

EUROPEAN ENERGY HANDBOOK

A SURVEY OF THE LEGAL FRAMEWORK AND CURRENT ISSUES IN THE EUROPEAN ENERGY SECTOR

LEGAL GUIDE TWELFTH EDITION

2023 - 2024





Foreword

Welcome to the 2023/2024 edition of the European Energy Handbook!

I am delighted to introduce the 2023/2024 edition of "The European Energy Handbook", which provides an in-depth survey of current issues in the energy sector in 41 jurisdictions.

This year's edition focuses on recent legal and commercial developments within these jurisdictions and, for the EU as a whole, covers issues such as the REPower EU strategy, which, following Russia's invasion of Ukraine, the EU introduced with the aim of reducing the EU's dependence on Russian fossil fuels. This edition also covers other developments in EU energy policy and strategy, such as the EU's adoption of the European Green Deal, a package of concrete policy initiatives aimed at achieving net zero greenhouse gas emissions in the EU by 2050, Fit for 55, which is a set of proposals revising and updating EU legislation that aims to ensure the EU reaches its intermediate targets for 2030, and the revision of the design of the EU electricity market.

Climate change, the energy transition and associated challenges continue to be strong themes in nearly all of the contributions of this edition – as each jurisdiction strives to meet its EU renewable energy obligations by 2030 and beyond. Other topics in this edition include the ever increasing importance for the role of electricity storage in the energy mix, the more evident progress of privatisations in some jurisdictions, the development and construction of new electricity interconnectors and the emergence of multi-purpose interconnectors to enable the multi-jurisdictional connections of offshore wind projects, the growth in investment in alternative renewable sources such as hydrogen, and the ever increasing importance in the consideration of environmental, social and governance obligations in the energy world.

As always, I am grateful to the colleagues across Europe who have contributed to this edition:

In addition to contributions for the European Union, Belgium, France, Germany, Ireland, Italy, Spain, and the United Kingdom from our own offices, this year we have contributions from Schönherr (Austria, Bulgaria, Croatia, Czech Republic, Hungary, Moldova, Montenegro, Romania, Serbia, Slovakia and Slovenia), Loloci & Associates (Albania), Georgiades & Pelides LLC (Cyprus), BOPA Law (Denmark), Ellex Raidla (Estonia), Roschier (Finland), Kyriakides Georgopoulos (Greece), BBA//Fjeldco (Iceland), Meitar Liquornik Geva Leshem Tal Law Offices (Israel), Kinstellar (Kazakhstan), Cobalt (Latvia and Lithuania), Arendt & Medernach (Luxembourg), Zammit Pace Advocates (Malta), Houthoff (the Netherlands), Karanovic & Partners (North Macedonia), Arntzen de Besche Advokatfirma AS (Norway), WKB Wierciński, Kwieciński, Baehr (Poland), Campos Ferreira, Sá Carneiro & Associados (Portugal), Setterwalls (Sweden), Schellenberg Wittmer AG (Switzerland), Kolcuoğlu Demirkan Koçaklı (Turkey), and Avellum (Ukraine).

Finally, special thanks are due to Barbara McNulty and Jesse Bakare who have worked tirelessly to make this edition of the European Energy Handbook a reality and without whom this project would not have been possible.

Happy reading and best wishes,

Silke Goldberg

Partner, Herbert Smith Freehills LLP July 2023



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Energy law in Turkey

Recent developments in the Turkish energy market

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Turkey's energy and natural resources strategy is enshrined in Turkey's National Energy Plan ("TNEP") for 2023-2035, published by the Ministry of Energy and Natural Resources ("MENR"). According to the scenario in the TNEP for the period between 2023-2035:

- the primary energy consumption will increase to 205.3Mtoe in Turkey;
- the electricity consumption will reach 510.4TWh;
- the installed electricity capacity will increase to 189.7GW (52.9GW of solar, 29.6GW of wind and 7.2 of nuclear);
- the capacity expected to be commissioned will be 96.9GW;
- the share of intermittent renewable energy resources in the electricity generation will increase to 34.2% and the share of renewable energy resources will increase to 54.7%; and
- the share of intermittent energy resources in the installed electricity generation capacity will increase to 43.5% and the share of renewable energy resources will increase to 64.7%.

According to TNEP, the MENR plans to increase installed capacity of renewable energy sources to:

- 29.6GW for wind (24.6GW of onshore and 5GW of offshore);
- 52.9GW for solar;
- 35.1GW for hydro; and
- 5.1GW for geothermal and biomass by 2035.

The TNEP reiterates Turkey's intention to reach net zero emissions by 2053, in line with the EU policies to become climate-neutral by 2050.

Significant legislative developments

Changes to unlicensed electricity regulation

In May 2019, principles applicable to the unlicensed electricity market were amended to facilitate establishment of unlicensed energy facilities for individual consumption. The amendments were introduced by (i) the Presidential Decree dated 10 May 2019, which amended the Council of Ministers Decree on the Fees and Periods Applicable to Generation Facilities based on Renewable Resources and Local Content Addition dated 18 November 2013, and (ii) the new Regulation on Unlicensed Electricity Generation in the Electricity Market dated 12 May 2019 ("New Unlicensed Electricity Regulation"), which abolished the previous Regulation on Unlicensed Electricity Generation in the Electricity Market dated 2 October 2013 ("Abolished Unlicensed Electricity Regulation"). The changes are mainly aimed to facilitate self-consumption, by promoting electricity generation from small sized power plants without a licence requirement.

Accordingly, the upper limit for renewable energy-based generation facilities' installed capacity which are exempt from obtaining a licence and/or incorporating a company, has been increased from 1MW to 5MW. The New Unlicensed Electricity Regulation also introduced significant changes regarding connection principles. Under the New Unlicensed Electricity Regulation, solar or wind power-based unlicensed generation facilities' installed capacity can be up to the power capacity specified in the connection agreement of the consumption facility associated with the relevant unlicensed generation facility.

In addition to the new Unlicensed Electricity Regulation, the recent amendments to the Electricity Market Law abolished the approval requirement regarding direct and indirect shareholding and control changes of electricity generation licence holders.

On 22 December 2022, the Electricity Market Law introduced a new market activity, ie aggregation. The legal entities that have an aggregation license or supply license can combine multiple customer loads or generated electricity for sale or purchase. This activity will enable these customers to negotiate competitive electricity prices.

New principles for the renewable energy resource support mechanism

The Turkish Renewable Energy Resources Support Mechanism ("RERSM"), which the general public opinion considers to be a successful scheme to promote investments for renewable energy sources, is regulated by the Renewable Energy Resources Law ("RER Law"). On 2 December 2020, the law amending the Electricity Market Law and certain other laws was published in the Official Gazette ("Amendment Law"). The Amendment Law amended the RER Law (amongst others) and envisaged important changes regarding the RERSM.

Under the revised RERSM, renewable energy-based generation facilities commissioned before 30 June 2021 are permitted a feed-in tariff based on US\$ with a purchase guarantee period of ten years following the commissioning date, as well as additional incentives for use of domestically manufactured equipment, based on US\$ for five years. RERSM is applicable to generation facilities to be commissioned after 30 June 2021, however, are governed by the Presidential Decree dated 29 January 2021 ("Presidential Decree"). Under the Presidential Decree, generation facilities starting their operations after 30 June 2021 are entitled to (i) a feed-in tariff based on TRY for ten years, which is adjusted on a quarterly basis based on the inflation and FX rates which are subject to pre-determined monetary caps in terms of US\$ and (ii) incentives for use of domestically manufactured equipment, based on TRY for five years.

Compared to the US\$ based feed-in tariffs applicable to generation facilities commissioned before 30 June 2021, the TRY based feed-in tariffs under the new RERSM have resulted in a decrease of value due to the devaluation of TRY over US\$. It is expected that with such a decrease of feed-in tariffs to be applied to renewable energy generators, Turkish banks' approach towards providing loans for renewable energy investments (eg green bonds) may be affected negatively.

Introduction of the electricity storage facilities regulation

In January 2021, Energy Market Regulatory Authority ("EMRA") published a draft regulation regarding electricity storage activities and requested opinions of the electricity market stakeholders regarding the draft regulation. Subsequently, the Electricity Market Storage Activities Regulation ("Storage Regulation") was published in the Official Gazette dated 9 May 2021.

Among several developments introduced by the Storage Regulation, the most significant is the possible integration of storage facilities with generation and consumption facilities. The Storage Regulation allows companies to build storage facilities within their power plants or consumption facilities, without a separate licence requirement. The Storage Regulation also allows supply licence holders to establish autonomous storage facilities (ie storage facilities without any integration to a generation or consumption facility), provided that their installed capacity is higher than 2MW.

These incentives are expected to entice market players to build more storage facilities to escalate the efficient use of their generated electricity and pave the way for the integration of storage facilities into the power grid.

Amendments to Energy Performance of Buildings Regulation

On 19 February 2022, the Energy Performance of Buildings Regulation was amended. Under this recently introduced amendment, for the period between 1 January 2023 and 1 January 2025, buildings having a construction area of 5,000 m² must be built as nearly zero-emission buildings and at least 5% of their primary energy use must be from renewable sources. After 1 January 2025, these requirements will apply to buildings having a construction area of 2,000 m² and the 5% threshold will be increased to 10%. This was a welcomed step for energy efficiency in Turkey.

Recent deals

Recent privatisations and privatisation news

Since 2013, Turkey has been privatising its electricity generation assets owned by Elektrik Üretim Anonim Şirketi ("EÜAŞ") and has also privatised all of its state-owned electricity distribution companies.

The number of privatised power generation assets has significantly decreased since 2019 when compared to the period between 2013 and 2019. In 2020, only one privatization took place regarding two small hydro-power plants with a total capacity of 4MW.¹ However, the number of privatisations increased in 2021 with seven completed tenders (six hydro power plants and one gas-fired power plant)², but it significantly decreased in 2022 with only one privatisation.³

In addition, under the Presidential Decision dated 2 July 2021, TEİAŞ is included in the privatisation programme. TEİAŞ's privatisation was aimed to be completed by the end of 2022 through a public offering, however the privatisation process is not yet completed.

Private deals

In 2022, the total value of 31 energy deals was estimated to be US\$ 2 billion, 4 marking a 29% drop from US\$ 2.8 billion generated by 40 deals in 2021. 5 This indicates an increase from the total value of energy deals in 2020, which was US\$ 1.1 billion with a total of 22 transactions. 6 Even though the deal market slightly repaired in 2021, Turkey's energy sector has not been attracting as many investors as in recent years.

The most significant energy deals during recent years were carried out by OYAK, Turkey's largest occupational pension fund. In 2020, OYAK acquired Guzel Enerji (TOTAL Oil Türkiye) and M Oil from Demirören Holding and acquired an estimated share of 6% in the fuel retail market. Subsequently, OYAK acquired Milangaz, also from Demirören Holding, which is the fifth largest liquefied petroleum gas (LPG) distributor in Turkey, with an estimated market share of 8.6% in 2019.⁷

Notably, in 2021 and 2022, most of the energy deals involved the acquisition of renewable energy companies. With Turkey's recent ratification of the Paris Agreement, more investors may be interested in renewable energy deals in Turkey in the upcoming years.

Other significant market developments

Trans-Anatolian Natural Gas Pipeline ("TANAP") and TurkStream Natural Gas Pipeline ("TurkStream")

2020 and 2021 witnessed two important developments in the transit of natural gas through Turkey. Natural gas flow from Azerbaijan to Europe through TANAP and the Trans-Adriatic Pipeline ("TAP") commenced at the end of 2020. TANAP has an initial capacity of 16 billion cubic metres ("bcm") per year. Only 6bcm of this capacity has been allocated to the delivery of natural gas to Turkey and the remaining 10bcm is to be used for delivery of gas to Europe. TANAP's capacity is capable of being increased to 31bcm per year.

In addition to TANAP, gas flow through the TurkStream commenced in early 2020. TurkStream transports natural gas from Russia, across an offshore section under the Black Sea to Turkey and from Turkey to Europe through Bulgaria. The capacity of the TurkStream's two lines is 31.5bcm per year. These developments are of particular importance for Turkey's goal to become a regional energy hub as well as for Turkey's security of natural gas supply. Coupled with investments in natural gas storage facilities (the expansion of one of Turkey's two underground natural gas storage facilities' capacity to 5.4bcm per year and the commissioning of floating storage and re-gasification units) and investments in the transmission network, Turkey continues to strengthen its natural gas infrastructure.

With the abandonment of Nord Stream 2 pipeline in 2022 due to Russia's invasion of Ukraine, TANAP became more important, not only for Turkey's local supply, but also for the supply security of EU countries.

Natural gas discoveries in the Black Sea

One of the actions to be taken under the MENR's Strategic Plan for 2019-2023 was to conduct exploratory drilling activities in the Mediterranean Sea and in the Black Sea. The exploratory drilling activities in the Mediterranean Sea have raised tensions between Turkey and the members of the EU. In 2020, however, the Turkish President announced that its drill ship discovered 405bcm of natural gas in the Black Sea, marking Turkey's largest gas find. The natural gas discoveries in the Black Sea continued in 2021 and 2022. In December 2022, the Turkish President announced that the total natural gas amount discovered in the Black Sea is 710bcm. In November 2022, the Minister of Energy and Natural Resources announced that the natural gas explored in the Black Sea is intended to be integrated into Turkey's natural gas transmission system in March 2023. However, the feasibility of this timing remains to be tested.

YEK-G, Turkey's green certificate

Until 2021, the only renewable energy certificate scheme available in Turkey was the International Renewable Energy Certificate ("I-REC") scheme. EMRA then introduced the Renewable Energy Guarantee of Origin ("YEK-G") scheme. The legal framework governing the YEK-G scheme entered into force on 1 June 2021 and the first day of trading was 21 June 2021. The system is similar to the I-REC scheme. In the YEK-G scheme, the Turkish energy market operator, EPİAŞ, issues the YEK-G certificates. Owners of electricity generation facilities can register their facilities with the YEK-G system (if not already registered with the I-REC system). The YEK-G certificates are traded in the YEK-G market. The participants of this market are the generators of renewable electricity and suppliers, and they redeem the YEK-G certificates. Accordingly, end-users can purchase the YEK-G certificates by approaching participants.

Towards a national hydrogen strategy

Turkey has been developing its national hydrogen strategy since 2021. Accordingly, the MENR had already assigned the duty to test mixing hydrogen with natural gas in the distribution grid to the Turkey Natural Gas Distributors Association (GAZBIR), the natural gas distribution companies' association. Blending natural gas with other cleaner fuels such as hydrogen and integrating it into the existing natural gas grid is also set out as one of the main goals under TNEP.

On 19 January 2023, the MENR published Turkey's Hydrogen Technology Strategy and Roadmap (TNEP). At the launch of TNEP, the Minister of Energy and Natural Resources announced that (i) the green hydrogen obtained by using renewable energy sources through the electrolysis of water will be crucial for Turkey's net zero emission target, (ii) previous tests on mixing hydrogen with natural gas yielded successful results and further tests are ongoing, (iii) between 2030 and 2053, the mix ratio of hydrogen to natural gas is aimed to increase to 12%, and (iv) an incentive mechanism will be introduced for the use of the local hydrogen mixture grid.

If the required investments are made and 'green' hydrogen is produced in Turkey, energy experts believe that this green hydrogen can be exported to Europe as blended gas or pure hydrogen through TAP and the Turkey-Greece or Turkey-Bulgaria Interconnectors.

Ratification of the Paris Agreement

Turkey had signed the Paris Agreement in 2016 but not ratified it until recently. However, on 7 October 2021, Turkey completed the procedure for the ratification of the Paris Agreement under Turkish law. Turkey is currently listed under Annex I. Annex I includes the industrialized countries that were members of the OECD (Organisation for Economic Co-operation and Development) in 1992, plus countries with economies in transition (the EIT Parties), including the Russian Federation, the Baltic States, and several Central and Eastern European States. Turkey had submitted a proposal to be removed from Annex I at the 26th Session of the Conference of the Parties held in Glasgow, United Kingdom, but later withdrew this proposal.

Turkey's First EV

In 2018, Turkey set the goal to manufacture its own EV: TOGG. Mass manufacturing started in October 2022 and sales are expected to commence in February 2023.

Endnotes

- 1. PwC Energy Deals 2020, available at www.pwc.com.tr/tr/sektorler/enerji/turkiye-enerji-sektorundeki-birlesme-ve-satin-almalar-2020.pdf.
- 2. PwC Energy Deals 2021, available at www.pwc.com.tr/tr/sektorler/enerji/enerji-sektorundeki-birlesme-ve-satin-almalar-2021-final.pdf.
- 3. PwC Energy Deals 2022, available www.pwc.com.tr/tr/sektorler/enerji/enerji-sektorundeki-birlesme-ve-satin-almalar-2022.pdf.
- **4.** Ibid.
- 5. PwC Energy Deals 2021, available at www.pwc.com.tr/tr/sektorler/enerji/enerji-sektorundeki-birlesme-ve-satin-almalar-2021-final.pdf.
- 6. PwC Energy Deals 2020, available at www.pwc.com.tr/tr/sektorler/enerji/turkiye-enerji-sektorundeki-birlesme-ve-satin-almalar-2020.pdf.
- 7. PwC Energy Deals 2020, available at www.pwc.com.tr/tr/sektorler/enerji/turkiye-enerji-sektorundeki-birlesme-ve-satin-almalar-2020.pdf.

Overview of the legal and regulatory framework in Turkey

A. Electricity

A.1 Industry structure

Nature of the market

Turkey's liberalisation process began in 2001 and the electricity market is now partly liberalised. The liberalisation continues progressively, and electricity generation, distribution and supply activities are now carried out by both private and state-owned companies.

The Turkish state generation entity Elektrik Üretim AŞ ("EÜAŞ") continues to have an important role in the electricity generation market as the owner and operator of all the transmission facilities. However, the role of private entities has rapidly increased, both through privatisations as well as new facilities. As of November 2022, 68% of Turkey's total installed electricity capacity is owned by private entities, while EÜAŞ retains the remaining 32%, either directly or through contractual rights.¹

The distribution network is divided into 21 regions, with a different distribution company in each, all of which have been privatised. The state distribution entity Türkiye Elektrik Dağıtım AŞ ("TEDAŞ") does not directly operate any distribution companies but owns their shares.

The State transmission entity Türkiye Elektrik İletim AŞ ("TEİAŞ") conducts all of Turkey's transmission activities. Under the Presidential Decision dated 2 July 2021, TEİAŞ is included in the privatisation programme. The process for TEİAŞ's privatisation is still pending.

Key market players

In addition to private companies, there are three state-owned companies active in the electricity market:

- EÜAŞ, the state generation entity;
- TEİAŞ, the state transmission entity; and
- TEDAŞ, the state distribution entity.

Regulatory authorities

The Ministry of Energy and Natural Resources ("MENR") is responsible for preparing and implementing energy policies, plans, and programmes in coordination with its affiliated institutions. Under the support of the MENR, the Energy Market Regulatory Authority ("EMRA") is the competent administrative and regulatory authority overseeing the electricity market. EMRA's powers and duties include:

- · issuing licences;
- setting, amending, enforcing, and supervising regulations on performance standards;

- · distribution of power and customer services;
- · setting out pricing principles; and
- maintaining the development and performance of infrastructure for implementation of new power trading and sales methods.

Legal framework

The Electricity Market Law ("EML") and the Electricity Market Licence Regulation ("Licence Regulation") are the primary pieces of legislation governing the electricity market, which entered into force on 30 March 2013 and 2 November 2013, respectively.

Since their enactment in 2013, both the EML and the Licence Regulation have been amended a number of times. The most recent amendments to both the EML and the Licence Regulation were made in 2022.

Implementation of EU electricity directives

Turkey has taken considerable steps in fulfilling the unbundling requirements set out in the Third Electricity Directive. On 12 September 2012, EMRA adopted Resolution No. 4019, separating the operations of companies with a distribution licence for distribution systems and retail sales. This ensures that distribution and retail operations are conducted by separate legal entities. In addition, in September 2012, EMRA introduced the Procedures and Principles concerning the Legal Unbundling of Distribution Systems and Retail Sales, which required the distribution utilities to establish a separate company for retail sale activities and obtain a separate retail sales licence from EMRA.

Shareholders of distribution utilities can own the shares of the newly established retail sales utilities. However, as of 1 January 2016, distribution utilities cannot purchase administrative and support services from companies under the parent company's control.

In addition, Turkey has been making progress in aligning its electricity market with EU directives, particularly in the fields of supply security and energy efficiency. TEİAŞ was an observer at the ENTSO-E, which allowed market players to freely import and export electricity between the EU countries and Turkey. The EU Commission's 2022 Turkey report states that "although the Turkish Electricity Transmission System Operator's (TEIAŞ) observer membership of the European Network of Transmission System Operators for Electricity (ENTSO-E) was not renewed, TEIAŞ continued to be present in technical discussions of relevant working groups."²

A.2 Third party access regime

TEİAŞ conducts all transmission activities in Turkey and the 21 distribution companies conduct the distribution activities in their respective regions. The details for connecting to the transmission and distribution systems, as well as the usage of this system and interconnections, are regulated under the Regulation on the Electricity Market Connection to and Use of the System ("System Connection and Use Regulation") and the Electricity Market Grid Regulation. As per the System Connection and Use Regulation, third parties must first go through a pre-licensing stage where EMRA requests a positive opinion from TEİAŞ or the relevant distribution licence holder for connecting into and usage of the system.

Once the preliminary licence is issued, the licence holder and TEİAŞ and/or the distribution licence holder must conclude connection and system usage agreements. The System Connection and Use Regulation regulates the principles regarding connection to and use of the system. The Electricity Market Tariff Regulation ("Tariff Regulation") regulates the terms and conditions regarding the applicable tariffs for connection to and use of the system. The System Connection and Use Regulation has been amended ten times since it entered into force on 28 January 2014. One of the amendments to the System Connection and Use Regulation is that the connection and system usage agreements cannot be concluded prior to obtaining the generation licence.

A.3 Market design

Turkey has taken significant steps on privatisation and the electricity market is now partly liberalised; however, some milestones are still yet to be achieved to reach full liberalisation (see section A.1).

A.4 Tariff regulation

The Tariff Regulation exhaustively lists the tariffs to be set by EMRA (eg transmission tariff, distribution tariff, retail sale tariff, and last resort supply tariff). EMRA announces the applicable tariffs on a quarterly basis, which are calculated based on the relevant service costs and in line with several income parameters. The retail sales tariff applies to the sale of electricity to non-eligible consumers and the last resort supply tariff applies to the sale of electricity to eligible consumers who did not choose their electricity supplier.

With the exception of the tariffs exhaustively listed under the Tariff Regulation, the EML states that individuals and legal entities can freely determine the prices in the bilateral agreements in relation to sale and purchase of electricity and/or capacity.

A.5 Market entry

Licensing regime

The Licence Regulation regulates the following market activities:

- generation (coal, hydro, geothermal, wind, solar, hydraulic, biomass, biogas, wave, current and tidal energy sources);
- transmission;
- distribution;
- wholesale and retail;

- trade;
- import and export;
- energy exchange; and
- aggregation (which was introduced in 2022).

Companies must obtain a licence from EMRA to conduct any of these activities. Companies must obtain separate licences for each electricity market activity. In addition, the Licence Regulation does not stipulate a licensing requirement for storage activities, but states that storage activities may be specified under the companies' generation or supply licences.

Under the Licence Regulation, in order to conduct electricity generation activities, companies must obtain a generation licence from EMRA. Only limited liability partnerships and joint stock corporations established in Turkey can obtain electricity generation licences. There are no restrictions on foreign shareholding in electricity market companies in Turkey.

Obtaining a preliminary licence is a prerequisite for obtaining a generation licence for applicants. A preliminary licence is issued for a specific term, to those having submitted an application to EMRA to conduct electricity generation activities. The purpose of the preliminary licence is to enable the applicant to obtain the necessary permits, approvals, and licences, as well as to acquire ownership or usufruct rights to the land where the generation facility is to be located, during the application's evaluation. The Licence Regulation determines the detailed requirements of the regulatory approval process to obtain a preliminary licence and generation licence. EMRA determines the information and documents to be submitted when applying for a preliminary licence. The Licence Regulation sets out that the term of a preliminary licence will be determined by EMRA, depending on source type and installed capacity. This term cannot exceed 36 months unless a force majeure event occurs.

The recent amendments to the Licence Regulation separates preliminary licence applications for RERA from those made by other entities generating electricity. Under the Licence Regulation, the generation licences are granted for a term of ten to 49 years. However, there is no time limitation as to the term of generation licences granted for RERA.

The EML defines the market activities that may be conducted without a licence. For instance, RES based generation facilities with an installed capacity of up to 5MW are exempt from the requirement of obtaining a licence.

On 12 May 2019, EMRA introduced the Regulation on Unlicensed Electricity Generation ("Unlicensed Generation Regulation"), which abolished the previous regulation on unlicensed electricity generation that had come into force on 2 October 2013. EMRA reported that the ultimate purpose of introducing the Unlicensed Generation Regulation is to promote the construction of energy facilities for individual consumption. Under the Unlicensed Generation Regulation, the previous requirement to incorporate a legal entity before establishing a power plant is abolished, enabling individuals to operate in the market directly.

Licence transfers/change of control situations

Generally, licence transfers are not permitted under the Licence Regulation. However, with approval from EMRA, legal entities with an electricity generation licence are permitted to transfer rights and obligations related to their licences to another legal entity by way of merger or spin-off, and to another legal entity established under the same shareholding structure. Additionally, legal entities with an electricity generation licence may transfer the generation facility to another legal entity seeking to conduct electricity generation activities, by way of sale, transfer, or lease, subject to EMRA's approval. Correspondingly, the legal entity acquiring the generation facility must obtain a new generation licence from EMRA. In addition to these transactions, the Licence Regulation grants a step-in right to banks and financial institutions that provide loans to licence holders, allowing them to request licence transfers to third parties from EMRA. The proposed transferee will undertake all obligations of the former licence holder under the relevant licence.

The following are not considered licence transfers:

- transfers to another legal entity established under the same shareholding structure;
- transfers by legal entities holding an electricity generation licence transferring the generation facility to another legal entity seeking to conduct electricity generation activities, by way of sale, transfer, or lease; and
- transactions relating to project financing allow the transferee to obtain a generation licence that maintains the terms and conditions of the former licence.

The Licence Regulation also sets out certain share transfer restrictions. Under the EML and Licence Regulation, direct or indirect changes in shareholding structure and/or share transfers (aside from certain exceptions set out under the Licence Regulation) are not permitted within the preliminary licence period. EMRA will cancel a preliminary licence if such a transaction occurs.

However, Article 57 of the Licence Regulation, which was amended many times following its entry into force, sets out certain exceptions to the share transfer restrictions with respect to the preliminary licence period.

A.6 Public service obligations, smart metering and electric vehicles

Public service obligations (PSOs)

Under the EML, the distribution companies are responsible for lighting of public spaces and making the necessary investments to such effect, as well as the installation and operation of the metering systems throughout the respective distribution region. Until 31 December 2025, expenses arising from the lighting of public spaces will be covered by the MENR and the respective municipality and province.

Smart metering

Within the scope of the "Turkey Smart Grid 2023 Vision and Strategy Roadmap Summary Report", published by the Association of Distribution System Operators (ELDER) and EMRA³, Turkey aims to set up a nation-wide smart metering infrastructure, which is expected to cover at least 80% of the distributed electricity in the country by 2025. These smart

meters measure the use of electricity on a three-phase basis, based on specific time intervals. To promote smart metering, EMRA obliged distribution companies to submit a cost-benefit analysis and conduct pilot schemes in pre-determined regions of Turkey between 2018 and 2020.

Electric vehicles

The Turkish tax legislation promotes electric vehicles ("EVs"). Motor vehicle tax ("MVT") is applicable to EVs in Turkey, however, the amount of MVT to be paid for an EV equates to a quarter of the MVT to be paid for a car with an internal combustion engine. From 2020 to date, EVs held an advantage in terms of a special consumption tax. However, an import tax at the rate of 20% was imposed on EVs in 2022.

In 2021, e-scooter usage in Turkey was regulated for the first time when the Ministry of Transportation and Infrastructure, the Ministry of Environment and Urbanisation ("MEU"), and the Ministry of Internal Affairs published the Electronic Scooter Regulation on 14 April 2021.

In 2018, Turkey set the goal to manufacture its own EV brand: TOGG. Mass manufacturing started in October 2022 and sales are expected to commence in February 2023.

A.7 Cross-border interconnectors

The EML and the Electricity Market Import and Export Regulation ("Export/Import Regulation") set out the principles and procedures for electricity import and/or export, and the principles pertaining to allocation and use of interconnection capacity for cross border trade in the electricity market. Under the Export/Import Regulation, electricity import, and/or export from or to countries that meet the international interconnection condition can be conducted by the following entities, subject to certain conditions and EMRA's approval:

- private companies holding supply licences;
- EÜAŞ (ie the state-owned electricity generation entity); and
- companies holding a generation licence, only up to the total installed capacity (only export activities).

On 18 September 2010, a trial run was carried out for the synchronous parallel connection of the Turkish National Electricity System (operated by TEİAŞ) to the Continental Europe Synchronous Area. In April 2015, TEİAŞ became an observer member after Turkey's successful synchronisation with the ENTSO-E Continental Europe Region. TEİAŞ signed a long-term agreement for a permanent connection to the continental European grid, following the trial period that began in September 2010. TEİAŞ was an observer member of the ENTSO-E. Although TEİAŞ's application to continue as an observer member was not approved, TEİAŞ continues to be present in technical discussions of the relevant working groups. In recent years, Turkey expended its capacity of electricity interconnections with Bulgaria and Greece.

In addition to EU Member States, Turkey currently has electricity transmission interconnections with Georgia, Azerbaijan, Armenia, Iran, Iraq, and Syria. According to EMRA data, Turkey's main electricity imports are from Georgia and Bulgaria.

B. Oil and gas

B.1 Industry structure

Oil

Nature of the market

The Petroleum Markets were liberalised following the introduction of the Petroleum Market Law ("PML") in 2003 and the Liquefied Petroleum Gas Market Law ("LPG Market Law") in 2005.

Key market players

Türkiye Petrol Rafinerileri AŞ ("TÜPRAŞ") is the key importer of crude oil and petroleum products. According to the EMRA Petroleum Market Sector Report, in 2021 TÜPRAŞ and STAR Rafineri AŞ ("STAR"), a SOCAR company, imported 54.87% and 22.58% of the crude oil and petroleum products imported to Turkey, respectively. TÜPRAŞ and STAR are followed by the two petroleum market distribution licence holders Petrol Ofisi AŞ (5.18%) and Opet Petrolcülük AŞ (5.16%).

Moreover, with reference to their shares in the domestic sale of petroleum products, Petrol Ofisi AŞ (23.09%), Opet Petrolcülük AŞ (17.89%), Shell & Turcas Petrol AŞ (16.77%), BP Petrolleri AŞ (7.58%), and Güzel Enerji Akaryakıt AŞ (Total's licensee in Turkey) (6.37%) are the key players in the petroleum market in Turkey.⁵

Regulatory authorities

Under the PML and LPG Market Law, EMRA is the competent regulatory authority for the Petroleum Markets. EMRA's duties regarding the Petroleum Markets include preparation of regulations and pricing principles, licensing of facilities and activities, inspection of these facilities and activities, and enforcement of compliance with these regulations.

Legal framework

The PML and the LPG Market Law govern downstream petroleum and LPG market activities ("Petroleum Markets").

Smuggled and illegal fuel had been creating a significant issue, and tackling this issue was one of the main reasons for the enactment of the PML and LPG Market Law, and the regulations set by EMRA. To this end, the PML and LPG Market Law both have a licence requirement per facility for all activities in the Petroleum Markets. The types of licence are refining, processing, lubricant production, storage, transmission, eligible consumer, bunker delivery, distribution, transportation, and dealership.

The PML also requires refineries and importers to use a specific chemical, called National Marker, for diesel and gasoline. Additionally, distribution companies must install automated technology to monitor pump sales and regularly notify these metrics to EMRA. These key regulatory requirements have been successful in effectively preventing smuggled and illegal fuel in Turkey.

Other significant issues in the Petroleum Markets relate to competition restrictions and the typical retail ownership model in Turkey. Under the PML, a dealership agreement between a distribution company and a dealer must be an exclusive agreement. Under the Turkish Competition Board's communiqués, the term of an exclusive dealership agreement

cannot exceed five years. This results in a five-year renewal cycle of dealership agreements, which supports competition among the distribution companies in the dealers' favour. In addition, the PML provides that sales made by a distributor through the stations operated by it under a dealership licence cannot exceed 15% of the distributor's own local market share, and the distributor's total local market share cannot exceed 45% of the total local market. The LPG Market Law does not restrict sales made by a distributor through the stations operated by the distributor; however, it provides that the distributor's total local market share cannot exceed 45% of the total local market. The market shares of the key distributors in the Petroleum Markets are well below 45%. According to the EMRA sector reports of 2021, the largest market shares were 23.09% for Petrol Ofisi AŞ and 17.89% for Opet Petrolcülük AŞ in the petroleum market and 25.35% for Aygaz AŞ, 11.48% for Petrol Ofisi AŞ and 10.40% for İpragaz AŞ in the LPG market.

The typical retail station structure in the Turkish market is the Dealer Owned Dealer Operated ("DODO") model. Under the DODO model, the dealer owns/has rights over the real estate under a lease agreement or a usufruct agreement. However, the dealer provides rights over the real estate to the distributor under a lease agreement or a usufruct agreement. This is for the purpose of leverage for the distributor against contractual breaches by the dealer. However, this leverage is limited in time. In parallel with the maximum term of the exclusive dealership agreements under Turkish competition law, the Turkish Competition Board's communiqués state that the term of these lease agreements or usufruct agreements cannot exceed five years, which results in a five-year renewal cycle for stations operated under the DODO model.

Gas

Nature of the market

Due to insufficient natural gas sources, Turkey depends on imports of gas. Natural gas is imported from the Russian Federation, Azerbaijan, and Iran through pipelines. In addition, liquefied natural gas is imported ("LNG") from Nigeria and Algeria under long-term agreements and spot LNG is imported from several countries under agreements of less than one year.

Key market players

With the enactment of the Natural Gas Market Law ("NGML") in 2001, the Petroleum Pipeline Corporation ("BOTAŞ") lost its monopoly rights on natural gas imports, distribution, and sales. However, BOTAŞ remains the key player in the market, as it owns and operates the gas transmission network and has always imported more than 80% of the natural gas imported to Turkey. According to the EMRA Natural Gas Sector Report, in 2021, BOTAŞ imported 93.42% of the natural gas imported to Turkey, which indicates, in contradiction with the NGML's purpose, an increase in BOTAŞ's share in the import in recent years. In addition, although the NGML stipulated that BOTAŞ was to be unbundled starting from 2009, BOTAŞ has not been divided into separate companies.

The enactment of the NGML has however contributed to the liberalisation of the natural gas market. For example, on 30 November 2005, BOTAŞ transferred its existing agreement for the import of 4 billion cubic metres ("bcm") per year from Russia to four other natural gas import companies in a tender process. These four natural gas import companies are Shell Enerji AŞ, Bosphorus Gaz Corporation AŞ, Enerco Enerji Sanayi

ve Ticaret AŞ, and Avrasya Gaz AŞ. In addition, after the expiration of the natural gas purchase agreement with Gazprom Export LLC ("Gazprom") on 31 December 2011, BOTAŞ did not renew this agreement due to the restrictions imposed under the NGML. Following the expiration of the natural gas purchase agreement between BOTAŞ and Gazprom, EMRA was permitted to grant import licences for the same volume and from the same country. Consequently, four natural gas import companies won the contract to import 6bcm per year to Turkey through the Russia-Turkey Natural Gas Pipeline. These companies are Akfel Gaz Sanayi ve Ticaret AŞ, Bosphorus Gaz Corporation AŞ, Batı Hattı Doğalgaz Ticaret AŞ, and Kibar Enerji Dağıtım Sanayi AŞ.

In addition, in 2020, two companies, namely Bosphorus Gaz Corporation AŞ and Engie Enerji Ticaret ve Pazarlama AŞ imported gas from Russia through the newly introduced spot pipeline gas import regime. This regime allows spot import licence holders to import gas to Turkey, using available capacity at the pipelines, after consideration of the capacity required for long-term natural gas purchase contracts.

Having said the above, in recent years BOTAŞ chose to enter into new natural gas purchase agreements for the import of natural gas from Azerbaijan and Russia after the expiration of long-term agreements, instead of opening the market further to private companies. This resulted in an increase of BOTAŞ's share in the import of natural gas.

Regulatory authorities

EMRA is the regulatory authority responsible for the regulation and supervision of the downstream natural gas market. As the regulatory authority, EMRA has introduced several regulations, communiqués, and decrees in relation to natural gas market activities.

Legal framework

The NGML governs downstream natural gas activities. Under the NGML, natural gas market activities are the import, export, transmission, storage, wholesale, and distribution of natural gas, as well as the sale, distribution, and transmission of compressed natural gas ("CNG").

Competition related restrictions are another important aspect of the natural gas market. Under the NGML, no company can sell natural gas corresponding to more than 20% of the estimated national consumption determined by EMRA and import companies cannot import natural gas corresponding to more than 20% of estimated national consumption. An amendment to the NGML introduced another restriction under which distributor licence holders can have licences in only two Turkish cities.

B.2 Third party access regime to gas transportation networks

Transmission and storage demand in the Petroleum Markets

Under the PML, a distribution licence holder cannot discriminate between the stations it operates and those operated by dealers. Transmission and storage licence holders with spare capacity in their facilities must address the transmission and storage demands of third parties if these demands conform to, among others, the tariff of the licence

holder, the capacity of the relevant facility, and the minimum amount in the tariff of the licence holder.

Third party access to gas distribution, transmission, and storage networks

Under the NGML, distribution or transmission licence holders must provide access to the system or allow the use of the system without any discrimination between third parties.

In parallel with the NGML, the Natural Gas Market Licence Regulation provides that distribution, transmission, and storage licence holders can decline the demands of third parties and eligible customers only if their capacity is not sufficient, they cannot perform their existing obligations otherwise or they may be ordered to pay significant financial compensation as a result of their existing contractual obligations. In addition, if the third party undertakes to cover the necessary expenses, this third party's request cannot be declined.

The BOTAŞ Transmission Network Operation Principles ("Network Operation Principles") and the Regulation on Natural Gas Market Transmission Network Operation also regulate third party access to the transmission network. Under these pieces of legislation, a connection contract must be concluded between BOTAŞ and the relevant licence holder. In addition, a standard transportation contract must be concluded for gas transportation. The Network Operation Principles is also an integral part of the standard transportation contract to be concluded between BOTAŞ and the relevant licence holder.

The Natural Gas Market Distribution and Customer Relations Regulation also govern third party access to distribution networks, under which distribution companies must connect all consumers within their region.

B.3 LNG terminals and storage facilities

There are two underground natural gas storage facilities, the Silivri Underground Natural Gas Storage Facility and Tuz Gölü Underground Natural Gas Storage Facility owned and operated by BOTAŞ. The first phase of the Tuz Gölü Underground Natural Gas Storage Facility was completed and came into service in February 2017. The capacity of the Tuz Gölü Underground Natural Gas Storage Facility is planned to be increased to 5.4bcm in the coming years. In March 2019, BOTAŞ signed a contract with two subcontractors for this project.

There are also two LNG terminals, the BOTAŞ Marmara Ereğlisi LNG Terminal in Tekirdağ and the Ege Gaz Aliağa LNG Terminal. EMRA also categorised floating liquefied natural gas ("FLNG") activities as storage activities and issued the first FLNG licence to Etki Liman İşletmeleri AŞ for a FLNG terminal in Aliağa, İzmir and the second FLNG licence to BOTAŞ for an FLNG terminal Dörtyol, Hatay.

B.4 Tariff regulation

Oil

The pricing system in the petroleum market is governed by the Regulation on the Petroleum Market Pricing System ("Pricing Regulation"). The Pricing Regulation sets out three pricing schemes, the tariff scheme, price list scheme, and price announcement scheme. The tariff scheme applies to transmission, storage, refining, and distribution activities, the price list scheme applies to processing activities, and the price

announcement scheme applies to dealership activities. Under the Pricing Regulation, the transmission licence holders, and the storage licence holders (if the storage facility is connected with the transmission system) must carry out their activities in accordance with their tariffs to be approved by EMRA (ie tariffs are prepared by the transmission licence holders and the storage licence holders, if the storage facility is connected with the transmission system, submitted to EMRA and approved by the same). The distribution licence holders and the storage licence holders (if the storage facility is not connected with the transmission system) must carry out their activities in accordance with their tariffs to be notified to EMRA.

In addition to the above, the PML sets out the formula for the calculation of the local crude oil's price. Additionally, under the PML, EMRA has the authority to set the minimum and maximum prices and to take necessary measures for implementation of these prices, either in a specific region in Turkey or in the entire Turkish territory for a term of up to two months in extraordinary circumstances (such circumstances include actions that are damaging to the competitive market environment, eg hidden price increase by the distribution companies).

Gas

The Natural Gas Market Tariff Regulation sets out the tariffs in the natural gas market (ie connection tariff, transmission tariff, storage tariff, wholesale tariff, and retail sale tariff). With respect to the wholesale tariff, the parties of the bilateral agreement can freely determine the price of the natural gas, but they must act in accordance with the principles to be set by EMRA (eg non-abuse of dominant position or security of natural gas supply). However, with the retail sale tariff, EMRA set the maximum amounts that the respective distribution company can apply to its subscribers.

B.5 Market entry

Gas

The NGML sets out restrictions and limitations with respect to the import of natural gas to Turkey through pipelines. BOTAS cannot enter into new natural gas purchase agreements until the share of gas imported by BOTAS falls to 20% of the annual national consumption amount. Secondly, Provisional Article 2 provides that EMRA must not permit any gas import company to import gas from countries from which BOTAŞ is already importing natural gas. However, EMRA may permit gas import companies to import natural gas from countries from which BOTAŞ is not already importing natural gas. Under the NGML, the criteria for evaluating whether to permit natural gas import from these countries are the establishment of a competitive natural gas market, and BOTAŞ's obligations arising from its existing agreements and export connections. However, it is worth noting that these restrictions and limitations are not applicable to the import of natural gas in the form of LNG. In 2021, the Parliament introduced another exception to these restrictions and limitations, which allows spot import licence holders to import gas to Turkey using available capacity at the pipelines following consideration of the capacity required for long-term natural gas purchase contracts.

B.6 Cross-border interconnectors

Within the scope of the EU's INOGATE (Interstate Oil and Gas Transport to Europe) programme, a gas network interconnection was set up between Turkey and Greece that has been in operation since 18 November 2007. In late 2018, the Trans-Anatolian Natural Gas Pipeline ("TANAP") and Trans-Adriatic Pipeline ("TAP") completed their connection. Through the connection of these two pipelines, natural gas from the Shah Deniz Phase II field is being delivered to Europe. Finally, gas flow from Russia to Bulgaria through TurkStream commenced in 2020.

C. Energy trading

C.1 Electricity trading

In addition to the EML and the Licence Regulation, electricity trading is particularly regulated under the Regulation on Electricity Market Balancing and Settlement ("Balancing and Settlement Regulation"). This sets out the principles and procedures regarding day-ahead market, real time market, electricity futures market, and power balancing market, as well as settlement of trade in these markets. The electricity futures market, ie post-dated electricity market that imposes physical delivery obligations on market participants, was newly introduced to the electricity trading scheme in 2020 and started operations on 1 June 2021.

In Turkey, generation, supply, distribution, and transmission licence holder companies can conduct electricity trading activities in the day-ahead and real-time market, whereas only generation and supply licence holder companies can participate in the electricity futures market. To participate in the electricity market, electricity traders must either conclude a bilateral electricity purchase agreement with another licence holder or contribute to the organised markets themselves. Electricity is traded mostly through bilateral negotiated agreements on an over the counter (OTC) basis. Agreements are not subject to EMRA's approval and therefore all commercial terms and conditions are freely negotiable. Under the Balancing and Settlement Regulation, electricity trading can be conducted both physically and through financial instruments, depending on the relevant electricity market. The Balancing and Settlement Regulation envisages an imbalance regime where electricity can be traded in the balancing market.

The organised wholesale electricity markets (eg day-ahead and real-time markets) are operated by EPİAŞ, which also conducts the balancing activities in the market.

C.2 Gas trading

Natural gas distribution, import, wholesale, and CNG licence holders trade in natural gas. The volume of natural gas that the natural gas market licence holders sold to other natural gas market licence holders was approximately 39bcm in 2021, according to the EMRA Natural Gas Sector Report.

On 31 March 2017, the Regulation on the Organised Natural Gas Wholesale Market was published in the Official Gazette and entered into force on the same date. The organised natural gas wholesale market has been in operation since 1 September 2018. The market operator is EPİAŞ, and to be able to trade in the Organised Natural Gas Wholesale Market, entities are required to hold natural gas import, export, or wholesale licences.

D. Nuclear energy

Nuclear power is a key aspect of Turkey's aim for economic growth. Turkey had taken important steps for the construction of two nuclear power plants and for the required legal framework, however one of the projects was later abandoned.

Nuclear power plant projects

Turkey's first nuclear power plant project is the Akkuyu NPP, which entails the construction of four reactor units with a total capacity of 4,800MW. In 2010, Turkey and the Russian Federation signed an Intergovernmental Agreement ("IGA") and provided a build, own, and operate model for the Akkuyu NPP. EMRA issued the generation licence for the Akkuyu NPP on 15 June 2017, which is valid until 15 June 2066, and the Turkish Atomic Energy Authority ("TAEA"), which was the then competent regulatory authority, issued the construction licence for the first unit of the Akkuyu NPP on 2 April 2018. On 3 April 2018, the Russian and Turkish presidents launched the construction of the Akkuyu NPP. According to public statements, the pandemic did not stop the construction works for the Akkuyu NPP and the plant's first unit is expected to be commissioned in 2023.

The second nuclear power plant project was the Sinop NPP. The IGA related to the Sinop NPP was signed by Turkey and Japan in 2013, and Turkey ratified this IGA in 2015. However, the project was abandoned in 2018 following completion of a feasibility study. That said, in November 2022 an MENR official stated that Turkey is currently discussing with Rosatom the possibility for the construction of a second nuclear power plant in Sinop. He added that Turkey is in contact with the Chinese government for construction of a third nuclear power plant in Turkey.

Regulatory body and licensing

Under the Law on the Turkish Atomic Energy Authority, the TAEA had been assigned responsibilities for both the promotion of nuclear energy and regulatory control of nuclear activities, and it was the licensing authority for nuclear facilities (ie site licence, construction licence, and operation licence). However, under international standards, the regulatory body had to be independent of all entities that promote the development of the nuclear industry.

On 2 July 2018, the Council of Ministers adopted the Decree on the Organisation and Duties of the Nuclear Regulatory Authority ("NRA"), under which the NRA was established and was assigned as the regulatory control institution for nuclear activities. The NRA's Board is comprised of five members appointed by the President of the Republic of Turkey. When appointing the members, the President also selects the president and the second president of the NRA Board among these five members.

Finally, in 2020, the Turkish Energy, Nuclear and Mineral Research Agency ("TENMAK") was established. TENMAK was assigned the duty of, among others, increasing Turkey's competitive power in the field of nuclear energy.

Legal framework

Since its creation, the NRA adopted secondary legislation, governing different aspects of nuclear energy such as Regulation on Nuclear Safeguard, Regulation on Organisational

Structure and Personnel in Nuclear Power Plants, and Regulation on Nuclear Export Control.

Third party liability

Turkey ratified the Convention on Third Party Liability in the Field of Nuclear Energy of 29 July 1960, as amended by the Protocol of 28 January 1964 and by the Protocol of 16 November 1982 ("Convention"). In December 2021, Turkey also ratified the 2004 Additional Protocol to the Convention, which sets out €700 million as the operator's minimum liability. It is worth noting that Turkey ratified the protocol with a limited reservation in relation to the €700 million minimum liability amount.

E. Upstream

Upstream activities and transit passage of petroleum

Upstream oil and gas activities are governed by the Turkish Petroleum Law ("TPL") and the transit passage of petroleum is regulated under the Law on Transit Passage of Petroleum through Pipelines ("Transit Law"). The General Directorate of Mining and Petroleum Affairs ("GDPA") and the Transit Pipelines Department of the MENR are the competent regulatory bodies for the oil and gas upstream and transit activities, respectively.

Key legislative features

The TPL entered into force on 30 May 2013 and replaced the former petroleum law dated 1954. The TPL divides Turkey into two petroleum districts ie onshore and offshore. It requires entities to obtain a survey permit, an exploration licence, or an exploitation licence, depending on the type of upstream petroleum activity they wish to pursue.

The term of the exploration licence has been set at five years for onshore and eight years for offshore activity. The terms of these licences may be extended up to nine years for onshore and 14 years for offshore exploration. An exploitation licence is granted for 20 years and may be extended twice, each time for ten years.

Petroleum right holders are permitted to export 35% for onshore and 45% for offshore, of the crude oil or natural gas produced in the fields discovered after 1 January 1980. The remaining volume and the total of the crude oil and natural gas produced in the fields discovered before 1 January 1980 must be reserved for the needs of the state. Additionally, under the TPL, a state share corresponding to 12.5% of the petroleum produced by exploration or exploitation must be paid to the State.

The TPL aims to liberalise oil and gas exploration and production and to attract foreign investors. To this end, the TPL provides certain exemptions from customs tax, fees, and stamp duty on import or domestic procurement of the materials, equipment, fuel, and land, sea and air transportation vehicles approved by the GDPA. Another tax exemption is that exploration and exploitation licence holders can use fuel exempted from special consumption tax. In addition, the total taxation of a petroleum right holder company, together with taxes withheld on behalf of its shareholders, cannot exceed 55%.

International oil and gas pipelines

The Transit Law assumes the existence of an IGA ie it is applicable only if there is an international agreement related to the pipeline. Under this law, the applicable legal framework for a transit pipeline consists of the Transit Law, the IGA, and the commercial agreements.

International oil pipelines

There is currently only one international transit pipeline crossing Turkey, ie the Baku-Tbilisi-Ceyhan Crude Oil Pipeline owned by the BTC Consortium, which transports crude oil from the Caspian region to Ceyhan.

International gas pipelines

The international natural gas import and export pipelines are:

- Russia-Turkey Western Route Natural Gas Pipeline crossing Ukraine, Romania and Bulgaria to Turkey;
- Russia-Turkey Blue Stream Natural Gas Pipeline, transporting natural gas from Russia to Turkey through the Black Sea;
- Iran-Turkey Natural Gas Pipeline, transporting natural gas from Iran to Turkey;
- Baku-Tbilisi-Erzurum Natural Gas Pipeline, transporting natural gas from Azerbaijan through Georgia to eastern Turkey;
- Turkey-Greece Natural Gas Pipeline, transporting natural gas from Turkey to Greece;
- TANAP transporting natural gas from Shah Deniz Phase II
 field in Azerbaijan to Turkey and Europe. Construction of this
 pipeline began in 2015 and the supply of gas from Azerbaijan
 to Turkey through TANAP began in June 2018. After
 completion and connection of the TANAP and TAP, gas
 deliveries to Greece began at the end of 2020. Along the TAP,
 natural gas from the Shah Deniz Phase II field will be delivered
 to South Italy through Greece and Albania; and
- The TurkStream Natural Gas Pipeline transports gas from Russia across an offshore section under the Black Sea to Turkey and from there onto European markets through Bulgaria. On 10 October 2016, Turkey and the Russian Federation signed an IGA for the construction of the TurkStream pipeline. Gas deliveries through the TurkStream started in early 2020.

In addition, the completion of the following natural gas pipeline projects will make Turkey a regional energy hub and secure its natural gas supply security:

- The Trans Caspian Natural Gas Pipeline, transporting Turkmen gas across the Caspian Sea to Azerbaijan and Turkey; and
- The Iraq-Turkey Natural Gas Pipeline, transporting natural gas from northern Iraq to Turkey.

F. Renewable energy

F.1 Renewable energy

Under Turkish law, renewable energy is governed by several legislative instruments such as the EML, the Licence Regulation, the Law on Utilisation of Renewable Energy Resources for the Purpose of Generating Electrical Energy ("RER Law"), the

Regulation on Certification and Supporting of Renewable Energy Resources ("RERSM Regulation"), the Regulation on Renewable Energy Resource Areas ("RERA Regulation"), the Geothermal Resources and Natural Mineral Waters Law, and the Energy Efficiency Law ("EEL").

There are several regulations on renewable energy, dealing with issues ranging from water utilisation agreements to equipment standards for solar energy plants. Among the important pieces of secondary legislation are the following:

- Regulation on Solar Energy Based Electricity Generation Facilities;
- Regulation on Competition in relation to Preliminary Licence Applications for Establishment of Wind or Solar Energy Based Generation Facility;
- Regulation on Technical Assessment of Applications for Solar Energy Based Generation; and
- Regulation on Technical Assessment of Applications for Wind Energy Based Generation.

Renewable energy resources support mechanism

The RER Law's purposes include utilisation of renewable energy resources for generating electrical energy. To encourage this, in 2011, the law introduced a support mechanism, namely the Renewable Energy Resources Support Mechanism (RERSM). This support mechanism provides for a guaranteed feed-in tariff for a period of ten years as well as an additional tariff for a period of five years, if domestically manufactured equipment is used in the plant. The prices contained in the guaranteed feed-in tariff were in US\$. However, for plants to be commissioned after 1 July 2021, the prices are in TRY and these prices are less than their US\$ equivalent in the previous feed-in tariff. These prices will be adjusted on a quarterly basis, taking into account the inflation and foreign exchange rates, subject to a US\$ cap. Despite this adjustment mechanism, the prices in TRY may have a negative effect in future renewable energy investments in Turkey.

RERA regulation

For a more efficient use of RERA, the MENR adopted the RERA Regulation. This regulation regulates the determination of RERA as well as the competitive process to obtain the usage rights in these areas. One of the purposes enshrined in this regulation is technology transfer through use of domestically manufactured equipment.

Renewable energy certificate schemes

Since 1 June 2021, there have been two renewable energy certificate schemes available in Turkey. The first scheme is the International Renewable Energy Certificate ("I-REC"). The International REC Foundation ("Foundation") is a non-profit organisation that provides an attribute tracking system based on the I-REC Code rules and regulations. In Turkey, the Foundation has authorised Foton Yazılım Teknolojileri ve Enerji Danışmanlık Hizmetleri AŞ ("Foton") to register and issue an I-REC. The owners of electricity generating facilities can register their facilities with the I-REC system. Foton issues I-RECs based on reported generation from these electricity generating facilities (one I-REC per MWh of electricity production). Accordingly, end-users can purchase and redeem I-RECs. They can do this through their accounts in the system or through

market players (eg generators of renewable energy and suppliers). Using I-RECs, end-users can prove their renewable energy use.

The second scheme is the Renewable Energy Guarantee of Origin ("YEK-G") scheme, which EMRA introduced in 2021. The legal framework governing the YEK-G entered into force on 1 June 2021 and the first day of trading was 21 June 2021. The system is similar to the I-REC. Under this scheme, the Turkish energy market operator, EPİAŞ, issues the YEK-G certificates. Owners of electricity generation facilities can register their facilities with the YEK-G system (if not already registered with the I-REC system). The YEK-G certificates are traded in the YEK-G market. The participants of this market are the generators of renewable electricity and suppliers, and they redeem the YEK-G certificates. Accordingly, end-users will be able to purchase the YEK-G certificates by approaching the participants. International recognition of the YEK-G certificates is still to be tested.

F.2 Renewable pre-qualifications

To participate in competitions to be organised under the RERA Regulation, applicants are required to fulfil the conditions that are contained in the announcement for the competition; the RERA Regulation does not provide a list of these conditions. However, those who are entitled to apply for a pre-licence under this regulation must fulfil the conditions required to obtain a pre-licence under the Licence Regulation.

F.3 Biofuel

Turkish energy legislation provides for blending requirements. EMRA has issued two communiqués to set out the blending requirements for the refineries and distribution licence holders. Under these communiqués, the refineries and distribution licence holders are required to blend ethanol, produced from domestic agriculture products, with gasoline and the volume of the ethanol must be equal to or exceed 3% of the total volume. However, EMRA reduced this percentage to 2% for 2022 and 2023.

Moreover, the distribution licence holders are required to blend biodiesel, produced from domestic agriculture products and/or biowaste, with diesel and the volume of the biodiesel must be equal to or exceed 0.5% of the total volume.

G. Climate change and sustainability

G.1 Climate change initiatives

Turkey became a party to the United Nations Convention on Climate Change in 2004 and also ratified the Kyoto Protocol in 2009. The Kyoto Protocol was extended by the Doha Protocol in December 2012. However, although Turkey is listed in Annex 1 of the Kyoto Protocol, Turkey is not within the scope of Annex B and therefore has no quantitative carbon emission reduction obligation under the Kyoto Protocol. Turkey had also signed the Paris Agreement in 2016 but had not ratified it until recently. However, on 7 October 2021, Turkey completed the procedure for the ratification of the Paris Agreement under Turkish law. Turkey is currently listed under Annex I. Annex I includes the industrialized countries that were members of the OECD (Organisation for Economic Co-operation and Development) in 1992, plus countries with economies in transition (the EIT Parties), including the Russian Federation, the Baltic States, and several Central and Eastern European States. Turkey had

submitted a proposal to be removed from Annex I at the 26^{th} Session of the Conference of the Parties held in Glasgow, United Kingdom, but later withdrew this proposal.

To comply with the multinational initiatives regarding climate change, Turkey has taken a set of legislative measures to increase energy efficiency and renewable energy generation. In this regard, the Parliament has enacted and amended the EEL and the Environment Law. In addition, secondary legislation on specific matters such as GHG, carbon emissions and ozone-depleting substances has been adopted. The EEL provides for a support mechanism for energy efficiency implementation projects.

In November 2017, MENR has announced a National Energy Efficiency Action Plan ("NEEAP") for the 2017-2023 period, which envisage the following actions:

- identifying the potential of cogeneration, district heating, cooling systems and preparing a roadmap for legislation;
- implementing efficiency standards for the natural gas infrastructure;
- presenting customers with comparable and detailed bills;
- creating an energy data platform for smart management of measurement data;
- harmonising the legislative framework on electric metering with the EU codes (ie scale up smart metering);
- implementing minimum performance standards for transformers:
- · managing peak demand arising from heating and cooling;
- improving energy efficiency in public lighting, electricity transmission and distribution and existing power generation plants; and
- building a market infrastructure for demand-side response.

To carry out energy efficiency studies and implement, monitor, and update the NEEAP, Turkey established the NEEAP Monitoring and Steering Board by issuing a Presidential Circular on 7 December 2019.

On 17 February 2021, the Minister of the Ministry of Environment and Urbanisation ("MEU") announced the "Fight Against Climate Change Declaration", which involves a set of measures to minimise the impact of climate change in Turkey. The Minister stated that a report on the fight against climate action will be presented in 2021 to Parliament to help it draft climate legislation.

On 19 February 2022, the Regulation on Energy Performance of Buildings was amended. Under this amendment, for the period between 1 January 2023 and 1 January 2025, buildings having a construction area of 5,000 m² must be built as nearly zero-emission buildings and at least 5% of their primary energy use must be from renewable sources. After 1 January 2025, these requirements will apply to buildings having a construction area of 2,000 m² and the 5% threshold will be increased to 10%.

G.2 Emission trading

Turkey is not a party to the EU ETS, and therefore has not implemented the EU ETS Directive or the New EU ETS Directive.

In recent years, Turkey took significant steps towards the establishment of a nationwide ETS but to date does not have an operating scheme. The MEU has published the Roadmap regarding the formation of a Greenhouse Gas Emission System in Turkey ("GHG Roadmap") to lay out the applicability and the implementation of potential ETS in Turkey. On 27 October 2020, the MEU Deputy Minister announced that the MEU is working on a draft regulation regarding ETS.

G.3 Carbon pricing

As Turkey is not a party to the EU ETS and has not implemented any regulations on a national ETS, it does not have any established carbon pricing strategy. Even though the GHG Roadmap states that Turkey is considering the carbon pricing model, it does not include any forecasts on the details of this pricing model.

G.4 Capacity markets

The EML and the Communiqué on Electricity Market Capacity Mechanism ("Capacity Communiqué") govern the established capacity mechanism in Turkey. The capacity mechanism is operated by TEİAŞ. Under the Capacity Communiqué, TEİAŞ makes pre-determined payments to generation licence holders on an annual basis for the establishment and/or maintenance of a sufficient established capacity. The licence holders apply to TEİAŞ to participate in the capacity mechanism.

H. Energy transition

H.1 Overview

Turkey has set its energy transition policy on three main pillars: security of supply, localisation, and predictability in the markets. With the increase of RES and domestic supply, Turkey aims to reduce the foreign dependency rate and the primary energy consumption by 14% until 2023. In recent years, the Turkish government focused on policymaking with a particular interest to increase investments in the renewable energy sector (see section F). Turkey's total installed capacity for electricity generated from renewable sources has been gradually increasing since 2010. Turkey currently generates almost half of its electricity through renewable sources.

H.2 Renewable Fuels

Hydrogen

Although Turkey does not currently have a legislative framework regarding the licensing, production, transmission, and distribution of hydrogen, the possible use of hydrogen has been referred to in several secondary legislation, as well as the NEEAP for 2017-2023.

On 24 January 2020, MENR published a 'white paper' to seek recommendation and further insight from hydrogen stakeholders to set up a roadmap regarding Turkey's hydrogen strategy. The 'white paper' is followed by a 'red paper', which includes MENR's developed strategies for the establishment of a hydrogen market. MENR is expected to draft a 'green paper' to lay out the applicability and the implementation of Turkey's hydrogen strategy, as well as the need to establish a regulatory

framework for hydrogen. In April 2021, the Minister of MENR announced that Turkey's national hydrogen strategy report would be finalised in 2021.

In 2021, Turkey was laboratory testing hydrogen combined with natural gas in an effort to assess the potential distribution of a hydrogen-natural gas mixture through the national distribution network. According to Turkey's National Energy Plan, Turkey intends to distribute a hydrogen-natural gas mixture with a 3.5% hydrogen through its national distribution network by 2035.

On 19 January 2023, the MENR published Turkey's Hydrogen Technology Strategy and Roadmap. At the launch of this strategy document, the Minister of Energy and Natural Resources announced that (i) the green hydrogen obtained by using renewable energy sources through the electrolysis of water will be crucial for Turkey's net zero emission target, (ii) previous tests on mixing hydrogen with natural gas yielded successful results and further tests are ongoing, (iii) between 2030 and 2053, the mix ratio of hydrogen to natural gas is aimed to increase to 12%, and (iv) an incentive mechanism will be introduced for the use of local hydrogen mixture grid.

Ammonia

Turkey does not have a legislative framework regarding the use of ammonia as an energy source.

H.3 Carbon capture and storage

Turkey has no legislative framework for carbon capture and storage ("CCS") and has not implemented the CCS Directive. Although an increasing number of research centres and academics have been carrying out internal CSS studies for some time, Turkey does not have a national CSS project in place.

H.4 Oil and gas platform electrification

Turkey has no legislative framework for oil and gas platform electrification or any current/planned platform electrification project.

H.5 Industrial hubs

Turkey's energy investments are widely dispersed throughout the country, eg renewable energy investments usually take place in the Aegean Region whereas oil and gas related facilities are mainly located at the South Eastern part of the country. Turkey's ultimate purpose is becoming an industrial energy hub as a country, due to its geopolitical position (between Asia and Europe) in terms of energy transmission. Through natural gas pipelines such as TANAP and TurkStream as well as the natural gas discovery in the Black Sea region in August 2020, Turkey plans to become a regional energy hub and secure its natural gas supply. In addition, Turkey also aims to become a solar and wind energy hub by 2023.

H.6 Smart cities

Turkey introduced the 2020-2023 National Smart Cities Strategy and Action Plan ("NSCSAP") by issuing a Presidential Circular on 23 December 2019. The NSCSAP specifies the objectives:

- creating an effective smart city ecosystem;
- increasing the smart city transformation capacity;

- creating a facilitating and guiding environment regarding smart city transformation; and
- ensuring smart city transformation in urban services.

The NSCSAP introduces a total of 40 actions to be implemented, the most significant of which are:

- preparing a local smart transition strategy for every city;
- forming a smart city index as an evaluation model;
- establishing sustainability tracking mechanisms such as the Smart City Technology Radar;
- increasing the human resource capacity and quality;
- improving the quality of smart city components; and
- providing the necessary governmental incentives to attract attention to smart transition.

NSCSAP also introduces a plan regarding the cities' smart energy transformation, which is increasing the maturity of smart energy by optimising energy resources, grid management and energy consumption, ensuring efficient use of energy and utilisation of renewable energy and alternative energy sources.

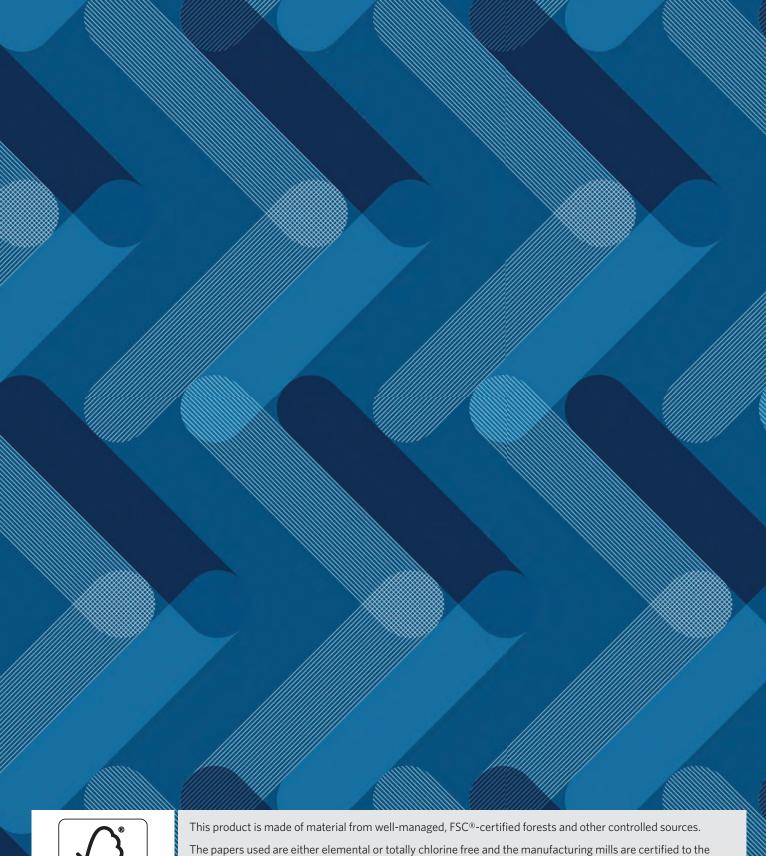
I. Environmental, social and governance (ESG)

Turkey does not have a standard environmental, social, and governance ("ESG") legal framework. Instead, ESG legal framework in Turkey is not fully consolidated, ie specific ESG related matters are addressed under, among other things, different pieces of legislation and regulatory resolutions.

In October 2020, the Capital Markets Board ("CMB") amended the Corporate Governance Communiqué, which sets out the corporate governance principles for listed companies. These principles require publicly listed companies to comply with the regulations in relation to environment, social, and corporate governance principles. The changes made to the Corporate Governance Communiqué state that publicly listed companies are required to report on their compliance with the Sustainability Principles Compliance Framework ("Framework"). The environmental principles under the Framework call on companies to disclose their policy, practice, action plan, environmental management systems, and their programme in the area of environmental management. The environmental principles encourage companies to set their targets to reduce their environmental impacts. Accordingly, Turkish energy conglomerates have begun to place more importance on ESG disclosures, particularly on environmental principles.

Endnotes

- 1. See www.teias.gov.tr/tr-TR/kurulu-guc-raporlari.
- 2. See www.neighbourhood-enlargement.ec.europa.eu/system/files/2022-10/T%C3%BCrkiye%20Report%202022.pdf.
- **3.** Seewww.elder.org.tr/Content/yayinlar/TAS%20EN.pdf.
- $\textbf{4.} \quad \textbf{See www.epdk.gov.tr/Detay/Icerik/3-0-107/yillik-sektor-raporu.}$
- **5.** Ibid.
- 6. See www.pmrturkiye.csb.gov.tr/wp-content/uploads/2020/12/Turkiyede-Sera-Gazi-Emisyon-Ticareti-Sisteminin-Kurulmasina-Yonelik-Yol-Haritasi.pdf.
- 7. See www.enerji.gov.tr//Media/Dizin/EIGM/tr/Raporlar/TUEP/T%C3%BCrkiye_Ulusal_Enerji_Plan%C4%B1.pdf.





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7081F /2023