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Regulatory framework for development of geothermal energy in

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> Introduction

> Key elements

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On 14 May 2021, decision YΠΕΝ/ΔΑΠ/42138/552 was issued by the minister of environment and energy and was published in the Official Gazette (OJ B'1960/2021). The issuance of this decision completes the national legislative framework aimed at the management and utilisation of Greece's geothermal resources as it encompasses the geothermal works regulation, which further specifies the provisions of the relevant law, Law 4602/2019. This regulation:

- · incorporates provisions on the conduct of geothermal exploration and exploitation works, as well as management operations related to geothermal resources;
- · regulates the rational use of geothermal resources;
- provides for the assurance of workers' health and safety; and
- · outlines the safeguarding of environmental protection.

Key elements

According to the standing legislation (article 5 of Law 4602/2019), the exploration, management and utilisation of geothermal resources is subject to prior conclusion of a relevant lease agreement, following a tendering procedure. The maximum duration of the lease regarding exploration works is five years, with a right to unilateral extension by the lessee for two additional years. The maximum duration of the lease for exploitation (on its own or coupled with management operations) is up to 30 years, but this period can also be extended for up to 20 additional years, upon the unilateral decision of the lessee.

The regulation contains provisions on the exploration, management and utilisation of geothermal resources both in geothermal fields of national as well as of local interest.

It defines "exploration works" as activities intended to detect geothermal potential and determine its characteristics, including:

- geological exploration;
- hydrogeological exploration;
- · geochemical exploration;
- · geophysical exploration;
- · drilling activities; and
- any other complementary works.

On the other hand, "exploitation works" are regarded as entailing all operations, projects and production facilities (eg, well drillings, reinjection drillings, metering systems and pipeline networks) that ensure:

- · the safe pumping of geothermal fluid;
- · energy generation and its transmission; and
- the reinjection of the geothermal fluid into the reservoir from where it was extracted, after its exploitation.

"Management operations" encompass all processes contributing to geothermal resources' rational and/or sustainable development and comprehensive exploitation, as well as all processes guaranteeing:

- · an uninterrupted supply of geothermal fluid into the system;
- · smooth and continuous energy production in conjunction with high energy efficiency thereof; and
- · avoidance of environmental degradation.

Prior to the commencement of geophysical exploration works, the lessee must obtain the lessor's written consent, which should be granted within 30 working days after the lessor has received from the lessee the completed documentation regarding the exploration and the lessee's compliance with the lease agreement terms. Nevertheless, the lessor's consent neither substitutes the lessee's obligation to obtain the required licenses and approvals (eg, environmental permits) nor equates to recognition of property rights. Similar provisions apply for granting consent regarding conducting exploration drillings.

The regulation also contains similarly detailed provisions on the procedure for carrying out exploitation works.

On a more general note, the regulation requires that all works relating to the exploration, exploitation or management of the geothermal potential are conducted in a manner warranting:

· the rational use of the drilling field;

- the preservation of the quality of the natural, man-made and cultural environments;
- the protection of public health and safety; and
- the assurance of the staff's health and safety.

For the attainment of the aforementioned objectives, the lessee is required, among other things, to:

- be equipped, prior to the commencement of the works, with all necessary permits, approvals and proof of notification, as well as to strictly comply with the terms thereof;
- plan and carry out the works, taking all necessary precautions, as well as apply practices that ensure the quick and effective handling of emergency situations;
- employ modern, safe and appropriate methods, depending on the type of works conducted, including implementing the best available techniques that are aimed at preventing environmental degradation; and
- maintain facilities and equipment suitable for the type and nature of the works performed, as well as employ and train the
 appropriate staff.

It is underlined that the geothermal works regulation obligates the lessee to take certain measures aimed, mainly, at the restoration of the natural environment after the completion of a drilling that will not be used or following its permanent abandonment. In this regard, the lessee must:

- clean up the area from waste materials, depositing them at licensed disposal sites;
- drain accumulated liquids (residues);
- restore any excavations;
- seal all boreholes; and
- generally restore the site area to a condition equivalent to that which it was before the start of the drilling.

The lessee must then submit a relevant full report to the lessor.

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