BIOMASS – BIOFUELS – GEOTHERMAL ENERGY

Georgia Dandoulaki, *Attorney at Law, LL.M.*
Associate at **Foutsis Law Firm**
Dimitrios Foutsis, *Attorney at Law, LL.M.*
Partner at **Foutsis Law Firm**

How is Greece developing on the RES sector?

The Greek legal structure in the sector of Renewable Energy Sources (RES) is been developing rapidly during the last ten years. Following, the European flow in finding new energy resources to cover the planet needs Greece is drawing new guidelines in its legal and business sphere to attract and lodge investments in the RES area. Nonetheless, the Greek government promised to replace 10% of its current transport fuels with biofuels by 2020.

In order to achieve that in October 2009 a new Ministry for the Environment, Energy and Climate Change was established in order to bring under one sole structure the respective bodies committed with the greatest part of RES licensing procedure, related to energy, environmental and forestry policies. The aim of the Ministry (which was created by the merger of the two prior Ministries the Ministry of Environment, Physical Planning & Public Works and the Ministry of Development) is to facilitate the effective promotion and to fasten the adoption of legislative actions and measures in favour of sustainable development.

What actually biomass, biofuels and geothermal energy covers?

Biomass refers to energy originating from the biodegradable fraction of products, waste and residues from agriculture, including vegetal and animal substances, forestry and related industrial activities, as well as the biodegradable fraction of industrial waste matter and municipal sewage and garbage.

Biofuels are tree liquid or gaseous fuel produced from biomass and more specifically:

- Biodiesel: produced from vegetable or/and animal oils and fats, of diesel quality, to be used as biofuel.
- Bioethanol: ethanol produced from biomass and/or the biodegradable fraction of waste matter to be used as biofuel
- Biogas: a fuel gas produced from biomass and/or from the biodegradable fraction of industrial and domestic waste matter, that can be purified and upgraded to natural gas quality, to be used as biofuels, or the wood gas.
- Biomethanol: methanol produced from biomass, to be used as a biofuel
- Biodimethylether: dimethylether produced from biomass, to be used as a biofuel
- Bio-ETBE: produced on the basis of bioethanol to be used as a biofuel.
- Bio-MTBE: produced on the basis of biomethanol to be used as a biofuel.

- Synthetic biofuels: synthetic hydrocarbons or mixtures of synthetic hydrocarbons, produced from biomass.
- Biohydrogen: hydrogen produced from biomass, and/or from the biodegradable fraction of industrial and domestic waste matter, to be used as biofuel
- Pure vegetable oils: Oils produced from oil plants through pressing, extraction or comparable procedures, either crude or refined but chemically unmodified, if they are compatible with the type of equipment or engine employed and the corresponding gaseous emission requirements according to the laws in force

By Geothermal energy we refer to thermal energy generated and stored in the Earth. Greece lies in a geographic position that is favourable to geothermal resources, both high temperature and low temperature. High temperature resources, suitable for power generation coupled with heating and cooling, are found at depths of 1-2 kilometres on the Aegean islands of Milos, Santorini, and Nisyros. Other locations that are promising at depths of 2-3 kilometeres are on the islands of Lesvos, Chios, and Samothraki as well as the basins of Central-Eastern Macedonia and Thrace.

What's the legal framework regulating them?

In 2005, to comply with Directive 30/2003EC, Greece applied L. 3423/2005 "Introduction of biofuels and other renewable fuels in the Greek market". L. 3423/2005, made it obligatory for all who were involved with production, import and trade of biomass and biofuels in Greece to have a license. It applied some technical specifications for the biofuel quality and permitted the mixture of biofuels with fossil fuels to those who were licensed. In biodiesel, which was the first commercial biofuel in the Greek transport sector since 2005, it imposed the obligatory use of all detaxed biodiesel in the existing biorefineries (in up to 5% blend).

With L. 3468/2006 "Production of Electricity from Renewable Energy Sources and High-Efficiency Cogeneration of Electricity and Heat and Miscellaneous Provisions" the Greek legislation complied with Directive 2001/77/EC. It set a new reality and a landmark in the production of electric energy from geothermal sources, wind farms, photovoltaic systems and hydroelectric stations. Additionally to this it established a licensing procedure for the operation of geothermal and hybrid plants.

L. 3769/2009 that amended L. 3054/2002, in Art.22 foresees the procedure under which companies are allocated to the amount of biodiesel that they can produce and distribute in the Greek market. Though, it has to be noted that the exact amounts are allocate every few years by Presidential Decrees.

After the EC passed Directive 2009/28/EC "On the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC", which defined the mandatory RES targets for each member-state, Greece simplifies the regulations governing RES by applying L. 3851/2010 on "Accelerating the development of Renewable Energy Sources to deal with climate change and other regulations in topics under the authority of MEECC".

What important features were included at L. 3423/2005?

In 2005, to comply with Directive 30/2003EC Greece applied Law 3423/2005, "Introduction of biofuels and other renewable fuels in the Greek market"-by modifying

Law 3054/2002 "Organisation of the oil market and other provisions"- raised the share of RES used in the Greek market. Law 3423/2005, made it obligatory for all who were involved with production, import and trade of biomass and biofuels in Greece to have a license. It applied some technical specifications for the biofuel quality and permitted the mixture of biofuels with fossil fuels to those who were licenced. In biodiesel, which was the first commercial biofuel in the Greek transport sector since 2005, it imposed the obligatory use of all detaxed biodiesel in the existing biorefineries (in up to 5% blend). Today Greece has managed to reach the EU target and substitute the 5.75% of diesel with biodiesel.

What is the procedure to obtain a production license under L. 3423/2005 as amended by L. 3851/2010?

The Licensing procedures are set by Law 3851/2010, as it amended Law 3468/2006 mentioned above. The current Law kept the basic manners of Law 3468/2006 but it made the licensing procedure more transparent and less bureaucratic.

3.a Production License

"According to Article 2 para1. of the above Law the license to produce electrical energy from R.E.S is issued with a decision of the Regulatory Authority for Energy (R.A.E.) based on the following criteria:

1) National security.
2) Protection of public health and safety.
3) The general safety of the installations
4) The energy production capacity of the project for which the relevant application is being submitted, measurement readings submitted must have been executed by certified parties, in accordance with standard DINEN ISO/IEC17025/2000, as it applies in each particular case.
5) The maturity of process for the materialization of the project
6) The legal right to use the location where the project is to be installed.
7) The ability of the applicant to complete the project on the basis
8) Securing the provision of services for the common good and the protection of Clients.
9) The potential to execute the project in compliance with the Special Framework for Spatial Planning and Sustainable Development for R.E.S.
10) The compatibility of the project with the National Action Plan"

Further in Para 2. of the same article the procedure is described as follows:

"The R.A.E. (Regulatory Authority for Energy), before issuing its decision, may collaborate with the Manager of the System or the Network or the NonInterconnected Islands for the initial determination of the manner and point of connection of the station to the System or the Network. This determination is made within (20) days from the date R.A.E.'s query is submitted to the Manager without constituting a commitment by the Manager or the R.A.E. for the existence of available electrical space for issuing the Connection Offer. The R.A.E. examines if the criteria mentioned in Paragraph 1 are met and decides to issue or not a production license within two months from the application submission date, providing the application folder is complete, otherwise, from its completion. The folder is considered complete if no additional information is requested of the applicant in writing within thirty days of its submission. The decision is published on R.A.E.'s web

page and it is forwarded to the Minister of Environment, Energy and Climate Change by the R.A.E. and is published promptly in a daily newspaper with national circulation with responsibility of the beneficiary.
The minister ex officio investigates its compliance with the law within twenty (20) days from receiving it. Within fifteen days of publishing the decision on the R.A.E web page, anyone with a legal stake in it may appeal against it, to challenge its lawfulness. The Minister passes judgment on the appeal within twenty days from its submission to the Ministry. If this period passes without any action the appeal is considered to have been rejected. The licensing process is halted until the lawfulness investigation is completed. Following the completion of the lawfulness investigation, the decision of the R.A.E. is entered in the register kept by the Independent Office for R.E.S. of the Ministry of Environment, Energy and Climate Change."

What is the Lifetime of the production license?

According to Para. 4 of Art. 2 L. 3851/2010 Article "The license to produce electrical energy from R.E.S. and from C.H.P. is granted for up to twenty five years and may be renewed up to another 25 years. If within thirty months of obtaining the production licence no installation permit is issued, the production license automatically loses its validity with the publication of a certification decision of R.A.E".

Which projects are exempted from obtaining a product licence?

Though, it is important to note that according to Art. 4 Para.12 L. 3851/2010 there are some projects that are exempted from obtaining a production license and any other certification decision, these are:
"physical or legal persons who produce electrical energy from the following categories of R .E .S. facilities:
i) Geothermal stations with installed capacity smaller than, or equal to half MW.,
ii) Biomass, biogas and biofuel stations with installed electrical capacity smaller than or equal to one MW...."

How much is the price of biomass?

€-MWh	Interconnected System
Biomass ≤ 1MW	200
1MW < Biomass ≤ 5MW	175
Biomass > 5MW	150
Biogas ≤ 2 MW	120
Biogas > 2 MW	99,45
Biogas from Biomass ≤3MW	220
Biogas from Biomass >3MW	200

What are the advantages investing in Biomass, Biofuels and Geothermal Energy?

Biomass and biofuels market is highly funded by the EU and the Greek Government itself. Moreover, investors will find a wide range of opportunities in both the biomass and

biofuels markets. The main advantages of investing in biomass and biofuels in Greece are the:

1. Abundant raw materials
2. Agricultural sector equals 5.2% of GDP vs. 1.8% EU average
3. High feed in tariffs
4. Binding national commitments in biofuel use
5. Favourable, long-term legislative framework, ensuring investment reliability

Today Greece has managed to reach the EU target and substitute the 5.75% of diesel with biodiesel. Greece lies in a geographic position that is favourable to geothermal resources therefore, this figure and only is quite attractive for investors. Low temperature geothermal resources are found at the plains of Macedonia-Thrace in addition a vicinity of the 56 hot springs found all over Greece. At present, geothermal resources in Greece are used primarily for greenhouse heating, in spas and in generate thermal power but the widespread use of geothermal heat pumps is becoming a booming market. However, lower temperature geothermal resources were found just a few meters below the ground surface which places the sector in a high investing position as the use of geothermal energy can be expand in more uses i.e in heating and cooling of water for domestic use.