

Projects & Procurement - Turkey

Obtaining approval for construction of nuclear power plants

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Introduction

In 2007 Turkey's nuclear industry was given new momentum through the enactment of the Law on the Construction and Operation of Nuclear Power Plants and the Sale of the Energy Generated from Nuclear Power (5710/2007). The law, as well as the regulation relating the principles, procedures and incentives for contracts and contest in relation to the law, formalised the application process and has facilitated the expansion of the nuclear industry in recent years.

Among other things, the law lays out the process for selecting a private sector company to construct a nuclear power plant. However, this process cannot begin until proper approval has been obtained from the Ministry of Energy and Natural Resources and other relevant ministries.

Any company building a nuclear power plant will be subject to the oversight of the Turkish Atomic Energy Authority (TAEK), a Turkish government entity founded in 1956 and re-chartered in 1982. TAEK operates within a broad scope and is responsible for both the formulation and promotion of nuclear policy, as well as the regulation of any enterprises working in the nuclear industry and any nuclear power plants. However, some have criticised the breadth of its scope and raised questions regarding its independence. It is unclear whether TAEK will continue in its existing incarnation or whether it will be reformed again in the near future.

Impact of legislation

There are a number of positive and negative aspects to the legislation. The main benefits are as follows:

- The government may provide additional incentives for training and investment in nuclear power, at the discretion of the Council of Ministers.
- If the Treasury or other public institution is the owner of the land on which a nuclear power plant is to be constructed, the government is authorised by the law to provide access to the land for free by granting a usufruct right over the land for the benefit of the project company. This incentive remains at the discretion of the Turkish government.

In turn, the main limitations are as follows:

- The law provides that an agreement between a project company and the trade and undertaking corporation governing energy sales shall not exceed 15 years.
- In addition to attaining insurance, the project company must set aside a contribution of \$0.15 per kilowatt hour to each of a decommissioning account and a national radiological waste account.
- According to Article 23 of the regulation, the project company is responsible for all decommissioning and dismantling of the nuclear power plant at the end of its useful life.
- The project company is also responsible for attaining and maintaining all fuel and supplies that are necessary for the continued operation of the nuclear power plant.

Licensing requirements

The two most important licensing entities are TAEK and the Electricity Market Regulatory Authority (EMRA), which provide nuclear power and electricity generation licences, respectively. In addition to these Turkish authorities, there are many international treaties and organisations that must be satisfied.

TAEK licences

Any company seeking to construct a nuclear power plant is obliged to seek a site licence, a construction licence and an operation licence from TAEK. These licences and the process of obtaining them are governed by the Decree on Licensing of Nuclear Installations.⁽¹⁾ In addition to the three main licences, a number of secondary licences must be obtained from TAEK and other related institutions.

TAEK site licence

The TAEK site licence is the first step necessary to license a nuclear power plant. To apply, a project company must submit a site report that includes:

- the power and type of reactor to be built and how it will be used;
- the technical capability of the applicant and institutions carrying out site studies;
- a regional map, including the site of the reactor and details of the surrounding region;
- topographical, geological, geotechnical, hydrological, seismological and meteorological characteristics of the selected site;
- layout alternatives, depending on the reactor types considered;
- an evaluation of the site with respect to both natural and man-made disasters, as well as secondary effects;
- the adequacy of water sources for cooling;
- preliminary studies of the effects of radiation on the public due to regular and emergency operation;
- the accessibility of the national grid and off-site electrical power;
- a quality assurance programme; and
- any additional information that may be requested by TAEK.

After receipt of this information, TAEK will evaluate it and may choose to issue a site licence. After receiving the site licence, the project company may carry out some limited construction work – the project company can establish potable water and an electricity supply, begin any necessary work on roads and harbours and build support buildings, but not the reactor itself. During this process, the project company must carry out the detailed investigations necessary to apply for construction and operation licences.

TAEK construction licence

This licence is attained in two stages: a limited working licence and a final construction licence. The final licence is issued only if construction has commenced within 12 months of the issuance of the limited working licence. Before the limited working licence can be issued, the project company must attain a site licence and submit to further extensive reporting.

Much of the relevant information is submitted in the form of a preliminary safety analysis report, the details of which can be found in the Decree on Licensing of Nuclear Installations. This report includes information on the safety of the construction, security precautions and estimates, and a description of waste disposal precautions, among other things.

After obtaining a limited working permit, the project company can start to construct the foundations of the reactor, as well as environmental safety buildings and other structures. After the receipt of the final construction permit, the project company may move forward with completion of the reactor.

TAEK operation licence

On obtaining the site licence and construction licence, the project company can then apply for an operation licence. To attain this licence, the company must submit detailed documentation of its internal procedures relating to security, personnel and a range of other topics. The full requirements for this licence may be found in the Decree on Licensing of Nuclear Installations. The project company is obliged to follow the procedures that it submits to TAEK in the application for the operation licence. Any deviation from the reported procedures must be approved by TAEK. Furthermore, this licence is not transferable without the approval of TAEK.

Other necessary licences and permits

In addition to the three main licences, the project company may need to obtain a number of other licences and permits, some of which include:

- an environmental impact assessment report and affirmative certificate or a decision that an environmental impact assessment is not required;
- an operator's licence from TAEK, needed by certain personnel under Article 28 of the

Regulation Concerning the Management Organisation on the Investigation Reactors, Personnel Qualifications and Licences of the Operator Personnel;

- permits related to surface rights, dependent on the nature of the land (eg, forest, agricultural land, protected area);
- an initial operation permit, under Article 23 of the Nuclear Licensing Bylaw;
- a permit for the initiation of fuel loading and test operations, under Article 26 of the bylaw;
- a heavy water loading permit, under Article 28 of the bylaw;
- a permit to work at full capacity, under Article 29 of the bylaw;
- a permit to work at limited capacity, under Article 33 of the bylaw;
- permits required before the disposal into the sewage system of any toxic or chemical materials under Article 12 of the Regulation Concerning the Waste of Use of Radioactive Materials; and
- permits related to entry, exit, transportation and transit of radioactive materials, under Articles 15 and 16 of the Bylaw Concerning Radiation Security and Articles 61 and 66 of the Radiation Security Regulation.

EMRA licence

In addition to the licences issued by TAEK, an electricity generation licence issued by EMRA is necessary to operate in Turkey.

Nuclear waste management

Nuclear waste management is one of the most critical issues in the development of nuclear power plants. For the purpose of effective and secure waste management, Law 5710/2007 states that a decommissioning account and a national radiological waste account must be constituted. The funds accumulated in these accounts by the project company must be used only to meet the costs of waste management by:

- determining the temporary or final storage sites in the construction, licensing, operation and decommissioning of the storage facility;
- arranging for the transportation and processing of used fuel or high-level radioactive waste to be stored in the temporary storage site or disposed of in the final storage site;
- carrying out research that will ensure the management of radioactive waste and development activities; and
- determining the costs of dismantling operations of the nuclear power plant under Article 5 of the law.

The Regulation on Radioactive Waste Management entered in force on March 19 2013. The regulation sets out that, including the cost, the management of radioactive waste that is produced during the use of nuclear energy and ionising radiation sources falls under the responsibility of the person carrying out such activity.

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Endnotes

(1) Published in the *Official Gazette*, December 19 1983 (18256).

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