Webinar
European Geothermal Market Report

GEOTHERMAL MARKET IN ITALY
Overview on «ZERO EMISSION» projects

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In 2010, a new legislation (DLgs. No. 22, 2010) was issued to promote the geothermal development:
- opening the geothermal market to new players
- simplifying the authorization processes

In 2011 the Legislative Decree No. 28 was issued to promote the development of “pilot plants” with nominal installed capacity not exceeding 5 MW, total reinjection of geothermal fluids in the same reservoir, and with zero emissions,

In 2012 the Law No. 134 classified the geothermal energy as National strategic energy sources

About 120 applications for new exploration leases
RETE GEOTERMICA

RETE GEOTERMICA is a cluster of enterprises, established in 2013

Main scopes:
- Create a supply chain to enhance the geothermal development in Italy
- Share knowledge to develop environmentally friendly technologies
- Promote the use of geothermal energy through public awareness campaigns
- Identify a sole caller for the relations with the institutions and the public and private sector;

MEMBERS

KNOW HOW
- Geothermal resources assessment
- Drilling Engineering and operation
- Power plant design and construction
- Project development
RETE GEOTERMICA operators are committed to develop only “Closed loop” geothermal plants, even in case of high temperature (> 180 °C) and high content of NCGs (>5 %) geothermal resources.

- «zero aeriform emissions» during the plant operation
- Minimum the foot print
- Improvement of the landscape integration (site-specific design) of the plants
- Increase the use of heat & cooling in the different processes (agricultural, industrial, buildings, etc.)
DEVELOPMENT PLAN (@ 2030)

- ≈ 200 MW @ 2030
- ≈ 20 – 25 PROJECTS

**TOTAL INVESTMENT**

≈ 1,8 BILLION €

≈ 800 M€ FOR THE DRILLING SECTOR
≈ 200 GEOTHERMAL WELLS

≈ 500 M € FOR THE INDUSTRY SECTOR

≈ 500 M € FOR CONTRIBUTION TO PUBLIC ADMINISTRATION
(over 30 year of concession lifetime)

- Annual fees for permits and concessions
- Royalties for produced electricity
- Contributions to municipalities for environmental offsets

≈ 500 M € FOR OTHER USES OF HEAT

≈ 4000 NEW PERMANET JOBS
STATUS OF THE EXPLORATION LEASES @2018 (by MISE)

- 54 leases issued
- 3,252,00 km² total area covered by the leases in 5 Regions

The exploration works were completed in completed in only few leases, due to several reason:

- Opposition of local committes against the geothermal development
- Suspension of the activity for «Moratoria» in Tuscany and Latium Regions
- Suspension for definition of A.N.I (areas not suitable for geothermal development) in Tuscany
- For some leases the authorization is issued only for surface surveys not for drilling deep wells
- For some leases the authorization is issued for drilling deep wells but no assurance is provided for the release of exploitation concession

Only 3 leases applied for exploitation concession.
STATUS OF THE «ZERO EMISSION» PILOT PROJECTS

TIME NEEDED FOR LICENSING IS MORE THAN THE TIME ASSIGNED FOR THE EXECUTION OF THE PROJECT (4+2 YEARS)
OPPOSITION OF MIBACT AND ENVIRONMENTALIST COMMITTEES ARE NOT ALWAYS MOTIVATED
The licensing process for exploitation concession is similar to the one applied for Pilot Project Lease.

### Status of «Zero Emission» Concessions

<table>
<thead>
<tr>
<th>Exploitation Concession</th>
<th>Capacity</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
<th>Year 6</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Poggio Montone (Sorgenia)</strong></td>
<td>5 MW</td>
<td>P.A.U.R. &amp; Concession Release</td>
<td></td>
<td></td>
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<tr>
<td><strong>Mensano (Magma Energy Italia)</strong></td>
<td>5 MW</td>
<td>P.A.U.R.</td>
<td></td>
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<tr>
<td><strong>Le Cascinelle (Sorgenia)</strong></td>
<td>10 MW</td>
<td>P.A.U.R. (Work in Progress)</td>
<td></td>
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Time limit according to legislation.

This licensing process is satisfactory efficient in Tuscany Region. Opposition of MIBACT, and appeals to Administrative Court by Environmentalist Committees slow down the process.
FINAL REMARKS

Geothermal energy development in Italy can make a significant contribution to achieving the European Commission's 55% emissions reduction target by 2030.

However, the implementation of the new geothermal projects is not progressing as quickly as it would be due to some impediments:

- the complexity and slowness of the authorization procedures.
- the overestimation of some environmental impacts which, in some cases, create concerns in the local communities that have to host the plants.
- the lack of adequate economic supporting schemes tools (incentives) to promote the development and use of geothermal energy for electricity and heating, such as:
  - premium paid to producers of electricity from renewable sources to supplement the revenues they receive from the sale of their electricity directly on the market.
  - tax credit to reimburse the costs for the wells as the geothermal resources are state-owned and once the geothermal lease contract has expired, the wells and all related infrastructure will return to the state’s availability.
  - suitable fund to cover the risk of failure in the exploration phase of new areas.
THANKS FOR YOUR ATTENTION

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