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Legal Framework of RES industry in Greece Licensing Procedure and Electricity Contracts

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ABSTRACT

Renewable Energy, including solar, wind, hydro, biofuels and others, is at the center of the transition to a less carbon-intensive and more sustainable energy system. Renewables have grown rapidly in recent years at both international and national level, driven by policy support and sharp cost reductions for solar photovoltaics and wind power in particular. The electricity sector remains the brightest spot for renewables with the strong growth of solar photovoltaics and wind in recent years, building on the already significant contribution of hydropower. But electricity accounts for only a fifth of global energy consumption, and the role of renewables in the transportation and heating sectors remains critical to the energy transition. Exploitation of renewables to generate energy and produce electricity is simultaneously suggested for the last couple of decades as a viable alternative in mitigating climate change. Energy, where renewable energy is a branch, is generally regulated and governed domestically and so, international legal regime is still evolving in this regard.

In this backdrop, this paper aims to introduce reformative prospects of the alternative route of usage of renewable sources as massive form of energy efficiency. Prospects and challenges in their promotion that may help to mitigate the adverse effects of climate change are to be analyzed. Relevant international and law provisions will be thoroughly exposed and evaluated, performances of the relevant regional and international organizations active in this sector are highlighted and some of the disputes in this area considered in international forums are duly addressed.

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Part I- Legal Framework

1.1. Introduction

The purpose of the herein dissertation is to provide a conceptual critique of the current framework and procedures regarding the growth of renewable energy projects in Greece. Firstly, critiques the abundant renewable energy policies and 'soft' law at the international level, while reviewing the current International and European legislation in order to appoint the degree of Greek government's liability derived from it.

Secondly, examines thoroughly the licensing procedure of all kinds of renewable energy projects according to the current Greek legal provisions in this filed, as part of the solution to pressing issues of energy security, sustainable development and climate change.

Furthermore, appoints specifically the financial potentials of RES projects once given license to occur.

Finally, acknowledges the putative challenges of Offshore Wind parks, as well as late payment issues that arise via the base of sale and purchase contracts.

Energy is considered as a 'strategic commodity' as uncertainty in its supply may disrupt proper economic functioning. With the passage of time and progress in every sector propelled by the scientific innovations, the global community has realized the importance of energy development in a sustainable and responsible manner. There may be differences in statistics in terms of production, supply, demand and consumption. It can be declared that energy is the pre-requisite in running most of the development activities.

Climate change is a ‘common concern of mankind’ and a threat to sustainable development. Conventional fuel energy production and consumption are responsible for 60% or almost two-thirds of the world’s greenhouse-gas (“GHG”) emissions which account for the global warming leading to climate change. Therefore, scientifically, it is suggested that two-thirds of all fossil fuels, i.e., 35% of oil, 52% of natural gas and 88% of coal reserves worldwide, must be kept in the ground till 2050 to maintain the temperature below.

Moreover, in global energy generation and consumption, it is suggested to replace these fuels or at least increase the share of cleaner and pollution-free energy that can be generated exploiting the new, alternative and renewable energy sources (hereinafter referred to as “RES”) like solar, wind, hydropower, ocean and biomass.

According to IEA’s Global Energy Review 2020 *“Renewable energy has so far been the energy source most resilient to Covid-19 lockdown measures. Renewable electricity has been largely unaffected while demand has fallen for other uses of renewable energy. In Q1 2020, global use of renewable energy in all sectors increased by about 1.5% relative to Q1 2019. Renewable electricity generation increased by almost 3%, mainly because of new wind and solar PV projects completed over the past year and because renewables are generally dispatched before other sources of electricity. Along with depressed electricity demand, power grids have managed heightened shares of wind and solar PV. The use of renewable energy in the form of biofuels declined in Q1 2020 as consumption of blended fuels for road transport fell. We estimate that total global use of renewable energy will rise by about 1% in 2020. Despite supply chain disruptions that have paused or delayed activity in several key regions, the expansion of solar, wind and hydro power is expected to help renewable electricity generation to rise by nearly 5% in 2020. This growth is smaller than anticipated before the Covid-19 crisis, however. A faster recovery would have a minimal impact on renewable energy production, though it would enable more new renewables-based projects to be completed. If recovery is slower, renewable energy would still increase, making renewables the energy sources the most resilient to the Covid-19 current crisis.”*

1.2. International Law Provisions

In the context of energy, International Law has had a growing impact on domestic activities, either directly or indirectly. Several states have voluntarily entered into multilateral environmental agreements, due to the need for collective efforts to resolve the trans-boundary impacts of domestic activities. States have also accepted economic and trade agreements that affect domestic choice, including international regulation of activities related to fossil fuel and nuclear power.

Contrary to these uniformly ratified agreements withstands the principle of a State's permanent sovereignty over its natural resources. The aforementioned procedure is a customary rule established during decolonization that recognizes states undoubted right to dispose their natural wealth and resources in accordance with their national interests. This principle weakens the efforts for a united international legal framework concerning domestic energy activities. Sovereignty over natural resources is balanced though by principles of international environmental law, specifically the customary international law obligation not to cause significant trans-boundary harm to other states.

In 1991, establishes the first applicable law document under the name of European Energy Charter. It provided the political foundation for the Energy Charter Process. Indicative stands that later on, specifically in 1994, a binding agreement arouses, known as the Energy Charter Treaty, hereinafter ECT. The ECT entered into force in April 1998, and was developed on the basis of the European Energy Charter, but whereas the European Energy Charter was a declaration of political intent to promote East-West energy cooperation, the ECT is a legally binding multilateral instrument. Furthermore, it is dealing with intergovernmental cooperation in the energy sector.

In 2002, energy was linked to energy security, climate change and sustainable development. Notions as intergovernmental policy and international action on renewable energy arouse as topics of great interest. Spurred by an express

renewable energy political agenda, over 118 countries went on to implement domestic renewable energy laws and policies to varying degrees. As a result, from this movement, arose the first major non-binding international instrument, to wit the Johannesburg Plan of Implementation (hereinafter called “Johannesburg Plan”).

There is no single international organization with a mandate to regulate all energy matters. There are though several International Organizations such as UN-Energy, IRENA, OECD, International Energy Agency, World Bank, which remain fundamental to renewable energy governance, and interpose for international renewable energy cooperation. The number of non-state actors that influence the development of international law related to energy has increased significantly in recent history. Non-governmental organizations, such as Renewable Energy and Energy Efficiency Partnership, Renewable Energy Policy Network for the 21st Century, political conferences, and United Nations’ agencies and programs withstand a critical role on renewable energy matters. Low- carbon economy is also supported by more and more International financial institutions.

The intergovernmental International Conference established in 2004 in Bonn, is of particular significance. This conference attributed mostly to the progression of domestic renewable energy policy by raising awareness and facilitating the global exchange of policy and technology experience.

Since 2005, renewable energy has gained considerable attention via political forums such as G8 and G20’. Despite the fact that the aforementioned moves shine a light on the clean energy field, the commitments that arose are general and indistinct. There are no concrete international provisions to marshal global cooperation for the promotion of renewable energy. As a soft law instrument, a declaration could be a ‘probationary’ precursor to the development of hard law on renewable energy. By contrast, adoption through political or private processes would be likely to lessen a declaration’s legal significance, altering normative influence.

Five International Renewable Energy Conferences have been held by the governments of Germany, China, United States, India, and the United Arab on the

issue of renewable energy. The first IREC was convened in Bonn and paved the way to its successors by producing a Declaration that already went well beyond what fragmentarily expressed by previous UN Conferences by clearly stating that renewable energies combined with energy efficiency, can significantly contribute to sustainable development, to providing access to energy, especially for the poor, to mitigating greenhouse gas emissions, reducing harmful air pollutants, thereby creating new economic opportunities, and enhancing energy security through cooperation and collaboration.

An international agreement aiming to stabilize energy matters firstly appeared on 2015. International Energy Charter declaration is a non-binding political declaration that updates the ECT and lifts the Energy Charter Process to a global level. The foundation of International Energy Charter is the cooperation between the signatory states. Thus, a contradictory fact remains the issue of not bearing any legally binding obligation or financial commitments between the signatory states. The aforementioned declaration was formally adopted and signed at the Ministerial Conference in Hague in 2015 (<https://www.energycharter.org>)

More precisely, it maps out common principles for international cooperation in the field of energy and reflects some of the most topical energy challenges of our century. In particular, it appoints the full scope of multilateral documents and agreements on energy developed in the last two decades, as well as the synergies among energy-related fora, in view of further action. It is also dealing with the growth of developing countries and how that reflects to global energy security. Furthermore, suggests the problematic between energy security, economic development and environmental protection. Last but not least, the Charter reflects the effort for a uniform policy regarding sustainable development, promotion of access to modern energy services, energy poverty reduction, usage of clean technology, building capacity, and need for diversification of energy sources. Plenty of countries all over the world acknowledged and signed the abovementioned agreement.

It is also estimated by IEA that within 2020, renewable energy demand increases by about 1% from 2019 levels, in contrast to all other energy sources.

Renewable electricity generation grows by nearly 5% despite the supply chain and construction delays caused by the Covid-19 crisis.

1.3. European Law Provisions

European Energy Charter, as mentioned and analyzed above under section 1.1. of Part I, is a declaration of the principles that underpin international energy cooperation, based on a shared interest in secure energy supply and sustainable economic development.

Apart from fundamental European Treaties that shed a light on the field of energy procedures, European Union has also issued several Directives aiming to guide all Member States to a similar path.

First renewable energy directive was the 2009/28/EC, and did establish an overall policy for the production and promotion of energy from renewable sources in the EU. This specific documentation was aiming to fulfill at least 20% of EU's total energy needs with renewables by 2020, to be achieved through the attainment of individual national targets. All EU countries should also ensure that at least 10% of their transport fuels come from renewable sources by 2020.

Furthermore, in December 2018, the revised renewable energy directive 2018/2001/EU entered into force, as part of the clean energy for all Europeans package, aimed at keeping the EU a global leader in renewables and, more broadly, helping the EU to meet its emissions reduction commitments under the Paris Agreement. The new directive establishes a new binding renewable energy target for the EU for 2030 of at least 32%, with a clause for a possible upwards revision by 2023.

Under the new Governance regulation, which is also part of the clean energy for all Europeans package, EU countries are required to draft 10-year National Energy & Climate Plans (NECPs) for 2021-2030, outlining how they will meet the new 2030 targets for renewable energy and for energy efficiency.

As appointed by the European Union reports, national action plans and progress reports have shown that the Directive 2009/28/EC specifies national renewable energy targets for 2020 for each country, taking into account its starting point and overall potential for renewables. These targets range from a low of 10% in Malta to a high of 49% in Sweden. EU countries have set out how they plan to meet 2020 targets and the general course of their renewable energy policy in national renewable energy action plans.

There are several cooperation mechanisms appointment via Directive 2009/28/EC, such as statistical transfers of renewable energy, joint renewable energy projects, joint renewable energy support schemes, and sustainable biofuels.

European Union issued on 11 December 2018 Regulation 2018/1999 of the European Parliament and of the Council on the Governance of the Energy Union and Climate Action, amending Regulations (EC) No 663/2009 and (EC) No 715/2009 of the European Parliament and of the Council, Directives 94/22/EC, 98/70/EC, 2009/31/EC, 2009/73/EC, 2010/31/EU, 2012/27/EU and 2013/30/EU of the European Parliament and of the Council, Council Directives 2009/119/EC and (EU) 2015/652 and repealing Regulation (EU) No 525/2013 of the European Parliament and of the Council.

In November 2016, the Commission submitted a proposal to rewrite the Directive on the Promotion of Renewable Energy Sources (RES). The agreement set a 32% binding target for RES by the EU by 2030. The European Parliament and the Council formally approved the text in December 2018 (Directive (EU) 2018/2001). In addition, consumers' rights to self-consumption of RES have been strengthened, the "energy efficiency priority" principle is going to be a guideline and an indicative annual increase of 1.3% has been introduced for RES in the heating and cooling sector. The European Parliament and the Council formally approved the amended Directive on Renewable Energy Sources (Directive (EU) 2018/2001) in December 2018. Member States must transfer the revised Directive to their national law by 30 June 2021. The revised Directive will enter into force on 1 July 2021.

In January 2020, Parliament adopted a resolution on the "European Green Agreement", a green agreement on Europe submitted by the Commission in December 2019. Parliament has adopted a number of recommendations, including a clean economy, affordable and safe energy. In this spirit, he called for a revision of the directive on renewable energy sources and the establishment of binding national goals for each Member State, and recommended that the implementation of the "energy priority" principle be implemented in all areas and policies.

The following table indicates schematically the European path of transmission to renewable energy binding or not provisions.

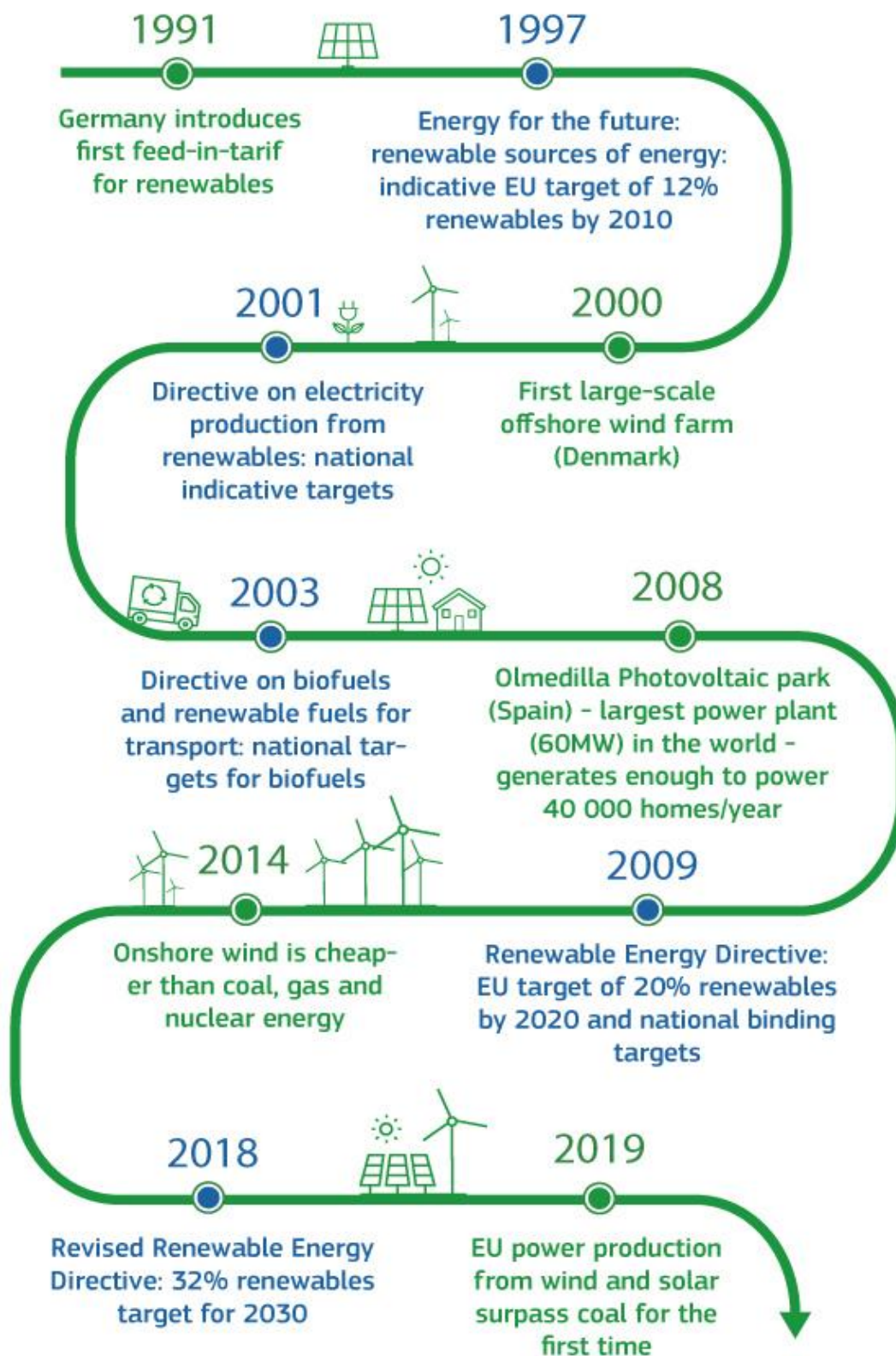


Table 1: Timeline of RES policies within EU

1.4. Cases (Tribunal/Arbitration)

The utilization of renewable energy sources for the production of electricity may lead to disputes involving the impairment of private interests to the benefit of the public interest. Such disputes are settled by domestic authorities and typically do not involve any transnational environmental harm. This is confirmed by the slim record of cases regarding energy generation from renewable sources handled either by the international judiciary or by international extra-judicial means.

A first case appears when the Chamber of the European Court of Human Rights decided on the admissibility of an application concerning the operation of wind turbines and their alleged interference with the enjoyment of the right to private and family life by Swedish nationals.

Another one has been handled by the Aarhus Compliance Committee. On the basis of a communication lodged by an Irish citizen, this body has recommended the EU to better comply with the Aarhus Convention in relation to the implementation of certain aspects of its legislation on the use of renewable energy resources.

An example of Inter- States dispute concerning technologies exploiting renewable energy sources like photovoltaic panels and wind turbines, as objects of international trade, is the case of EU and US against solar panels imported from China. Specifically, the market access of renewable energy products has already resulted in the significant utilization of trade defense instruments, both anti-dumping and countervailing duties.

Furthermore, local content requirements in a Canadian regional policy on clean energy production have led to a long-awaited World Trade Organization (hereinafter called WTO) decision which touches upon the relationship between WTO subsidy rules and climate change incentives.

In the case of *Preussen Elektra AG v Schleswag AG* [2001], Case C-379/98, the Court of Justice of the European Union (“CJEU”) mentioned—“The use of renewable

energy sources for producing electricity is useful for protecting the environment in so far as it contributes to the reduction in emissions of GHGs which are amongst the main causes of climate change . . . ”.

1.5. Implementation of European legislation to national level

As appointed by the National Renewable Energy Action Plan in the scope of Directive 2009/28/EC issued by the Ministry of Environment, Energy and Climate Change, Greece’s Government of 2009 had set as one of its main overarching policy initiatives “green” sustainable development. This political choice has been translated in institutional reform and policy measures that included:

- The establishment of a new Ministry for the Environment, Energy and Climate Change (MEECC), in order to facilitate the effective utilization of the considerable existing renewable energy potential of Greece. The new Ministry replaced two previous Ministries (i.e. the Ministry of Environment, Physical Planning & Public Works and the Ministry of Development),
- The formal acknowledgment of the priority given to achieving the targets set by Directive 2009/28/EC and by international commitments of the country for the protection of the environment,
- The adoption by Parliament of Law L3851/2010 which came into effect on 4th June 2010 and in which ambitious national targets for RES (namely 20% on final energy consumption, 2% above the mandatory level of 18% set by Directive 2009/28/EC) are specified.

European Commission issued on June 2019 a recommendation specifically addressed to the Greek government on the draft integrated National Energy and Climate Plan of Greece covering the period 2021-2030 (2019/C 297/08). After revising the above mentioned document EU Commission officially recommends that Greece takes action in order to:

- “Enable a timely and cost-effective achievement of Greece's 31 % contribution to the EU 2030 target for renewable energy, by including in the final plan, among others, an indicative trajectory that reaches all the reference points pursuant to Article 4 of the Regulation, and provide detailed and quantified policies and measures complying with the obligations laid down in Directive (EU) 2018/2001.
- Substantially increase its ambition towards reducing both final and primary energy consumption in view of the need to increase the level of efforts to reach the Union's 2030 energy efficiency target and support these with policies and measures that would deliver additional energy savings by 2030. Clarify the timeline for the adoption and implementation of the policies foreseen to be in place as of 2020, especially for the new instruments. The measures foreseen to achieve the cumulative savings goal should be designed at an adequate scale.
- Specify the measures supporting the energy security objectives on diversification and reduction of energy dependency, including measures ensuring flexibility, in particular regarding natural gas. Include an assessment of how the infrastructure projects and regional cooperation contribute to the energy security objectives, also making use of regional cooperation and flexibilities to use the opportunities presented by reducing greenhouse gas emissions for the modernization of the Greek economy.
- Include forward-looking objectives and targets concerning market integration, in particular measures to increase competition in the retail and wholesale markets, in line with its commitment under the European Stability Mechanism (ESM) programme of reducing, by 2020, the incumbent's retail and wholesale market shares below 50 %. Implement the electricity target model and market coupling with neighbors, based on the timelines agreed under the post programme surveillance mechanism.

- Further quantify the national objectives and funding targets in research, innovation and competitiveness, specifically related to the Energy Union, to be achieved between now and 2030, so that they are readily measurable and fit for purpose to support the implementation of targets in the other dimensions of the integrated national energy and climate plan. Underpin such objectives with specific and adequate policies and measures, including those to be developed in cooperation with other Member States, such as the Strategic Energy Technology Plan.
- Intensify the already good regional cooperation arrangements with Bulgaria and Cyprus as well as with the Central and South Eastern Europe Energy Connectivity (CESEC) countries. In the context of the ‘Clean Energy for EU Islands’ initiative, enhance cooperation with Member States and island regions facing similar geographic, climatic and infrastructure related challenges and opportunities in their energy transition. Explore the cross-border potential and the macroregional aspects of a coordinated energy and climate policy notably in the Adriatic-Ionian with the aim of reducing the region's carbon footprint and implementing an ecosystem approach. The focus of the regional exchanges could be on internal energy market and energy security areas, in view to the changes in the electricity systems accommodating higher shares of renewable electricity, which will increase electricity import and export and enhance the need for system flexibility. In addition, make use of bilateral cooperation and flexibilities to use the opportunities presented by reducing greenhouse gas emissions for the modernization of the Greek economy.
- List all energy subsidies, including in particular for fossil fuels, and actions undertaken as well as plans to phase them out.
- Complement the analysis of the interactions with air quality and air emissions policy with more quantitative information, at least including

the required information about the projected air pollutants emissions under the planned policies and measures.

- Integrate just and fair transition aspects better, notably by providing more details on social, employment, skills and training impacts of planned objectives, and policies and measures. Provide more detailed information on the projects to support a just and fair transition, specifying the form of support and the impact of the initiatives, also making the link to the transition of coal, carbon-intensive or industrial regions. Further develop the approach to addressing energy poverty issues as required by the Regulation (EU) 2018/1999.”

1.6. Legal Framework and precise energy provisions in Greece

First legally binding Greece’s documentation was National Law 2244/94 - "Regulation of power generation issues from renewable energy sources and conventional fuels and other provisions”, followed by Law 2773/1999 - “Liberalization of the Electricity Market Regulation of energy policy issues and other provisions”. In 2006 was also issued Law 3468/06 “Generation of electricity from renewable energy sources and through high-efficiency co-generation of electricity and heat and miscellaneous provisions”.

Other legislative/regulatory provisions regarding RES are:

- Biofuels in transport (L. 3423/2005, L.3653/2008, L.3734/2009 and L.3769/2009),
- Special Physical Planning Framework for the development of RES and land management (Official Government Gazette B’ 2464/2008),
- Framework for the installation of PVs on buildings and open yards (MDs 16094/8.4.2008, 16095/8.4.2008 and 29107/7.7.2009) & Framework for the installation of PVs beyond limits of existing zoning plans (29116/7.7.2009),

- L. 3661/2008 “Measures for the building energy consumption reduction”,
- Official Government Gazette 1122/B/2008: "Measures to improve energy efficiency and energy saving in the public and broader public sector”,
- L. 3734/2009 “Promotion of co-generation of two or more energy sources, regulation of issues related to Mesochora hydroelectric plant and other provisions” - Mandatory deadlines for RES licensing procedure,
- Special Programme for the deployment of Photovoltaics up to 10kW on buildings and especially roofs (Official Government Gazette B’ 1079 /4.6.2009)
- Energy Performance of Buildings Regulation KENAK (Official Government Gazette 407/B/2010)
- L3851/2010 (Official Government Gazette 85/A/04-06-2010) on “Accelerating the development of Renewable Energy Sources to deal with climate change and other regulations in topics under the authority of the Ministry of Environment, Energy and Climate Change” that amends significant provisions of the previously applicable legislation, aiming at simplifying the licensing procedure, rationalizing the feed-in-tariff scheme, tackling existing barriers at local level, and establishing specific regulations for the use of RES in buildings in accordance with the approved “Energy Performance of Buildings Regulation” ,
- Feed-in-tariff scheme per kWh of electricity produced by RES (Laws 2244/1994, 3468/2006, 3851/2010),
- Law 3855/2010 “Measures to improve energy efficiency in end-use, energy services and other provisions”, articles for public buildings and development of the ESCO market,
- L. 4014/2011 (Official Government Gazette 209/A/21-9-2011). “Environmental licensing of projects and activities, regulation of

arbitrariness in connection with the creation of an environmental balance and other provisions of the Ministry of Environment”,

- Law 4042/12 (Official Government Gazette 24/A/13-2-2012) “Criminal protection of the environment - Harmonization with Directive 2008/99/EC - Waste production and management framework - Harmonization with Directive 2008/98/EC - Regulation of YPEKA issues”,
- Number 170225/2014 Ministerial Decision (Official Government Gazette 135/B/2014) “Specialization of the contents of environmental licensing files of projects and activities of Category A '...”,
- Law 3468/27.06.06 (Official Government Gazette 129/A/2006) on "Electricity Generation from Renewable Energy Sources and High Performance Electricity and Heat Production",
- Ministerial Decision 1958/2012 (Official Government Gazette 21/B/12-1-2012) classification of public and private projects and activities into categories and subcategories according to Article 1, paragraph 4 of Law 4014 / 21.09.2011 (Government Gazette A'209 / 2011) ",
- Number 104247 Common Government Decision (Official Government Gazette 663/B/2006) “For the Preliminary procedure, Environmental Assessment and Evaluation and Approval of Environmental Terms of RES projects in accordance with article 4 of L.1650/86 as replaced by the article 2 of Law 3010/02",
- Law 4014/2011 “Environmental licensing of projects and activities arbitrariness in relation to arbitrariness by creating an environmental balance and other provisions of the Ministry of Health environment, Environmental licensing of projects and activities arbitrariness in relation to arbitrariness by creating an environmental balance and other provisions of the Ministry of Health environment”,
- Law 4414/2016 (Official Government Gazette 149/A/2016) “New support regime for the stations Renewable electricity generation with Energy Sources and Co-Production of Electricity and High Performance

Heat - Legal Provisions and functional segregation of supply sectors and distribution in the gas market and other provisions”,

- Law 4643/2019 (Official Government Gazette 193/A/03.12.2019) “Liberation of the energy market, modernization of PPC, privatization of DEPA and support of RES, and other provisions”.
- Number 28857/1083 Common Ministerial Decision (Official Government Gazette 940/B/20-03-20) “Defining a special priority framework in granting final Link Offers for RES and SITHYA stations by the Administrator of the Network, by way of derogation from any other gen or special provision, including of the provisions of article 9 of law 3775/2009 (A’ 122), of law 3894/2010 (A’ 204), of law 4608 /2019 (A’ 66) and paragraph 6 of Article 11 of Law 4513/2018 (A’ 9), as well as of the first and third paragraph of paragraph 4 of Article 8 of Law 3468/2006 (A’ 129), according to the article 44 of Law 4643/2019”.
- Ministerial Decision number 1097/2019 (Official Government Gazette 1048/B/27-03-2020) “Approval of the Ten-Year Development Plan (National Transportation System) Electricity for the period 2019 -2028”
- Management Code of the Hellenic Electricity Transmission System which was approved by the Decision of the RAE with Number 57/2012 (Government Gazette 103/B/31.01.2012)”,
- the Electricity Transaction Code (Electricity Transaction Code) which was approved by the Decision of the RAE with Number 56/2012 (Government Gazette 104/B/31.01.2012),
- the Ministerial Decision with Number D6/F1/13310/2007 "Procedure for issuing licenses for installation and operation of power plants using renewable energy sources" (Government Gazette 1153/B/10.07.2007),
- Law 4685/2020 (Government Gazette 92/A/07.05.2020) “Modernization of environmental legislation, integration into the Greek legislation of the Directives 2018/844 and 2019/692 of the European Parliament and of the Council and other provisions”,

More specifically, in national level, the first regulation on the production of electricity from RES is contained in Law 2244/1994, according to which the production of electricity is allowed, among other things by RES, and the electricity produced could be allocated exclusively to a public power corporation (PPC), which was obliged to purchase. Provisions for RES were also included in Law 2773/1999 which introduced the obligation to obtain a license for the production of electricity from renewable energy sources. In order to promote production, it was obligatory for the transmission system operator (TSO) to give priority to their dispatch, whereas in the non-interconnected islands, PPC, as the administrator of the distribution network, was also obliged to absorb the electricity produced from RES. A relevant contract should be concluded with the TSO, or in the case of non-interconnected islands, with the distribution network operator (PPC). The price of the absorbed electricity has been provided to the producers themselves by the competent operator and is recovered from them through a special RES Account, the management of which was assigned to the Hellenic transmission system operator (HTSO, DESMIE) and its resources were determined by the Law.

More significant national legislation on RES was the Law 3468/2006, via which provisions European Directive 2001/77/EC was incorporated in the Greek legal system. Through this law, the framework for the production of RES electricity became autonomous from the general framework for electricity. Priority in absorption of the RES-electricity was maintained, aiming to achieve national RES targets. In detail, the target of RES electricity contribution in total final gross electricity consumption was set at 20.1% by 2010 and 29% by 2020.

Law 3734/2009 foresaw a progressive decrease of the Feed in Tariffs (FIT) for each semester and extended the duration of the power purchase agreements (PPAs) from 10 to 20 years.

With Law 3851/2010, the objective of RES participation in total energy consumption according to Directive 2009/28/ EC was adopted as national target. Electricity produced from RES was rationalized, and in parallel simplified RES licensing procedure. Ministry of Environment, Energy, and Climate Change set the limits of installed capacity and its breakdown by RES technology and producer category, as well as the process of any necessary suspension of RES licensing, in case

these limits are exceeded. Several other Ministerial Decisions were issued via which was defined the national targets and the projected proportion of installed capacity per RES technology for the years 2014 and 2020.

Under Law 4001/2011, the existing regulations were basically maintained and adjusted in the new market structure. Thus, Hellenic Electricity Market Operator (LAGIE) and Hellenic Electricity Distribution Network Operator (DEDDIE) in order to sale electricity of RES producers have had to lawfully contract according to the provisions of Law 3468/2006. Additionally, the authority of determining the numerical values of the rates for specifying the special RES Levy (ETMEAR in Greece) on consumers' bills was transferred to the Regulatory Authority for Energy (RAE).

Through Law 4042/2012, a special fee paid by the lignite electricity producers was added to the resources of the RES Account amounting 2 Euros/MWh for lignite produced electricity.

Law 4152/2013 also introduced the concept of minimum floor income from the wholesale market for the RES account on the basis of the corresponding weighted average variable cost of conventional thermal units in the interconnected system, for the MWh infused by RES. The aim was that the minimum compensation to the RES account for the production of renewables should at least correspond to the avoided (theoretically) WAVCCTU.

By Law 4254/2014, the tariffs for the sale of the RES projects in operation were unilaterally redefined in spite of the signed contracts in operation, for the purpose of downward harmonization–homogeneity of the economic returns (Project IRR) of the projects of all technologies in a period of 20 years and the stabilization of the RES account through the permanent containment of its outflows.

According to Law 4414/2016, in compliance with the European Commission's Guidelines for State Aid, the aim for new renewable projects and their remuneration schemes was to converge and integrate better to electricity market operation at an optimum level of cost for the consumer, which would closely follow the declining cost of each relative renewable technology separately. Towards this direction, the FIT scheme was replaced with a sliding Feed-In Premium (FIP) model. New Reference Tariff prices introduced for each RES technology. With Law 4602/2016, Greek Government limited the ability of investors to enjoy, both directly and indirectly

through affiliated companies, to only two per technology. All the rest should participate in RAE's auctioning processes to get a RT. The number of projects eligible to succeed in the auction through offering the lowest prices was limited.

Beginning 2019, through its new national plan for RES penetration in final gross energy consumption as submitted to European Union, Greece set the target at 32% towards 2030.

In order to reach all the above proclamations and obligations Greek government adopted new legislation eligible to move towards this exact direction. In Part II will be examined thoroughly the new procedure, as well as the main alterations of the prevalent steps.

Part II- Licensing Procedure

2.1. Main stakeholders

Greece's governmental mechanisms, Institutions, and authorities that have a critical role in licensing mechanism are the following:

- **Regulatory Authority for Energy (RAE)**

The Regulatory Authority for Energy (RAE) is an independent authority, with financial and administrative independence under the supervision of Ministry of Energy. RAE monitors the operation of the energy markets, including electricity from RES. It issues opinions on electricity retail tariffs as well as access tariffs to electricity transmission and distribution networks. It is responsible for granting production licenses for electricity generation from RES. RAE also acts as a dispute settlement authority with respect to complaints against transmission or distribution system operators in the electricity sector. Energy Regulatory Authority (RAE) is also the Institutional Licensing Agency for RES and SITHYA A Phase 1.

Relevant legislation that appoints the operation and responsibilities of RAE derives from Law 4001/2011 (PART A'). Various revisions derive from prevalent legislation (such as Law 4685/2020).

- **Renewable Energy Sources and Guarantees' Manager (DAPEEP SA) – Former Operator of the Electricity Market (LAGIE)-**

DAPEEP manages RES, High Efficiency Electricity, as well as Heat Cogeneration (SITHYA) of the National Interconnected System, as well as the Guarantees of Origin of electricity produced by RES and SITHYA. It is the auctioneer of the rights of pollutants in Greece, while at the same time it operates as a Cumulative Representation Body (FOSE) of RES producers. Former entity of DAPPEP is considered the Operator of Electricity Market (also known as LAGIE SA). DAPEEP aims in meeting the current challenges in the field of Renewable Energy Sources, while it is the largest shareholder in the Hellenic Energy Exchange and the second largest seller after PPC.

- **Public Power Corporation (PPC)**

The Public Power Corporation (PPC) Group consists today of five companies with separate legal and managerial identities: PPC S.A., DEDDIE, PPC Renewables, LIGNITIKI MEGALOPOLIS S.A., and LIGNITIKI MELITIS A.E. The PPC Group currently holds assets in lignite mines, power generation, transmission and distribution. PPC S.A. is the biggest power producer and electricity Supply Company in Greece with a market share of around 63,2 % (last update within October 2020). PPC's current power portfolio consists of conventional thermal and hydroelectric power plants. PPC is active also in RES sector, through its subsidiary company PPC Renewables S.A.

- **Independent Power Transmission Operator (IPTO- also known as ADMIE)**

The Independent Power Transmission Operator S.A. (IPTO) was established under the provisions of Law 4001/2011. It is organized and operates as an Independent Transmission Operator in line with the provisions of EU Directive 2009/72/EC. The Company has the responsibilities and performs the duties of Owner and Operator of the Hellenic Electricity Transmission System (HETS), in accordance with the provisions of L. 4001/2011, the requirements in the Grid Code, and the HETS operation license. IPTO's compliance with the requirements applicable to the Independent Transmission Operator model was certified by the Regulatory Authority for Energy (RAE in December 2012).

The mission of IPTO is the operation, control, maintenance and development of the Hellenic Electricity Transmission System, to ensure the country's supply with electricity in an adequate, safe, efficient and reliable manner, as well as the operation of the electricity market for transactions outside the Day Ahead Scheduling, pursuant to the principles of transparency, equality and free competition. IPTO applies to the Ownership Unbundling model and is fully harmonized with Directive 2009/72/EC. The terms of the connection agreement specify the minimum specifications regarding the method of connection to the System and ensuring the smooth operation of the System at the connection point, the type of signals and indications to be provided to IPTO by each User, and the terminology and nomenclature requirements used for all installations and machinery connected to the System. IPTO has also the necessary know-how and infrastructure to control compliance with the System specifications of the projects required to connect to the RES Producers' System, in particular for equipment control and receipt procedures, including testing and receipt of equipment, as well as operation tests.

- **Hellenic Electricity Distribution Network Operator (HEDNO- also known as DEDDIE)**

The Hellenic Electricity Distribution Network Operator S.A. (HEDNO/DEDDIE) is a wholly owned subsidiary company model of PPC S.A., that is however independent from its parent company in terms of its management and operation. HEDNO manages the operation, maintenance and development of the electricity distribution network in Greece. This includes the non-interconnected electricity networks as well as the electricity generation facilities on the Greek islands. On the islands, HEDNO is responsible for concluding power purchase agreements (PPA's) with RES producers. HEDNO also manages the access of electricity consumers as well as RES electricity producers to the distribution network.

- **Centre for Renewable Energy Sources and Saving (CRES)**

The Centre for Renewable Energy Sources and Saving (CRES) is a national entity for the promotion of renewable energy sources, rational use of energy and

energy conservation. It was founded in September 1987 as a public entity which is supervised by the Ministry of Environment and Energy and has financial and administrative independence. CRES provides advisory services to the above mentioned Ministry for the definition and implementation of the national renewable energy policy, strategy and planning. It conducts research on new energy technologies and provides technical support for the penetration and implementation of these technologies. CRES also implements European, national and international projects for the promotion and market penetration of new energy technologies.

2.2. Licensing Procedure

2.2.1. Until the issuance of Law 4685/2020

According to Law 3851/2010, the precedent licensing procedure for RES projects could be summarized as follows:

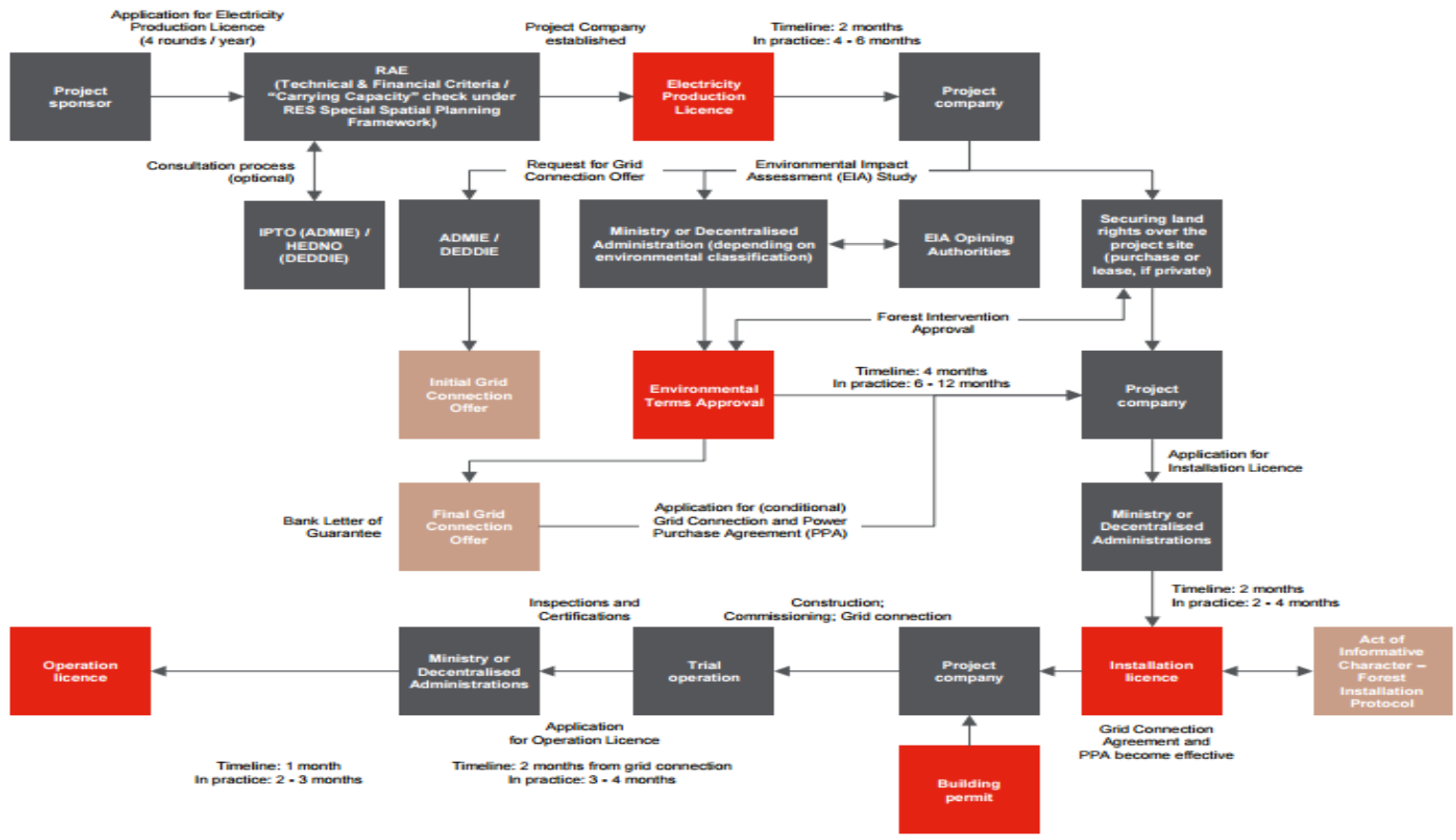
- Large RES projects required a production license, which had to be issued by RAE, an installation license (issued by Ministry of Energy or by local authorities), as well as an operation license (issued by Ministry of Energy or by local authorities).
- Small and medium sized RES projects did not require the above licenses.

Furthermore, there were other licenses that have to be acquired depending on the nature of the project, such as water use license, building permits, and forest land use licenses.

Environmental Terms' Approval (AET), known also under the name of Standard Environmental Commitment (SEC), was required according to the size, technology and location of each RES project. All RES projects had to submit applications for non-binding (only for projects that are obliged for a production and

installation license), and binding connection offers to the competent network operator, to wit the Independent Power Transmission Operator (IPTO), also known as HEDNO.

It was also required to sign a connection contract with the competent network operator (IPTO for the transmission network or HEDNO for the distribution network) as well as a PPA with LAGIE (or HEDNO for the non-interconnected islands).



Schematic presentation of previous RES licensing procedure in Greece

2.2.2. Law 4685/2020 (Official Government's Gazette A' 92/7.5.2020)

Aiming to solve chronic problems of environmental legislation, but also to simplify procedures, Greek legislators formed up the specific legal framework. In addition, green growth investment projects are facilitated and optimal European environmental practices are to be implemented.

Key features of the above mentioned legislation can be summarized as follows:

- Simplification of environmental permits,
- Simplification of RES licensing,
- Forest maps' alterations,
- Settings for residential densities and zoning of natural areas,
- Waste management,
- Extension of a refund fee for the plastic bag.

Until now the licensing for RES projects was considered to last 3-4 years for photovoltaic projects, while for wind energy projects 6-8 years. Production License (first stage of the process) used to take 18-24 months until its final issuance by RAE. Within 2020, more than 1,800.00 applications are pending before the Regulatory Authority for the issuance of a Production License. Should be noted that applications filed in 2018 are still being processed. Thus, simplification and acceleration of the procedure was urgent.

Via the new framework the licensing processing period will be reduced significantly. The production license is expected to be replaced with the Certificate of Electricity Producer, while RAE's plenary session decision will be no longer required. This specific certificate will be issued after a quick and automated process of checking the application, while at the same time a reduction of the required documents at minimum has been established. The new licensing framework will cover both new and pending applications, so that the later can be issued within a few months. This measure aims to reduce the period of Certificate's issuance to less than 6 months.

Furthermore, an alternative information system will supervise the whole procedure. More specifically, Electronic Register of RES is being established. The aforementioned Register will be responsible for supporting the new licensing process, as it will straightly interact with the information systems of the other stakeholders (i.e. environmental services), as well as with the Network Administrators (HEDNO, IPTO). The existing RAE information system appears to be still in use and is expected soon enough to be upgraded, so that pending applications can be conducted faster.

In addition, the obligation of paying maintenance fee has been revoked from January 2020. Instead, a single special fee payment is adopted (euro / MW).

Deriving from the provisions of the new legislative framework, RES stations can be divided into two categories:

- Special Projects (high power RES stations, RES stations such as hybrid, solar thermal that significantly affect the electricity systems where they are connected), and
- All the rest, which constitute the majority of the projects in the field of renewable energy.

RES stations considered to fall within the first category are covered by the relatively more complicated evaluation process described within the current framework, while are being exempted from the obligation to pay the aforementioned fee. RES stations' applicants in this category accompany their request with specific measurements.

RES energy study credits the ability of applicants to implement the project based on their technical competence, as well as the ability to secure the required funding, and overall business plan.

Rest RES stations that cannot be considered as Special Projects, enjoy a faster and simpler evaluation for the issuance of the Certificate, although in order to "replace" the financial evaluation are obliged to pay the issuance fee credited in favor of the Special RES Account (ELAPE).

The decision that was published in the Government Gazette (Government Gazette B 3291/6 August 2020) appoints, inter alia, for photovoltaic stations that:

- Power stations up to 1MW are now exempt from environmental licensing (while until recently the limit was 0.5MW),
- The stations with installed capacity from 1 MW to 10 MW (instead of the previous limit of 2 MW) are now included in the "lighter" category of PPPs.

In wind stations, respectively, the stations with installed up to 10 MW (instead of 5 MW) are subject to PPD.

In addition, another innovative provision is that electricity storage projects are classified as environmental when it is installed in a RES station, when appointed as necessary to "follow" the subcategory of the main project.

As RAE is expected to issue a number of Certificates in a short period of time, it is necessary to provide facilities for environmental licensing, which is the next licensing phase. The competent Working Group under the Secretary General of Energy and Mineral Raw Materials, are working intensively onto the direction of simplifying the Installation Permit which is the next link in the licensing "chain".

The final goal of the ministry is to radically reduce the licensing time of a RES project to two years on average (from 5-7 today), with the adoption of all the necessary regulations by the end of 2020. This is a prerequisite for achieving the goals of the National Plan for Energy and Climate and the rapid increase of the percentage of RES in the country's energy mix.

2.3. Producer's Certificate

Applications for the issuance of Certificates should be submitted electronically from the first to the tenth day of the months of February, June, and October. More specifically there are three application cycles that are being introduced (compared to the current four), so that there is enough time to inform the potential investors

about the areas available for applications for new RES stations, but also to prepare the necessary data for the submission of such applications.

The interested parties will submit to the information system of the Licensing Body (which is currently RAE) all the required supporting documents and data. There is a deadline of 15 days for submitting objections to the application. If the location restrictions described in the law are met, national safety and public health issues are not raised, and proof of payment of the Issuance Fee has been submitted, the RES Electricity Producer Certificate is issued.

The herein certificate includes at least the following information:

- The name of the registered producer or self-producer,
- The technology or type of RES,
- The installed power and the maximum production power of the station,
- Especially for wind farms, the number of wind turbines and the diameter of the impeller of each wind turbine, as well as the number of equivalent standard wind turbines corresponding to the number and characteristics of the project A / C, for the calculation of the coverage percentage of the carrier capacity of the local government to install them,
- The station's installation location,
- The validity period of the Certificate,
- General terms, and any other relevant terms and conditions.

There is also the possibility for the owner or usufruct rights' holder of all or part of a private property, for which a Certificate for the installation of a photovoltaic station has been issued, to submit an application for a RES station in the next cycle/period from the date of issuance of the Certificate. This measure attempts to protect the ownership rights of the specific property.

The Certificate of Electricity Producer from RES and the Certificate of Special Projects is issued for a period of up to twenty-five years and can be renewed for an equal period.

The Certificate automatically expires:

For photovoltaic and onshore wind farms, if:

(a) Within six months from the date of issuance of the Certificate, the holder has not submitted an application for granting AEPO, in case there is a relevant obligation. For the stations that are obliged to prepare a Special Ecological Assessment, this deadline is extended by another twelve months, or if

(b) Within thirty-six months from the date of issuance of the Certificate no application has been submitted to the Administrator for the granting of the final connection offer.

For other RES station technologies and for RES hybrid stations, if within 36 months from the date of issuance of the Certificate no application has been submitted to the Administrator for granting the final connection offer.

For RES stations, except for the hybrid stations, which belong to the category of Special Projects, the Special Projects Certificate automatically suspends its validity after the expiration of twice the period mentioned above. These deadlines can be extended, for a period of up to twenty-four months, if the holder of a Certificate or Certificate of Special Project declares his intention to complete the project and pays a Physical Installation Commitment Fee rises to 150 euros per MW of Maximum Production Power for each month of extension.

RAE will issue the Certificate if the applicant presents the proof of payment of the Producer Certificate Issuance Fee.

The amount of the aforementioned fee is determined per unit of nominal maximum power of the application in megawatts (MW) as follows:

- 3000 Euros/ MW for the power segment up to 1MW
- 2500 Euros/ MW for the power segment from 1 to 10 MW
- 2000 Euros / MW for the power segment from 10 to 50 MW
- 1500 Euros / MW for the 50 to 100 MW power segment, and
- 1000 Euros/ MW for the part of the power over 100 MW.

The Issuance Fee cannot be higher than the fee corresponding to a RES station of 250 MW.

Part III- Sale and Purchase (electricity) contracts

3.1. Legal Framework

The Electricity infrastructure development is regulated through various Laws and Decisions.

Requirements related to the energy grid are covered as follows:

- L 2773/1999 and especially article 28 par. 5 for direct lines.
- L3468/2006, and especially Article 3 for congested areas of the networks, Article 9, for priority dispatch of RES energy within the interconnected system, Article 10, for priority dispatch of RES energy within the free-standing island systems, Article 11, for connection of RES plants to the transmission and distribution networks.
- L3734/2009, and especially article 27 for congested areas of the grid, Article 28 for connection to grid.
- L3851/2010, and especially Article 4 for the development of the national grid system
- Ministerial Decision 13310 /June 2007, concerning the process for RES plants to obtain connection to grid
- Ministerial Decision D6/F1/ 5707 (Official Government Gazette B 448/3-4-2007), and especially Article 4 and 23, for congested areas of the grid.
- Transmission System and Market Operation Code (Ministerial Decision – Official Gazette B 655/17-05-2005), concerning connection to the Transmission System

An important advancement in electricity market operation was achieved in January of 2018, as Greece's electricity market became fully liberalized. From that date onwards, PPC's monopoly was lifted on all the non-interconnected islands, apart from Crete and Rhodes, where private electricity suppliers already existed. This facilitates alternative electricity providers to potentially operate on the other thirty small and medium-sized autonomous networks based on the Aegean Sea; reducing energy costs. In 2018, the debate on the new wholesale electricity market was also launched, which was expected to be fully reorganized with the launching of the Energy Exchange in 2019. The Mandatory Pool model was replaced by four new markets: (a) the Day Ahead market, (b) the Intraday market, (c) the Balancing market and (d) the Forward market. Electricity producers, electricity trading companies, suppliers and energy-intensive industries are eligible to participate. In terms of electricity suppliers, international experience shows that the Energy Exchange will allow them to reduce their business risk and provide a more secure environment for their long-term business moves, which is anticipated to lead to more competitive tariffs for households and businesses.

3.2. Electricity Market Operation Regime

A major development that occurred in 2019 concerns the electricity market operation and relates to the abolition of the Mandatory Pool model, currently in force, with the introduction of the Energy Exchange, with substantial preparations having already been made in 2018 by the Energy Ministry, the Regulatory Authority of Energy (RAE), Greece's Electricity Market Operator (LAGIE) and the Greek Exchange. The disinvestment of PPC, which is in full swing through the tender for the sale of its lignite units in Meliti and Megalopolis, are of critical importance for the further opening of Greece's electricity market. If the tender is successful and credible investors emerge, a major obstacle for PPC will have been removed and the company will be able to concentrate on the development of the RES sector, which is an absolute priority following a decision taken in the context of the company's new strategy. At the same time, it is estimated that with the sale of PPC's lignite units and the simultaneous operation of the new energy market, the continuation of the NOME-type auctions may cease, which will undoubtedly enhance PPC's financial

situation. Developments concerning the country's internal electricity interconnections are considered of major importance. With regard to the electricity interconnection of Crete with the country's mainland interconnected system, the contracts for the implementation of the first phase (i.e. Crete-Peloponnese), known as "small" interconnection, have already been signed and construction is expected to start by the end of this year. For the second phase (i.e. Crete - Attiki), known as "big" interconnection, the case is more complicated and consultations between Brussels, Athens and Cyprus regarding the construction of the project are expected to be intense. More specifically, Greece's Independent Power Transmission Operator (IPTO)'s subsidiary company, known as "Ariadne Interconnection", on the strength of a decision taken by the Greek regulator, has lately unfolded plans for the construction of this major electricity interconnection. At the same time, the project's promoter appears to be the "Eurasia Interconnector" group, which is recognized by the European Commission and has already been backed by PCI funds, is moving ahead independently with its project to connect the electricity systems of Israel, Cyprus and Greece. Some kind of mediation by the EC is highly anticipated over the next few months in order to resolve what appears to be a rather disingenuous situation. Electricity interconnections with the Dodecanese island complex and the North Aegean island group are now planned for 2029 and 2031 respectively.

Part IV- Conclusions- Problematics

4.1. RES projects' growth in Greece

As far as the RES sector in Greek territory is concerned, the first photovoltaic (PV) and wind farms were licensed in 2018 under the new support scheme, in which electricity from RES is typically sold on the electricity spot market and RES producers receive a premium on top of the market price of their electricity production. In 2019, the installation of new wind farms in licensed areas is planned, both on the mainland and the islands, with the prospect of adding at least 400 MW of new installed capacity. It is worth noting that Greece, despite its huge wind potential, has exploited only a small part of it, since the total installed wind capacity does not

currently exceed 3,000 MW. The experience of recent years shows that the rapidly evolving RES technologies achieve very low and competitive prices with a highly dispersed production that transforms the grid and the market and forcing electricity companies to change their business model. The power grid is gradually being transformed with innovative technologies in order to incorporate the increasing RES penetration with high efficiency, reliability and new services to consumers, while the electricity market is being reorganized and looking for new tools to meet the new challenges for its operation. Electricity evolves as a major energy carrier, expanding its uses by replacing fossil fuels, as it penetrates almost everywhere, such as in the transport sector, heating/cooling, etc., while it is also a pillar for growth. Electric vehicles and hydrogen production for fuel cells in buses and trucks that enter the market very fast will become an extension of the power grid. Today, Greece has a great opportunity to develop RES on a large scale in an attempt to radically change its production model for both electricity and thermal applications.

Greece's energy investments in small and large scale projects are expected to become one of the key growth drivers not only in the country's energy sector but also for its economy. At institutional level, the energy market is awaiting the special spatial plan for RES, which is expected to contribute as a growth pivot in order to attract investments with specific terms and conditions and at the same time form the basis for achieving the national energy transition goals and strengthening the RES contribution to the country's energy mix. Currently, there are major investment opportunities in Greece's primary energy sector (e.g. exploration and production of hydrocarbons, RES and energy efficiency), but also in transmission, distribution and infrastructure of gas and electricity. The anticipated energy investments in Greece could well reach €45,5 billion over 2018-2027, taking into account a number of assumptions. A primary assumption being that the country will continue on its economic growth path rather than a recession over the next decade, with an average annual growth rate of 1,5%. However, there are risks and uncertainties that are part of the economic sphere (such as recession, banking crisis, and declining demand), the weak regulatory framework (such as incomplete legal and legislative framework, and bureaucracy) and infrastructure, inter alia, which may affect the aforementioned

energy investments. The prospects and the objectives for energy investments should be considered taking into account the abovementioned limitations. However, since investments are vital to the short and long-term growth of the Greek economy, the target for optimum exploitation of the high investment potential offered by the energy sector provides a useful policy tool. The anticipated energy investments, as calculated by IENE, should therefore be considered more as an “investment potential” rather than an absolute figure.

Global infrastructure investment is expected to reach \$3.5 trln per annum in the period to 2040 or 3.2% of global GDP. The quality and extent of infrastructure is below our European peers. In Greece, there is a systematic infrastructure investment gap of 0.7 pps of GDP, resulting in a € 13bn permanent shortage over the past 10 years, created by the deep recession and consequent budgetary constraints. Infrastructure investments are vital for the Greek economy, having a high economic multiplier which can boost consumption and investment in other sectors. The number of planned and in progress infrastructure projects are not decreasing during the crisis.

4.2. Offshore Wind Energy Parks

As part of the second revision of the energy strategy implemented in November 2008, the Commission issued a statement on 13 November 2008 entitled "Offshore Wind Energy: Need to Take Action to Achieve 2020 and Further Energy Policy Goals" (COM (2008) 0768), with the aim of promoting the development of marine and offshore wind farms in the EU.

Greece currently has 58 offshore wind farm projects of which 1 currently operating, none where construction has progressed enough to connect the turbines and generate electricity, none are in the build phase, and none are either consented or have applied for consent.

The Greek government intends to use funds from the European Green Deal to help the corporate sector start the production of components for renewable energy plants and for the infrastructure necessary for offshore wind power, such as undersea power cables. Zones suitable for development may be determined

following strategic environmental assessment, after which concessions could be tendered. The Ministry of Environment and Energy is preparing a bill to cover locations, licensing, compensation and interconnections with the mainland grid. The media outlet learned the zones suitable for development may be determined following strategic environmental assessment, after which concessions would be tendered. Protected areas should be excluded and the authorities are reportedly looking at ways to prevent any obstacles to navigation and fishing.

Several major players in the global offshore wind farm market are already preparing to act when upcoming Greek legislation regulates investment in the sector. Various researches of offshore wind potential within Greek territory in order to identify opportunities for the development of offshore units in the Aegean Sea have already taken place. The measurement of wind speed takes place via a platform facilitated near the islands.

Currently “Terna” has the biggest ambitions among Greek companies. It already started the procedure for a 450 MW offshore park between Attica and Evia. Further north it plans a 585 MW offshore wind park. Copelouzos group, also aims to install a 216 MW facility, also in the Thracian Sea.

4.3. Covid-19 impact on renewable energy growth

The COVID-19 pandemic and its economic and political disruption have impacted renewable energy (RES) auctions.

More specifically, as appointed by AURES Policy Brief the great impact of the pandemic phenomenon seems to be more profound in:

- RES procurement: Decreased energy demand, resulting in potentially lower short-term demand for RES and potentially more EU Member States meeting their 2020 RES targets without additional policy action.
- RES project delays and auction delays: Disruptions in global supply chains and national permitting procedures might endanger project realization and

increase penalties. Several EU Member States have prolonged realization deadlines while others have postponed or cancelled auctions.

- RES finance: Higher RES financing risks through increased country and policy risk, less availability of RES project finance with shift to government-backed lending for corporations.
- Wholesale market risk exposure: Falling wholesale market prices pose significant challenges for projects without market premiums with sufficient floor prices (e.g. merchant plants and plants with low fixed premium).

Mid-term impacts on RES auctions are uncertain and climate-friendly economic stimuli packages could and should increase public clean energy spending and access to finance. Governments might already consider the following immediate adjustments in their RES auction design:

- Extending realization deadlines of awarded projects and for upcoming auctions
- Allowing for longer award periods & increasing digitalization of auction procedure
- Adjusting auction schedules but (if possible) avoiding downward auction volume revisions

4.4. Conclusion

Renewable energy generation is key for the attainment of sustainable development and climate stabilization. Empowering the world through the use of renewable resources certainly stands amongst the biggest challenges facing the international community. Nevertheless, States are not always keen to embrace a global basis for renewables as demonstrated by many soft law instruments. More significantly, renewable energy developments are not supported by any legally binding norm, let alone any ad hoc agreement, entailing a detailed discipline on renewable energy generation. On the contrary, international binding norms negotiated for different purposes and in different fora can incidentally limit the policy space of States willing to pursue renewable energy goals.

Furthermore, in the absence of internationally binding instruments setting a positive discipline for renewable energy generation, the pursuit of renewable energy goals through national policies cannot alone justify the departure from binding international trade rules. Any international legal development fostering renewable energy generation should integrate these concerns to the greatest extent possible. However, international cooperation in the renewable energy sector shows positive trends of development. Given the falling costs of clean technologies and an ever-growing interest in preventing negative effects from climate change, any new climate change agreement should be framed to give priority to renewable energy investments.

The Greek RES market nowadays appears as a very attractive prospect. The newly implemented plan to de-lignify Greece by 2030 and ensure that 61% of electricity will be generated from RES, compared to 27% at present, considered to be refreshing. Thus, the power deriving from RES in the country is expected to augment by 83% over the next decade, adding 9 GW overall of new power and mobilizing investments in a scale of over 9 billion euros.

Remarkable is also the fact that investor's interest in the market has been accelerated by green initiatives at EU level. Apart from local investors, such as "Terna Energy", "Ellaktor", and "Mytilineos", also other large Greek industrial groups entered or returned to the RES market, such as PPC, Hellenic Petroleum and Motor Oil. In parallel, the activity of foreign strategic investors in the domestic market continued, with Enel, Iberdrola and EDF being active again after almost a decade, while EDPR also entered the Greek market for the first time through RES capacity tenders.

Another element that highlights the attractiveness of the Greek RES market, is the arrival of investors in the sector either through partnerships with domestic companies to strengthen their development activities, or through the acquisition of assets and their integration into existing platforms. Finally, should be noted that since the start of RES growth in Greece since 2018, more than 2 GW of wind and solar projects have been licensed.

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