnaires will be prepared. Human Resources Unit will apply questionnaires and reformatory measures will be taken according to results of these questionnaires.

Besides suggestion boxes will be placed for suggestions of employees in cafeterias, offices, etc. In orientation training given to employee, the purpose and usage method of these boxes will be explained. HS specialist will collect forms in these boxes and related units will assess the suggestions and Corrective Actions will be monitored and shared with Human Resources Unit. Applied Corrective Actions will be announced in boards.







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