# Energy

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# Greece

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### Overview of the current energy mix, and the place in the market of different energy sources

Gross national electricity consumption in Greece in 2020 reached 1.8 tonnes of oil equivalent ("**toe**") *per capita* (33% below the EU average of 3.1 toe), including around 4,600 kWh of electricity *per capita* (12% below the EU average).

Based on the Residual Energy Mix 2021 published by the RES & Guarantees of Origin Operator ("**DAPEEP**"),[1] the energy production mix in Greece for 2021 was formulated as follows: (a) natural gas accounted for 41% of total production (including high efficiency combined heat and power ("**HE CHP**") production using natural gas as a fuel source); (b) renewable energy source ("**RES**") production accounted for *c*. 41% of total production (solar 9.6%, wind 19.9%, hydropower 11% and biomass 0.9% of total production); (c) lignite and other fossil fuels reached 10% of total production; and (d) oil contributed only 7.4% of total power production.

Over the past few years, natural gas-fired and RES capacity have seen an increased share in the generation capacity mix, driven by the planned decommissioning of old lignite and oil-fired units (present in the Non-Interconnected System only) and a significant build-out of RES plants.

Until the recent energy crisis, further exacerbated by the ongoing war in Ukraine, natural gas was gradually replacing lignite and oil and was set to play the role of bridge fuel in the decarbonisation process, eventually giving way to RES production, mainly due to being significantly cheaper than oil and more environmentally friendly than any conventional form of energy. By way of background, 2019 saw a record-high growth in national natural gas consumption, which increased by 81% compared to 2014 and by 9.4% compared to 2018. This trend, which continued in 2020 and 2021, shows the rapid penetration of natural gas in the Greek market and its enhanced share in the domestic energy mix. The Greek natural gas demand is fully covered by imported natural gas, which is injected into the National Natural Gas Transmission System ("**NNGTS**"), either through entry points from Bulgaria and Turkey or through the LNG Facility on Revithoussa island. Upstream gas operations are almost non-existent, as production of natural gas is negligibly small compared to the total consumption. To the extent that liquefied natural gas ("**LNG**") was cheaper than pipeline gas, it contributed to the reduction of the cost of electricity production from natural gas, a drop ultimately reflected in the wholesale prices of electricity. At the same time, LNG provided flexibility as a means of risk management for gas suppliers, allowing for smoother and more economical pricing for consumers. Based on data published by the National Natural Gas System Operator (DESFA) S.A. ("**DESFA**"), during 2019–2021, approximately

50% of domestically consumed natural gas was imported as LNG and regasified through the Revithoussa LNG Facility. Overall, the country's natural gas needs were mostly covered by imported natural gas and LNG, primarily from Russia, while other large gas suppliers included Algeria and Turkey. This was largely overturned during the months following the outbreak of war in Ukraine and the sanctions imposed on Russia (including a partial ban on fuel imports), with only 6% of total imports in July 2022 coming from Russia, while 61% being in the form of LNG.

As part of its "Clean Energy for all Europeans" package, the European Commission has adopted an update of the Renewable Energy Directive for 2021–2030, setting the overall EU target for RES consumption by 2030 at 32% and an energy-efficiency target of at least 32.5%, with an upwards revision clause by 2023. Previously, decarbonisation of the national energy market had been declared a top priority under Law 3851/2010, transposing Directive 2009/28/EU, which set the target of increasing the share of RES in gross final energy consumption to 20%, and in gross energy consumption to 40% by 2020.

According to the EU Directive on renewables, the national target of 18% of renewables in final energy consumption in 2020 was exceeded by almost 4 pp (21.7% in 2020); the share for renewable electricity was set at 40% (36% achieved in 2020). In terms of capacity, currently, operative RES projects account for approximately 10 Gigawatts ("**GW**"), with the target to increase to 25 GW by 2030.

Historically, lignite was the backbone of Greece's electricity system for many decades, covering the biggest part of the country's electricity needs. Lignite-powered plants have always been owned by the Public Power Corporation ("**PPC**"), as no private entity has yet undertaken control over such plants in Greece. Over the past 15 years, the share of lignite in meeting the country's electricity demand has significantly decreased. This decrease has been offset by a similar increase in the shares of the power generated from RES and hydropower, as well as imports of electricity mainly from Bulgaria and Turkey. However, this gradual fall in the use of lignite-generated power will be brought to a halt in the near future, as Greece is planning to partially resume the use of lignite as an alternative power source to natural gas, which has become extremely expensive in the wake of the war in Ukraine.

Crude oil production in Greece, currently derived from two producing fields in the Northern Aegean Sea (Prinos) by a single oil producer, is gradually falling at the low end of the overall production mix in Greece and is insignificant compared to domestic oil consumption.

## Changes in the energy situation in the last 12 months that are likely to have an impact on future direction or policy

The COVID-19 pandemic had undoubtedly affected every commercial activity worldwide, causing the suspension of business activities and projects across all sectors for a significant part of 2020. In the energy sector, oil prices plunged to a record low, while national lockdowns imposed by governments around the globe, including the Greek Government, had a game-changing impact on the power and natural gas levels of demand. In 2020, the energy sector in many jurisdictions was affected by the COVID-19 pandemic and slump in oil prices, and some of those impacts continued in 2021.

Separately, since the early implementation stages of the EU Target Model in November 2020, market turbulence has overall led to higher wholesale energy prices. This hike has been passed on to low- and medium-voltage consumers by all power suppliers as they ceased to provide fixed-price contracts, and instead included wholesale market-related clauses in their supply contracts. This dramatic price adjustment was first applied in August 2021; however, by early 2022, the majority of energy consumers were suffering significant increases in their electricity bills. Since early 2022, global energy prices have risen sharply, primarily as a result of the invasion of Ukraine, followed by measures adopted by the EU in an effort to limit dependence on Russian natural gas. Apart from this war-induced rise, the energy market has also been materially disrupted by the growing energy demand in Asia and limited shale production in the United States. The turbulence in natural gas prices in Europe has had a direct impact on power production, which is largely based on natural gas (exceeding a 40% rate). Indicatively, in Greece, the average wholesale electricity price in July 2022 grew by 232% (compared to July 2021) and soared to 338.14 MWh, up by 41% compared to the previous month (June 2022). In fact, the minimum average Market Clearing Price for the month of July was €87.38/MWh, while the maximum was €686.25/MWh.

This escalating crisis invoked strong reactions particularly from consumers and eventually resulted in the implementation of drastic measures by the Greek Government, including: (a) the enforcement of certain legislative amendments enabling enhanced access to natural gas and LNG (e.g. DESFA's right to temporarily lease LNG ships, and capacity enhancement and simplification of LNG loadings at the Revithoussa LNG Facility); (b) the temporary suspension as of August 2022 of the price adjustment clauses that linked retail to wholesale prices and streamlining of the power suppliers' switch process (Article 138 of Law 4951/2022); and (c) from 1 July 2022 to 1 June 2023, the introduction of price caps on the wholesale market for lignite plants, RES and hydro plants (Article 122 of Law 4951/2022). This was followed by the Regulatory Authority for Energy's ("**RAE**") decisions regulating the methodology[2] and specific price caps per each form of production plant – for September, the limits were set as follows: €214/MWh for lignite; €112/MWh for hydro; and €85/MWh for RES. Further, a mechanism was introduced for the clawback of so-called "windfall profits" of wholesale market participants generated before July 2022; apart from RES plants, such excess profits have not yet been collected. All excess profits reclaimed shall be deposited into the national Energy Transition Fund, which in turn funds the financial support schemes aimed at alleviating consumers' economic burden. The Government's approach is in line with the ongoing discussion at the EU level, which, with a view to protecting citizens from soaring energy prices that have driven inflation across the continent to record highs, has so far favoured profit clawback mechanisms rather than imposition of caps on Russian gas prices.

Another key development driven by the recent energy crisis is the partial revival of Greece's coal mining industry by 50% and the extension of the operation of all lignite-fired power plants to 2028, as a measure to ensure security of supply in light of the fluctuations in natural gas capacities and prices. By way of background, as part of the country's decarbonisation plan, launched largely by the latest National Plan for Energy and Climate ("**NPEC**") in 2020, a central priority has been the gradual shutdown of all but one of its coal-fired plants by 2023 and the conversion of a new, more efficient lignite-fired unit (Ptolemaida 5) and cleaner fuel by 2025. To ensure a fair development transition of the lignite areas in Western Macedonia and Megalopolis, a three-pillar plan was announced: employment protection; compensation of the socio-economic impact of the transition; and energy self-sufficiency of lignite areas. Greece is a pioneer in Europe for the "just transition" plan related to lignite areas, which identifies five development areas, including (i) clean energy, (ii) industry, small industry and trade, (iii) smart agricultural production, (iv) sustainable tourism, and (v) technology and education.

In response to the energy crisis and in order to tackle potential deficiency in natural gas in the near future, several new floating terminal plans are ramping up in the Greek market, adding to the long-expected Alexandroupolis floating storage and regasification unit ("**FSRU**"), an LNG terminal whose construction began in 2022. The Alexandroupolis FSRU will comprise an offshore floating unit for the reception, storage and regasification of LNG and a transmission system for the shipping of natural gas into the NNGTS, thus securing new natural gas quantities for the supply of Greek and regional Southeastern European markets. Gastrade, the project company, has obtained a third-party access exception, following a market test process carried out in cooperation with RAE. The Alexandroupolis FSRU, once completed, will be the second LNG terminal operating in Greece, together with the Revithoussa LNG Facility (the latter being part of the NNGTS). In particular, completion of Dioryga Gas, a new LNG Facility in Corinth developed by the Motor Oil group, is expected to increase the capacity of the Greek natural gas system by 80%, thus strengthening the country's security of supply, while the system's capacity will be further enhanced by the Argo FSRU, a terminal to be developed in Volos by Mediterranean Gas.

Another critical development expected to have a major impact on future government policy is the escalating geopolitical instability in the wider region, with Greek-Turkish tensions jeopardising gas supply from Turkey (one of Greece's key gas import corridors), showcasing the need for sufficient gas storage facilities to safeguard the security of supply.

On the electricity infrastructure front, the Independent Power Transmission Operator ("**IPTO**") is in the process of integrating the island of Crete with the Interconnected System. Until recently, electricity on Crete was provided by an autonomous electricity system, with power mainly generated by oil-fired plants (with a total capacity of 813 MW), together with substantial capacity provided by renewable sources (with a total capacity of 279 MW). Crete is expected to be fully integrated in two phases, comprising the Crete-Peloponnese interconnection, which has been electrified, successfully making this project the longest subsea alternative current connection in the world, and the connection between Crete and Attica, currently expected to be completed by the end of 2023. Ariadne Interconnection S.A., a special purpose vehicle ("**SPV**") established by IPTO, assigned with the implementation of the Athens-Crete interconnection project, has started construction of the electricity grid project. Outdated diesel-fuelled power stations operating in Crete need to be phased out in order to meet EU environmental standards. Commissioning of the Ariadne interconnection, the largest electricity grid infrastructure project ever developed in the country and one of the longest subsea power grids (328 km) to have been developed globally so far, is expected to take place in 2023. Electricity interconnections with the Dodecanese island complex and the North Aegean islands are planned for 2029 and 2031, respectively. These subsea interconnections will not only contribute to the reliability of the power supply and to the economic growth of the island regions but, most importantly, will help prevent the islands' environmental degradation and enable the injection of increased RES capacity from the islands into the national grid. Based on Articles 106–108 of Law 4821/2021, as of 1 August 2021, ownership of the Crete HV System passed automatically from PPC to IPTO, while management of the system passed from the Hellenic Electricity Distribution Network Operator ("**HEDNO**") to IPTO on 1 October 2021. These provisions regulate, among others, the transitional model of the market following the electrification of the Crete-Peloponnese interconnection.

In addition to integrating the non-interconnected islands, IPTO is also expanding the number of cross-border international interconnections. IPTO is already interconnected with Albania, Bulgaria, Italy, North Macedonia and Turkey, and expects to complete a second interconnection with Bulgaria by 2023. This additional cross-border interconnection is expected to contribute to increased cross-border exchanges, improve the security of electricity exchanges between Greece and Bulgaria, and accommodate expected future renewable energy generation capacity in Northeast Greece.

Other significant market trends and developments include the ongoing interconnection of some of the non-interconnected islands (e.g. Cyclades) with the Interconnected System. In the non-interconnected islands, electricity has historically been generated autonomously or in complexes of adjacent islands. Integrating the non-interconnected islands should increase the reliability and security of electricity supply, reduce generation costs, enable grid decongestion and increase opportunities to exploit significant renewable energy capacity.

In addition to the above developments, the past 12 months have seen the successful sale of a 49% stake in HEDNO to an international fund, the transfer to HEDNO of the distribution network, which previously belonged to PPC (in the context of HEDNO's part-privatisation), the launch of an international tender for the sale of a 20% stake in Ariadne Interconnection S.A., and the launch of construction of the EuroAsia Interconnector, a proposed high-voltage direct current interconnector between the Greek, Cypriot, and Israeli power grids via the world's longest submarine power cable.

A landmark development expected to completely transform the Greek energy market was the entry into full operation of the Hellenic Energy Exchange S.A. ("**HEnEx**") in 2021. The new entity was founded through a spin-off from the electricity market branch of electricity market operator LAGIE by virtue of Law 4512/2018. The new market replaced the existing model, whereby the Greek wholesale electricity market was a day-ahead market, organised as a centralised mandatory pool, operated by LAGIE. The establishment and operation of HEnEx, which is owned by state-controlled DAPEEP, the Athens Exchange Group, IPTO, the European Bank for Reconstruction and Development, the Cyprus Stock Exchange and DESFA, are mainly governed by Law 4512/2018. Following the formation of HEnEx, "EnEx Clear", a 100% subsidiary of HEnEx, was established as the market clearing house.

## Developments in government policy/strategy/approach

Following the enactment of the "Clean Energy for all Europeans" package, in early 2020, the Greek Government issued a new NPEC, which formed the Government's current policy aimed at protecting the environment and dealing with climate change. The NPEC set the following key targets: (a) full decarbonisation by 2028, based on a detailed schedule introduced later on (this target has been temporarily suspended in light of the recent energy crisis); (b) power from RES to become the country's main energy source, reaching 65% of power production in 2030; and (c) a more ambitious greenhouse gas emissions cut target, aimed at reducing emissions by more than 42% compared to 1990 and by more than 56% compared to 2005. Based on the NPEC, energy efficiency incentives for the energy renovation of public buildings, industrial facilities and residences were set to be granted during 2020–2022. Furthermore, the NPEC envisaged investment of a value up to €43.8 billion in RES, natural gas and electricity transmission and distribution networks, as well as granting of financial incentives for the purchasing of electric vehicles ("**EVs**") and launching of energy-saving programmes by 2030.

Following the introduction of the Fit for 55 package, the Government is in the process of amending the existing NPEC with a view to increasing the targets for RES capacity for 2030 and 2040, further reducing the country's dependence on Russian natural gas, increasing the capacity of storage of all technologies, as well as promoting biomethane and hydrogen production. The first National Strategy for Green Hydrogen is expected to be announced by the end of 2022, setting targets for each sector as well as a financial support scheme to boost new investments in the sector.

Adoption of the recast Electricity Directive (EU) 2019/944, the recast Renewable Energy Directive (EU) 2018/2001, the revised Energy Efficiency Directive (EU) 2018/2002, the new Electricity Regulation 2019/943, the Energy Performance of Buildings Directive 2018/844, as well as the Regulation on governance of the energy union and climate action (Regulation 2018/1999), the Regulation on risk-preparedness in the electricity sector (Regulation 2019/941) and the Regulation on a European Union Agency for the Cooperation of Energy Regulators (Regulation 2019/942), is expected to gradually transform the internal energy market towards a sustainable, low-carbon and environmentally friendly economy.

A huge milestone in the Government's environmental and climate policy is the adoption of the first National Climate Law (please see the "*Developments in legislation or regulation*" section below), as part of its broader effort to create a carbon-free community by 2050. The Greek Government is determined to enhance the RES market, particularly by streamlining the licensing process and reducing bureaucracy, as well as by granting attractive tax incentives for upgrading the energy performance of buildings, aiming to accelerate the rate of building renovation towards more energy-efficient systems, and make new buildings "smarter".

With a view to boosting the establishment of hybrid renewable energy systems in locations that are not fitted with an electricity distribution system, such as the non-interconnected islands, the Government has started developing a special legal framework to govern hybrid power and working to introduce specific pricing schemes. The creation of a hybrid power market, which is expected to entail the granting of favourable tariffs through competitive procedures, will aim at providing increased system efficiency as well as greater balance in energy supply, resolving the significant power outage issues on the Greek islands. To this effect, the Government introduced a fully fledged regulatory framework to govern storage projects and hybrid projects with combined generation and storage (please see the "*Developments in legislation or regulation*" section below), and is in the process of organising a series of capacity auctions during 2023 for the financial support primarily of battery energy storage system capacity, granting operating and investment aid. Based on the Government's announcements, total storage capacity to be auctioned exceeds 700 MW, while technical and market rules for the participation of hybrid projects in the market are due to be specified.

Another critical development showcasing the Government's current energy policy and determination to achieve the decarbonisation targets was the enactment of a long-anticipated framework to regulate the development of offshore wind plants – a target of 2 GW capacity in operating floating offshore wind farms by 2030 has been set, with several major local energy players partnering with foreign companies with experience in the development of offshore plants in preparation for the implementation of the new framework (please see the "*Developments in legislation or regulation*" section below).

In the same context, for the first time, Greece has introduced regulations for offshore solar plants in an effort to boost the relevant market and for additional solar capacity to be contributed to the country's energy mix (please see the "*Developments in legislation or regulation*" section below). As far as the RES projects are concerned, the Government has declared its commitment to promoting merchant power purchase agreements and direct wholesale market participation, as opposed to offtake agreements providing for operating aid, which has been the established practice since the creation of the renewables sector in Greece. As part of the operating state aid granted to RES producers, following a pilot tender carried out in 2016, and the state aid clearing of tariff framework, in 2018–2020, three broader rounds of technology-specific and joint (for photovoltaic ("**PV**") and wind parks) capacity tenders were successfully conducted by RAE, comprising 14 separate competitive procedures in total. During this period, 687 projects participated in the auctions, with a total capacity of 1.28 GW (PV projects) and 1.34 GW (wind projects) being awarded feed-in premium ("**FiP**") contracts. These auctions resulted in the gradual lowering of the average reference tariffs. While the last competitive procedure under the previous framework took place in January 2021, following the expiration of the initial term of the RES state aid scheme, the Greek Government adopted a new tariff auctions support scheme, which will extend to 2025 and in the context of which, RES projects with a maximum total capacity of *c*. 3.5 GW are expected to be awarded operating aid. Further, clearing by the European Commission of the auction scheme for FiP contracts introduced by Law 4412/2016 (as described above) has played a key role in the recent RES market boom.

With respect to energy wholesale market reform, Law 4512/2018 paved the way for replacement of the mandatory pool model by a day-ahead market, an intra-day market, a balancing market (comprising the balancing capacity market, the balancing energy market and the imbalances settlement) and an energy derivatives market. From the contribution of the aforementioned branch to the new company, it followed that LAGIE is no longer the electricity market operator and the wholesale electricity market as a whole has now been transferred to HEnEx. In turn, LAGIE, comprising the remaining sectors, was renamed DAPEEP, assuming the role of operator of RES producers and guarantees of origin ("**GOs**").

Directive (EU) 2009/72, as part of the Third Energy Package, first laid the groundwork for the restructuring of the electricity market, aiming to establish access to the network for cross-border exchanges in electricity. This initial effort was further elaborated by subsequent Regulations (EU) 713/2009 and 714/2009, introducing the so-called "EU Target Model", laying down the major target of European electricity market integration.

A key component of the EU Target Model, as set out in Regulation 2015/1222 ("**CACM Regulation**"), is the concept of market coupling, which Greece is in the process of setting the ground for, in close cooperation with its neighbouring countries. This effort began with the establishment of a radically new wholesale market model, aiming to enhance competition and remove significant distortions in the electricity market (see above regarding the establishment of HEnEx). The Greek electricity market is gradually being coupled with Bulgaria and Italy, as set out in Article 15 (1) of the CACM Regulation in ACER Decision 6/07.11.2016.

Both the day-ahead market (where electricity is traded for physical delivery within the subsequent 24 hours) and intra-day market (transactions for physical delivery of electricity within the same day in order to cover any failures to fulfil deliveries from orders that have been closed over the previous 24 hours through the next day's purchase) are operated in accordance with RAE Decision 1116/13.11.2018, as amended and currently in force. The Hellenic Capital Market Commission together with RAE are the responsible authorities for the supervision of the energy derivatives market. Therefore, under this new market model, traded products will be either financially or physically settled. Apart from the energy derivatives market, market participants also have the option to conclude bilateral energy contracts (over-the-counter contracts), which shall be declared to a registration and nomination platform operated by HEnEx in order to be submitted as orders in the day-ahead market. As interconnections with neighbouring countries gradually come online, the day-ahead market should also enable market coupling and EU-wide clearing for wholesale electricity.

In order to specify the rules of operation of the wholesale energy markets under the EU Target Model in Greece, RAE issued Decisions 1008A/2020 and 1657/2020, setting a maximum percentage of transactions that may be conducted bilaterally through over-the-counter energy financial instruments with physical delivery. More specifically, according to Article 18, paragraph 6 of Law 4425/2016, in order to ensure efficient operation of the electricity markets, a maximum rate of transactions on energy financial instruments per portfolio may be determined. According to the abovementioned decisions, bilateral contracts were allowed at up to 20.0% for suppliers with retail market share exceeding a 4.0% threshold. This restriction took effect following commencement of day-ahead market operation, i.e. 1 November 2020, and remained in force until 31 December 2021, but has remained in place for PPC on account of its dominant position in the market.

Unlike suppliers, RES producers participating in HEnEx markets are not bound by such restrictions; however, they must take them into consideration when transacting with suppliers through bilateral contracts for the sale of their produced energy. Similarly, in accordance with the applicable regulatory framework, RES producers with effective state-backed operating aid agreements with DAPEEP are not allowed to enter into bilateral contracts with power suppliers, unless the above contracts have been terminated.

In the investment field, the Government continues its privatisation programme albeit at a slower pace when compared to the previous five years.

A key potential investment expected to enhance security of supply in the Greek market and improve the management of natural gas supplier portfolios, particularly in light of the effort to minimise dependence on Russian gas, is the development and commercial exploitation of an underground natural gas storage ("**UGS**") facility in the South Kavala natural gas reservoir. The Hellenic Republic Asset Development Fund ("**HRADF**") launched an international tender for concession of the almost depleted South Kavala offshore natural gas field, with three international players expressing their interest in the first phase of the procedure in October 2020. The tender has been repeatedly delayed mainly due to ongoing consultation regarding the facility's business pricing framework, and disagreement between RAE and DESFA with respect to additional investments required for the effective operation of the UGS facility.

At the natural gas utilities level, the past few years have been eventful for the restructuring of previously state-owned public gas corporation DEPA. More specifically, Law 4602/2019 provided for the split of the commercial and infrastructure activities of DEPA. Subsequently, based on Law 4643/2019, amending Law 4602/2019, DEPA was divided into three separate legal entities: "DEPA Infrastructure S.A.", comprising all the distribution gas activities of DEPA; "DEPA Commercial S.A.", to which all DEPA's gas-related activities (both wholesale and retail) are transferred; and "DEPA International S.A.", comprising all the international infrastructure projects in which DEPA participates. Under the same law, the sale of HRADF's total shares in DEPA Commercial S.A. and DEPA Infrastructure S.A. was proclaimed, excluding shares of DEPA International S.A. In July 2021, the international tender for the acquisition of 100% of the share capital of DEPA Infrastructure S.A. took place, resulting in a successful outcome and the selection of Italgas SpA group as the successful investor. Unlike with DEPA Infrastructure S.A., the international tender launched in February 2020 for the sale of a majority shareholding (65%) in DEPA Commercial S.A., with an option to acquire the total of its issued share capital, was suspended as of mid-2021, mainly due to significant litigation against the target company, with the latest statements by the Government indicating that no sale process will be initiated in the near future, as the Government has opted to retain its shareholding in the gas company.

Another item on the Government's agenda is the sale of a further stake in IPTO, an entity vested with the ownership and operation of the national power grid. IPTO, originally established by virtue of Law 4001/2011 as a 100% subsidiary of PPC, was restructured in

2017 based on the Ownership Unbundling Model, through the sale of 24% to a strategic investor and the transfer of 25% to a state-owned SPV, with the Greek State indirectly retaining 51% of its shares. The further privatisation of IPTO is expected to secure much-needed funds for the expansion and upgrading of the power grid, facilitating the connectivity of new RES units and ultimately serving the carbon neutrality targets.

## Developments in legislation or regulation

By way of background, Law 4001/2011, transposing Directives 2009/72/EU and 2009/73/EU, continues to be the main piece of legislation currently governing the operation of energy markets in the electricity and natural gas sectors in Greece, including the production, supply, purchase, transportation and distribution of natural gas and electricity. Its primary objective was the creation of a single internal energy market, in line with EU secondary legislation; therefore, its provisions focus on the separation of transmission and distribution activities from generation and supply activities in the electricity and gas sectors. To this end, the same law established a certification process for transmission system operators, and measures for the effective unbundling of the regulated transmission and distribution activities from the competitive production and supply activities.

As anticipated above, until recently, by virtue of Law 4001/2011, the Greek wholesale market model was organised on the basis of a regulated compulsory offer of electricity to a day-ahead market, leading to the centrally organised sale of electricity at a uniform price (System Marginal Price), which reflected the offer of the most expensive unit dispatched. Participants to the mandatory pool were, on the one hand, producers and importers of electricity and, on the other hand, suppliers and exporters of electricity. Imbalances (i.e. deviations from day-ahead schedules) were settled through a distinct mechanism, but there was no balancing market. Clearing of the day-ahead market was performed by market operator LAGIE, while IPTO was responsible for conducting the real-time dispatch, clearing imbalances as well as settling payments for ancillary services and several other charges.

Law 4512/2018, in implementation of the CACM Regulation, introduced the new market model to be regulated by HEnEx and comprised the electricity market, the energy financial market, the natural gas market and the environment market. As mentioned above, the electricity market is divided into a day-ahead market, an intra-day market, a balancing market and an energy derivatives market. The balancing market is operated by IPTO, which is responsible for ensuring compliance with Regulation 714/2009 and the Regulation on wholesale energy markets integrity and transparency. Please refer to the "*Developments in government policy/strategy/approach*" section above.

The Greek RES market is primarily regulated by Law 3468/2006, which, among others, introduced the first state aid scheme based on a guaranteed feed-in tariff ("**FiT**") system (operating support based on a fixed compensation price), where producers received standard remuneration amounts and, consequently, minimised exposure to market risk. Law 3468/2006 differentiated between various categories of RES producers, and the amount of remuneration varied depending on whether the plants were located in mainland Greece or on the islands, i.e. whether they were connected to the mainland grid.

Following a deadlock in the previously implemented support schemes and after a period of stagnation between 2013 and 2018, the Greece RES market is now booming, particularly as a result of a state aid scheme introduced by Law 4414/2016, aiming to enhance RES investment and align the Greek energy market with EU targets. Under this RES state aid programme, currently set to run until 2025, qualifying RES projects may be granted 20-year operating aid agreements in the form of FiP contracts, i.e. contracts-for-difference between the market price of electricity and a fixed reference price, which is determined through competitive procedures conducted by RAE, all in replacement of the previous unsuccessful FiT system.

Small-scale as well as demonstration projects are exempted from this FiP scheme, in which case standard FiT contracts are entered into with DAPEEP. Based on Law 4643/2019 and in compliance with Regulation 2019/943, as of 1 January 2020, RES plants with a capacity equal to or higher than 400 kW are only eligible for FiP contracts awarded through bidding procedures, while at the same time undertaking balancing obligations in the HEnEx market (this threshold is expected to be lowered to 200 kW in 2026 in compliance with EU legislation). Law 4602/2019 set a limit on the number of RES projects entering into FiT contracts (i.e. without participating in the competitive auctions) in which a person or legal entity may directly or indirectly participate, provided, however, that the specific RES technology is eligible to participate in the respective competitive auctions, aiming to tackle potential attempts to circumvent the mandatory auctions rule.

As of 1 November 2019, RES projects having already entered into FiP contracts became participants of the day-ahead market, either directly or through a RES aggregator ("**FOSE**"), and are now operating subject to clearance and settlement procedures. RES projects participating in the day-ahead market undertake commitments for the accurate prediction of the declared injected quantity of power, following implementation of the intra-day and balancing markets (having entered into FiP contracts or the FOSE through which the producers are represented in the electricity wholesale market), and have undertaken standard balancing obligations. In September 2019, DAPEEP was appointed as the last resort FOSE, offering RES producers more favourable representation terms until 31 December 2022.

Law 4685/2020 attempted the fundamental reform of the energy licensing and the regulatory regime, dealing with administrative inefficiencies of the previously applicable rules and providing a safe legal environment for prospective investors, particularly in the RES sector. The main novelties introduced by Law 4685/2020, which focused on the overhaul of the RES licensing framework, include the following: (a) the RES production licence was replaced by a certificate issued digitally through a fast-track procedure; (b) the duration of environmental licences was extended from 10 to 15 years, while deadlines for the issuance of environmental licences were largely shortened; (c) various restrictions for the use of land were wholly or partially lifted; and (d) new deadlines for several milestones of the licensing procedure were set.

As part of the Government's effort to contain the growing congestion of RES licences and pending applications and, effectively, to limit the number of future producers by testing their financial capacity, Law 4819/2021 imposed certain significant obligations on the developers of early-stage RES and CHP projects. Following the enactment of the new law, in order for RAE to issue a Producer's Certificate or a Special Project Certificate, applicants are now under the obligation to submit a Letter of Guarantee equal to €35,000/MW to RAE. The following categories of projects are exempt from such obligation: (a) stations with a maximum production capacity of up to 1 MW; (b) stations that have either been qualified as strategic investments under Laws 3894/2020 and 4608/2019 or in relation to which a relevant application was filed with Enterprise Greece before 23 July 2021; and (c) stations developed by municipalities, prefectures, foundations, and public-benefit institutions (including healthcare facilities and schools but excluding energy communities). An exception is provided for licence holders who submitted a complete application for the issuance of a Binding Grid Connection Offer to the competent grid operator for the relevant project by 15 April 2022 at the latest.

Further to the first-phase licensing simplification effected by Law 4685/2020, the new Law 4951/2022 was enacted, overhauling the RES licensing framework and further reforming the Greek energy market. More specifically, based on Law 4951/2022: (a) numerous amendments were introduced, aimed at reducing the average licensing time for RES projects from five years to 14 months; (b) measures were adopted for the management of available grid capacity both at the level of IPTO's power transmission system and HEDNO's distribution network; (c) a special grid connection priority framework was introduced and further implemented through Ministerial Decision 4333/12.08.2022 of the Ministry of Environment and Energy in an effort to transparently resolve the grid congestion bottleneck; (d) a completely new framework regulating energy storage was introduced, opening the door to investment in standalone storage as well as hybrid projects; (e) a set of provisions laid the groundwork for the development of offshore solar plants, initially launching a first bundle of up to 10 pilot PV projects; and (f) the legal framework governing GOs was substantially amended, streamlining the relevant trading market.

Law 4513/2018 set the legal framework for the establishment of energy communities, aiming to promote social economy, solidarity, innovation and sustainability in energy, as well as to increase energy efficiency in the final consumption of local communities. Energy communities are incorporated as civil law partnerships by local individuals, public and private legal entities and/or municipal/regional authorities. Further, energy communities may deal in the production, storage, self-consumption, sale of electricity or heating/cooling derived from RES or HE CHP within the region of their registered seat. An energy community may also take up management of raw materials used in the production of electricity or heating/cooling from biomass, biowaste, or biofuel, procurement of high-efficiency appliances, installations and electric, natural gas, LNG or biofuel-fuelled vehicles, as well as power and natural gas distribution and supply. By way of several legislative amendments following the introduction of energy communities into the Greek market, various incentives have been granted to projects developed by such communities, including privileged grid connection potential, limited financial obligations (guarantees submitted to the competent authorities) and tariff-related benefits.

Another central development was the enactment of Law 4710/2020 in July 2020, introducing for the first time a fully fledged legal framework to govern the Greek e-mobility market. This new law enabled the installation of publicly accessible EV charging stations in existing fuel stations, shopping centres, supermarkets, parking lots, as well as in public buildings and along motorways or highways. Further, Law 4710/2020 provided for the establishment of EV charging operators, expected to primarily develop their own recharging stations at new, designated locations. The various incentives to be offered under Law 4710/2020 and its implementing acts, including granting of subsidies to private users (indicatively, reduction of VAT for the purchase of EVs), tax benefits, as well as the introduction of traffic privileges for the use of EVs, are expected to be instrumental in encouraging drivers to use EVs.

On the route to adopting the Gas Target Model, as well as to achieving DESFA's strategic objective of creating a regional gas hub in Greece, a significant development in the natural gas field was the launch of the HEnEx Natural Gas Trading Platform in 2022, allowing for the first time the conduct of anonymous transactions for natural gas in the national system. The platform is expected to serve as a key tool to the future integration of renewable gases and other innovative products into the Greek wholesale market. Previously, a virtual trading point started operating at the NNGTS in 2018. With the activation of the virtual trading point, natural gas traders not involved in physical trading were offered for the first time the possibility to operate in the Greek market, since it became possible to carry out transactions irrespective of whether they had contracted capacity at entry/exit points.

In May 2022, the first-ever National Climate Law (Law 4936/2022) was enacted, setting forth a roadmap for the gradual reduction of greenhouse gas emissions and carbon neutrality by 2050, in compliance with the relevant EU target. The new law: (a) provided for additional targets to limit greenhouse emissions by at least 55% by 2030 and 80% by 2040, as compared to 1990; (b) set the goal of cutting dependency on fossil fuels by 2028, subject to security of supply concerns; (c) imposed several obligations on transition to zero-emission vehicles, setting specific quotas and deadlines; and (d) mandated certain large corporations (financial institutions, telecom providers, electricity suppliers, water and waste utilities, logistics companies and retail businesses) employing over 500 employees to comply with stricter environmental standards and annually report their carbon footprint status.

Finally, a milestone legislative development was the introduction in July 2022 of a legal framework for the development of offshore wind plants in Law 4964/2022 under the title "*Simplification of environmental licensing, establishment of a framework for the development of offshore wind farms, addressing the energy crisis, forestry protection and other provisions*". Based on this new law, state-owned Hellenic Hydrocarbon Resources Management ("**HHRM**") will be vested with the responsibility of coordinating and handling the overall process of developing offshore wind farms, thus being renamed Hellenic Hydrocarbon Resources and Energy Resources Management. As part of its new role, HHRM will manage offshore concessions, following conduct of technical studies aimed at locating the optimal marine zones/areas. Both the right to develop a wind farm in a specific sea plot and the financial operating aid will be awarded through open tenders, due to take place in the coming years.

## Judicial decisions, court judgments, results of public enquiries

Following the introduction of price adjustment clauses by the majority of the country's power suppliers in August 2021, energy consumers suffered significant increases in their electricity bills and massive reactions against retailers arose, mainly due to alleged lack of transparency in the determination of the final payable amounts. In particular, several complaints by customers were submitted to power retailers, while a class action was filed against PPC by customers claiming that they are unable to calculate and monitor the final cost of their electricity bills, despite PPC claiming that the price adjustment derives from a transparent mathematical formula. Following the first court hearing for the *Consumers' Association – Quality of Life vs PPC* class action on 6 July, PPC was prohibited from cutting off power to vulnerable households failing to pay their bills (containing price adjustment clauses) pending a final verdict. Further, lawsuits by customer unions and other professional unions were filed, requesting the annulment of the price adjustment clauses. In response to these vehement reactions, the Government temporarily suspended price adjustment clauses, effective from August 2022 to July 2023 (Article 138 of Law 4951/2022) and facilitated the right of customers to frequently switch power suppliers, depending on the competitive prices offered on the market.

On a slightly relevant note, a judgment of the Council of State (the supreme administrative court of Greece) issued in 2020 was critical in the formulation of the legal framework governing the Greek retail electricity market and more specifically, the change of power suppliers by customers. By way of this ruling, the below provisions of Ministerial Decision 177367/2016 were annulled: (a) a provision based on which a customer willing to shift to another power supplier could only terminate the existing power supply contract provided that there are no outstanding debts to the existing supplier; and (b) the provision that a debt settlement plan has been agreed upon with the existing power supplier. The same Ministerial Decision provided that if the indebted customer failed to make the scheduled settlement payments on the relevant due dates, the previous supplier could request HEDNO to cut off such customer's power supply, even though a new power supply contract with the new supplier was in place. These provisions were annulled by the Council of State on the grounds that they impose extremely onerous and disproportionate restrictions on customers.

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**Endnotes**

1. Residual Energy Mix 2021 – English short version (https://www.dapeep.gr/wp-content/uploads/2022/09/Residual%20Energy%20Mix%202021%20-%20English%20short%20version.pdf?_t=1662359071).
2. Joint Ministerial Decision YPEN/DHE/70248/2434/05.07.2022 on "Determination of methodology and mathematical formula", for the calculation of the administratively determined unit price for each category of production units and for RES portfolios in the context of the operation of the Temporary Mechanism for the Partial Return of the Day-Ahead Market Revenue (Electricity) in accordance with Article 12A of Law 4425/2016.

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