

Nuclear Energy Legislation and Projects in Turkey

September 2016

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This client alert provides information regarding the Turkish nuclear energy legislation and the current status of the nuclear power plant projects in Turkey.

I. General

Turkey has rich uranium reserves and a nuclear power plant has been on the agenda of the Government since the early 1960s. However, attempts by the Government in 1960, 1968, 1974, 1998 and 2000 in various provinces, such as Akkuyu and Sinop, all failed. Despite lengthy research, detailed preparation efforts and tender processes for such projects, all of them have failed for different reasons, and presently, Turkey does not have any nuclear power plants in operation or under construction.

Turkey's latest effort to construct and operate a nuclear power plant commenced in 2006. A draft law on nuclear energy was prepared by the Ministry of Energy and Natural Resources ("MENR") and submitted to the Parliament on 31 October 2006, which was enacted by the Turkish Parliament on 9 November 2007 as "Law No. 5710 Concerning the Construction and Operation of Nuclear Power Plants and the Sale of the Energy Generated from Nuclear Power Plants"¹ (the "Nuclear Energy Law").

II. Incentivized Regime under the Nuclear Energy Law

A. Incentives

1. Incentives under the Nuclear Energy Law and Implementation Regulation

The Nuclear Energy Law and its Implementation Regulation² (the "Implementation Regulation") provide the following incentives for the construction and operation of a nuclear power plant in Turkey:

- (i) In accordance with Article 4 of the Nuclear Energy Law and Article 9 of the Implementation Regulation, all the energy proposed to be generated by nuclear power plants during the selection process, which shall start operation before 31 December 2020, shall be purchased by the Turkish public electricity wholesale company ("TETAS") for a maximum period of 15 years and until 31 December 2030 at the latest. This energy shall be sold to the electricity retail sale and wholesale

¹ Published in the Official Gazette No. 26707 dated 21 November 2007.

² Published in the Official Gazette No. 26821 dated 19 March 2008.

companies and each electricity retail sale and wholesale company shall be obligated to purchase a certain percentage of their electricity sales from the energy generated by nuclear power plants. The price and purchase guarantees offered by the authorized company during the selection process shall be applicable to such sales. In the event that the retail sale and wholesale companies do not comply with the above-stated purchase requirement, the Energy Market Regulatory Authority (“EMRA”) shall send a notice requesting removal of the violation in 30 days under Article 16(b) of the Electricity Market Law No. 6446³ (the “Electricity Market Law”). In the event that the violation is not removed, EMRA shall impose an administrative fine, which is, with figures applicable in 2016, TL 604,113. Besides, in the event of repetition, EMRA shall impose heavier sanctions up to and including the cancellation of the licenses of the relevant companies. In addition, pursuant to Article 16(c) of the Electricity Market Law in case it is not possible to remove the violation, the administrative fine shall be imposed without a prior notice.

- (ii) Article 7(1) of the Nuclear Energy Law provides that the Council of Ministers is authorized to provide certain incentives for investments concerning technology development and production of nuclear fuel as well as the training of the personnel to be employed in the nuclear power plants.
- (iii) In accordance with Article 7(2) of the Nuclear Energy Law and Article 4(1) of the Implementation Regulation, in the event a nuclear power plant is to be constructed on forest land and/or on land under the private ownership of the Treasury (*i.e.*, Treasury lands which are not allocated for the performance of a public service) or under the control or disposal of the State, such land shall be leased to, or a right-of-way given, or usufruct rights thereof shall be granted to the relevant entities. The same article provides further that in case decommissioning expenses cannot be compensated by decommissioning fund, the Treasury shall make a payment up to 25% of the amount in the account. If the expenses still cannot be compensated, the authorized company shall pay the remaining amount. (Please see “Waste Management” section below regarding decommissioning fund.)
- (iv) Article 6 of the Implementation Regulation states that following requirements shall be performed by the relevant governmental authorities: (i) receipt of the information required by the company for environmental impact assessment report; and (ii) taking required physical and security precautions outside of the nuclear power plant site.

2. Incentives under the Other Laws

- (i) *Exemption from the Construction Permit Requirements:* The Law No. 6719 Amending Electricity Market Law and Certain Other Laws⁴ (the “Amending Law”) brings an additional article into Law No. 2690 on the Turkish Atomic Energy Authority⁵ which exempts nuclear power plants from the provisions on construction licenses, construction supervision and building use permit requirements provided that any liability shall rest exclusively with the plant operator. Construction supervision of nuclear power plants will be carried out by supervision entities authorized by the Turkish Atomic Energy Authority. Issues relating to permits and supervision of such power plants will be stated in the regulation to be adopted by the Turkish Atomic Energy Authority on the basis of the opinion of the Ministry of Environment and Urbanization.
- (ii) *Exemption from the Coastal and Olive Cultivation Restrictions:* The Amending Law exempts refineries, petrochemical facilities and attachments as well as facilities to be constructed within the scope of the nuclear power plant projects from the restrictive provisions of Coasts Law No. 3621⁶ and Law No. 3573 Concerning Olive Cultivation Improvement and Vaccination of Wild Olive Trees⁷

³ Published in the Official Gazette No. 28603 dated 30 March 2013.

⁴ Published in the Official Gazette No. 29745 dated 17 June 2016.

⁵ Published in the Official Gazette no. 17753; dated 13 July 1982.

⁶ Published in the Official Gazette no. 20495; dated 17 April 1990.

⁷ Published in the Official Gazette no. 4126; dated 7 February 1939.

by adding a new article into Law No. 2565 Concerning Forbidden Military Zones and Security Zones⁸.

- (iii) *Extension of the Period for Obtaining the Permits:* In accordance with the Electricity Market Law and Electricity Market Licensing Regulation, all permits and licenses must be received during preliminary licensing periods. The Amending Law amend the Electricity Market Law to provide an exemption from this rule regarding the nuclear power plants. Accordingly, Article 6(10) of the Electricity Market Law provides that the documents relating to the receipt of building licenses to be obtained for nuclear energy generation facilities and permissions, approvals, licenses, permits and similar documents arising from other legislation as well as the receipt of ownership or right of use regarding the site on which the nuclear facility will be installed shall be presented to the Turkish Atomic Energy Authority on a date determined by that Authority and following the issuance of a generation license. Therefore, the period for obtaining the permits is extended specifically for nuclear power plants.

III. Licensing Requirements

According to Article 5(1) of the Nuclear Energy Law, the authorized company is required to obtain any and all licenses, permits and certificates in accordance with the relevant legislation. The Nuclear Energy Law does not, however, expressly specify the time table and the legislation to be followed by Turkish Atomic Energy Authority ("TAEK") during the licensing process.

Pursuant to Article 4(e) of the TAEK Law No. 2690⁹, TAEK is entitled to grant, suspend and annul all and any kind of approvals, permits and licenses relating to selection of the site, construction, operation and environmental safety issues concerning nuclear power and research plants. In this respect, TAEK is authorized to issue the necessary technical principles and procedures, by-laws and regulations.

Based on these powers, TAEK has set out in a guideline the criteria to be satisfied by investors willing to construct and operate nuclear power plants in Turkey. These criteria treat a large scale of key importance issues such as nuclear safety, licensing, reactor type selection, power plant life time, fuel technology, minimum electrical power, location and operational record of the power plant. For instance, while the design life-time of the nuclear power plant is required to be at least 40 years, with respect to the reactor type selection investors may only prefer either pressurized heavy water reactors that utilize natural uranium or pressurized light water and boiling light water reactors that utilize enriched uranium.

On the other hand TAEK has issued a directive regarding principles and legislations to be taken into consideration during the licensing of the nuclear power plant. This directive requires that a reference power plant operating based on the same technology shall be presented to TAEK by the investors and shall be veiled as a reference throughout the entire licensing process. In addition to compliance with Turkish legislation and the International Atomic Energy Authority's regulations, nuclear safety and licensibility regulations in the designer company's country are taken into consideration in the licensing process.

Considering the existing legislation governing the nuclear energy sector in Turkey, the following licenses will be required for the construction and operation of a nuclear power plant:

(i) Preliminary TAEK Approval

Pursuant to Article 50 of the Regulation Concerning the Radiation Security¹⁰ ("Radiation Security Regulation"), in order to engage in the production, importation and exportation activities, sale and purchase, transportation, storage, maintenance, commissioning, dismantling, modification, reservation and utilization of each radiation resources, individuals and legal entities are required to apply to TAEK to obtain an approval.

The license to be granted by TAEK under Article 50 of the Radiation Security Regulation is considered as a precondition for any other permits, certificates or licenses to be given by other governmental authorities. TAEK is not allowed to initiate the license evaluations without issuance of an Environmental Impact Assessment Affirmative Opinion by the Ministry of Environment and Forestry.

⁸ Published in the Official Gazette no. 17552; dated 22 December 1981.

⁹ Published in the Official Gazette No. 17753 dated 13 July 1982.

¹⁰ Published in the Official Gazette No. 23999 dated 24 March 2000.

(ii) TAEK Licenses

The Nuclear Security Department and the Advisory Board of Nuclear Safety of TAEK are authorized to conduct licensing activities as per Article 4 of the Nuclear Licensing By-Law.¹¹ The license is the principal document issued by TAEK that governs the rights and obligations of the licensee. The licensing process is threefold: TAEK site license, TAEK construction license, and TAEK operation license.

a. TAEK Site License

Any company that wishes to construct a nuclear power plant in Turkey is required to obtain a Site License from TAEK. The site report that needs to be submitted to TAEK during such application covers primarily the following issues:

- the capacity of the power plant and the reactor type;
- site map and any other maps indicating the geographical situation of the selected site where the facility will be constructed;
- information and survey results in relation to topographical, geological, hydrological, seismological and meteorological qualifications;
- different options for location of the reactor in the selected site considering the reactor type;
- evaluation reports of the site according to prospective consequences of earthquake, flood or storm; and the possible external affairs including but not limited to aircraft accidents, fire, explosion and collapse of dams; and
- documents evidencing the sufficiency of water resources.

Accordingly, adequacy of the selected site for a power plant construction is assessed in light of the principles set out in the Regulation regarding the Nuclear Power Plant Sites.¹²

b. TAEK Construction License

In order to obtain a TAEK Construction License, the applicant must hold a site license and submit the preliminary safety analysis report including, but not limited to, the safety principles for construction, operation and decommissioning, projects of the buildings, precautions for radioactive wastes, and security analysis for ordinary and extraordinary operation. TAEK Construction License is issued at two stages: (i) the limited working license; and (ii) the final construction license. Once the applicant is granted a limited working license, it must start the construction works within 12 months, which may be extended by TAEK based on justified reasons.

c. TAEK Operation License

Companies that obtained a site license and a construction license are eligible to make an operation license application to TAEK. TAEK Operation License is issued at three stages: (i) the initial operation permit; (ii) the initiation of fuel loading and test operations permit; and (iii) the permit to work in full capacity, pursuant to the Nuclear Licensing By-Law. Mainly the following documents shall be submitted to TAEK for review during the TAEK Operation License application:

- results of the preliminary testing;
- quality program;
- documents evidencing the qualifications of operation personnel;
- program for fuel and testing program for fuel;
- documents in relation to operation conditions;

¹¹ Published in the Official Gazette No. 18256 dated 19 December 1983.

¹² Published in the Official Gazette No. 27176 dated 21 March 2009.

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- internal instructions of the facility;
 - program for radiation protection; and
 - plans for emergency.

The operator cannot change the internal instructions and regulations without the prior approval of TAEK. The Operation License cannot be transferred without prior approval of TAEK.

(iii) EMRA License: In addition to the aforesaid TAEK licenses, an electricity generation license issued by EMRA is also required to be obtained for the construction and operation of a nuclear power plant. According to Article 3 of the Nuclear Energy Law, the optimum bid shall be chosen by TETAS and then EMRA would give a generation license to the awarded company once the optimum bid is approved by the Council of Ministers. Therefore, in order to construct and operate a nuclear power plant under the Nuclear Energy Law (i.e., by benefiting from the incentives available thereunder, such as the price and purchase guarantees), legal entities are required to participate and become the preferred bidder in the tender to be conducted by TETAS. However, any legal entity who wishes to construct and operate a nuclear power plant without benefiting from the incentives of the Nuclear Energy Law may apply to EMRA for a nuclear power plant license without participating in the above-stated TETAS tender.

Obtainment of the generation license will solely be governed by the Electricity Market Law No. 6446 which introduces a preliminary licensing mechanism whereby each generation company is issued a preliminary license for the pre-construction stage, which will be replaced by a license upon commencement of the construction stage. The period of a preliminary license is no more than 24 months, unless there is a force majeure event. EMRA shall be authorized to extend this period up to half of the period subject to the capacity and resource type of the project.

A legal entity shall, within its preliminary license period (i) obtain the required permits, approvals, licenses and other similar documents required under the applicable law to start the investment and construction of its generation facility, (ii) obtain ownership or an easement right for the site where the generation facility will be located, and (iii) perform any other obligations as may be required by EMRA for the relevant preliminary license holder. EMRA will not issue a license if the preliminary license holder does not fulfil such requirements.

(iv) Other Licenses and Permits: In addition to the above, there are certain environmental, and health and safety permits that must be obtained, including the followings:

- pursuant to Article 12 of Regulation Concerning the Wastes of Use of Radioactive Materials¹³, the license holder shall obtain the necessary permits before the disposal of the wastes to the sewage system by the licensee if the radioactive liquid to be disposed includes toxic or other chemical materials;
- pursuant to Article 37 of the Regulation Concerning Radioactive Wastes Management¹⁴ authorizations granted by TAEK for treatment storage and sewage of radioactive wastes by constructing and operating a radioactive waste plant in a selected site.
- Pursuant to Article 11 of the Regulation regarding Physical Protection of the Nuclear Plants and the Nuclear Substances¹⁵, approval by TAEK of the physical protection program prepared by the authorized operator is a precondition for activation of the nuclear plant.
- pursuant to Article 28 of the Regulation Concerning the Management Organization on the Research Reactors, Personnel Qualifications and Licenses of the Operator Personnel¹⁶, management chiefs and operators that will work in research reactors shall take operator license from TAEK;
- if applicable, heavy water loading permit, pursuant to Article 28 of Nuclear Licensing By-Law;

¹³ Published in the Official Gazette No. 25571 dated 2 September 2004.

¹⁴ Published in the Official Gazette No. 28582 dated 9 March 2013.

¹⁵ Published in the Official Gazette No. 28300 dated 22 May 2012.

¹⁶ Published in the Official Gazette No. 25973 dated 21 October 2005.

- if applicable, permit to work in limited capacity, pursuant to Article 33 of Nuclear Licensing By-Law;
- if applicable, permit to restart operation, pursuant to Article 54 of Nuclear Licensing By-Law;
- permit for the entry into and exit from the country of certain materials, pursuant to Article 15 of By-Law Concerning the Radiation Security¹⁷;
- transportation and transit passage permit, pursuant to Article 16 of By-Law Concerning the Radiation Security;
- export-import permit per each export, import or transport of radiation resources, pursuant to Article 61 of the Radiation Security Regulation; and
- export permit for radioactive substances, pursuant to Article 66 of the Radiation Security Regulation.
- pursuant to Article 5 of the Regulation regarding Decommissioning of the Nuclear Plants and Exclusion of the Site from Regulating Control¹⁸ consent of TAEK is sought for commencement of the decommissioning.
- procurement permit and manufacturer approval, pursuant to the Regulation Concerning the Nuclear Facility Equipment Procurement Process and Approval of the Manufacturers¹⁹.
- with respect to the surface rights, depending on the classification of the land, additional permits (such as forest, pasture, ministry land, agricultural land, protected area, etc.).

IV. Other Obligations of the Authorized Company

1. Fuel Supply

Pursuant to Article 21 of the Implementation Regulation, all responsibilities regarding the supply, reliability and cost of fuel required for the operation of the power plant shall lie on the Authorized Company.

2. Waste Management

The Nuclear Energy Law provides that a decommissioning fund and a national radiological waste fund shall be established. These funds shall be utilized to meet the costs associated with the construction, licensing and operation of the temporary and permanent waste storage facilities, transport and processing of the wastes, the research and development studies related to the nuclear waste management and the dismantling of the nuclear power plant.

The company which will operate the nuclear power plant is required to pay 0,15 cent/kWh to the decommissioning fund and the national radiological waste fund.

3. Decommissioning and Dismantling of the Power Plant

Pursuant to Article 23 of the Implementation Regulation, all responsibilities regarding the decommissioning and dismantling of the power plant at the end of the authorization term shall lie on the Authorized Company.

V. Current Status of the Nuclear Power Projects

1. Akkuyu Project

Construction of a nuclear power plant in Akkuyu has been on the agenda of the Government since 1974. However, all attempts for the Akkuyu nuclear power project failed in 1974, 1983, 1993 and 2000. The latest attempt for the Akkuyu project started with the tender of TETAS dated 24 March 2003. Only one bidder,

¹⁷ Published in the Official Gazette No. 18861 dated 7 September 1985.

¹⁸ Published in the Official Gazette No. 28582 dated 9 March 2013.

¹⁹ Published in the Official Gazette No. 29369 dated 28 May 2015.

namely the Atomstroyexport-Inter Rao-Park Teknik Group, submitted a bid and became the successful bidder. According to news reports, the bid submitted by this consortium was 21.16 US\$ cents per kWh.

Subsequent to the suspension of the implementation of certain provisions of the Implementation Regulation by the Supreme Administrative Court, TETAS cancelled the Akkuyu project tender in November 2009. The Turkish and Russian Governments then started the negotiations of an international treaty for a nuclear power plant construction and operation project in Akkuyu (the "Russia-Turkey Treaty"), which was signed on 12 May 2010 and published in the Official Gazette on 6 October 2010.

Main features of the Russian Turkey Treaty are as follows:

- The State Atomic Energy Corporation of the Russian Federation (Rosatom) shall establish the Project Company within 3 months from the signing date of the Treaty; i.e., by 28 September 2010.
- The Project Company shall be the owner of the power plant. The power plant shall consist of 4 units and the reactor type shall be AES-2006 model VVER-1200 nuclear reactors. The general contractor for the construction shall be Atomstroyexport.
- The ownership structure of the Project Company may change within time by mutual agreement of the parties, provided that the share of the Russian authorities shall never be less than 51%.
- Issues relating to the corporate governance of the Project Company, including but not limited to distribution of shares, form of shareholders investments, restrictions with respect to the transfer of shares and the funding mechanisms applicable to the Project Company and the Project shall be subject to the consent of the Turkish government with the purposes of protecting the national interests in issues of national security and economy.
- The Project Company, with the full support of the relevant Russian authorities, shall put into commercial operation the first unit of the power plant within 7 years from the issuance of all licenses and permits necessary to start the construction. The other 3 units shall be put into operation with 1 year intervals following the commercial operation date of the first unit.
- A Power Purchase Agreement ("PPA") shall be signed between the Project Company and TETAS. The term of such PPA shall not be less than 15 years starting from the commercial operation date of each unit. Through the PPA, TETAS shall purchase 70% of the electricity generated by the first and second units and 30% of the third and fourth units for 15 years from the commercial operation date of each unit for a weighted average price of 12.35 US\$ cents per kWh (not including value added tax). The remaining capacity shall be sold in the free market.
- The Parties agree that Turkish companies shall be widely employed by the contractor during the construction phase and Turkish citizens shall be employed for the operating needs of the power plant.
- The site of the power plant shall be allocated to the Project Company by the Turkish government free of charge. The Project Company shall obtain all necessary permits and licenses under the applicable Turkish legislation, including the ones explained in Section III above.
- With respect to the financing of the project, the Russian party shall provide Atomstroyexport with financing on preferential terms for purchasing goods, works and services of Russian origin.

The project company has been granted with a preliminary license for 36 months as of 25 June 2015 and the preliminary licensing period is currently ongoing.

2. Sinop Project

According to news reports, an international treaty has been signed between Turkish and Japanese Governments on 3 May 2013 and the project is to be realized by Mitsubishi Heavy Industries (MHI)-GDF Suez-Itochu consortium. The Sinop Project is at the preparation stage and works on the geological report, feasibility, environmental impact assessment report information gathering are still continuing.

3. Third Nuclear Power Plant Project

Turkey is planning to develop and construct a four-unit nuclear power plant in northern area of İğneada, Kırıkkale, which is a small town approximately 200 kilometers away from Istanbul. Enerji Üretim Anonim Şirketi, a state-owned electricity generation company in Turkey, signed a memorandum of understanding with the State Nuclear Power Technology Corporation of China and Westinghouse Electric Company LLC to begin exclusive negotiations. In addition, Turkish Parliament has recently approved the ratification of the Agreement Concerning Usage of the Nuclear Energy for Peaceful Purposes between the Governments of Turkish Republic and Republic of China, which was signed on 9 April 2012. Negotiation between the relevant parties and the studies to develop the project are ongoing.

VI. Concluding Remarks

All attempts by the Government since 1960, 1968, 1974, 1998 and 2000 for the construction of a nuclear power plant, such as Akkuyu and Sinop, have failed. The latest attempt in 2007, which was unique in the regard that it was the first time such an attempt was formulated by means of a special law (namely, the Nuclear Energy Law), has also failed with the cancellation of the Akkuyu project tender by TETAS in November 2009. Although the Nuclear Energy Law is in force for approximately 9 years now and a tender has already been issued thereunder, the current position of the Turkish government is to develop nuclear power projects under bilateral inter-governmental treaties, i.e., subject to a special legal regime that consists of both references to the Nuclear Energy Law for certain issues and with specific treaty provisions differing from the Nuclear Energy Law on certain other points as explained above.

As a criticism of the current nuclear legislation, under both the Russian-Turkey Treaty and the Nuclear Energy Law, various authorities such as the Council of Ministers, MENR, TAEK and EMRA, are empowered with the supervision and regulation authorities in the nuclear energy sector. For example, the authority to determine the principles and procedures for the selection of the authorized company rests with the Council of Ministers, while the authority to prepare and conduct the selection process of the authorized company is granted to MENR under the Nuclear Energy Law. On the other hand, TAEK will be the regulatory authority in the nuclear energy sector. EMRA, which is the regulatory authority in the electricity, natural gas, petroleum, LNG and renewable energy sectors, will not have any regulation or supervision authority with regard to nuclear power plant operators. Moreover, the Nuclear Energy Law envisages TAEK to be replaced by another public authority to be established in the future; the regulation and supervision authorities of TAEK are of a temporary nature. We believe that a better approach would be to authorize EMRA, which is the independent regulatory authority in the energy sectors, to act as the only competent authority implementing the Nuclear Energy Law, since the authorization of two public authorities (i.e., TAEK and its future replacement, and EMRA) in the same field of activities is likely to create cross-authority problems which may lessen, in practice, the benefits envisaged by the Nuclear Energy Law and the Russian-Turkey Treaty.

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