EGEC Geothermal Market Report 2018

02/07/2019

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Electricity // Summary of key conclusions

State of Play in 2018

- Europe passes the 3 GWe threshold for installed capacity
- Sustained growth rate of 10%/year
- 2018: 352 MWe added

127 Geothermal Power Plants

- 13 new power plants in 2018 in Turkey, 1 new in Iceland
- Croatia becomes a geothermal electricity producer
Number of power plants in Europe in 2018

- **EUROPE**
  - In operation
  - Under development
  - Under investigation

- **EU**
  - In operation
  - Under development
  - Under investigation
New installed capacity in 2018 by country

And number of geothermal power plants

- **CROATIA**: 17.5 MWe
- **ICELAND**: 45 MWe
- **TURKEY**: 290.3 MWe

12 geothermal power plants in Turkey.
Number of geothermal power plants per country
Gap to achieving the geothermal electricity 2020 target in NREAPs (MWe)
Geothermal electricity capacity in Europe
Average size of geothermal electricity turbines by types of plants

<table>
<thead>
<tr>
<th>Type</th>
<th>MWe</th>
</tr>
</thead>
<tbody>
<tr>
<td>FLASH</td>
<td>60</td>
</tr>
<tr>
<td>DRY STEAM</td>
<td>20</td>
</tr>
<tr>
<td>BINARY</td>
<td>10</td>
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<td>BINARY EXCL.</td>
<td>5</td>
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<tr>
<td>HYBRID</td>
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</tbody>
</table>
Number of installed turbines by manufacturer

- Alstom/GE
- Ansaldo Tosi
- Atlas Copco
- British Thompson Houston
- Electra Therm
- Exergy
- Fuji
- Kaishan
- Mitsubishi
- Ormat
- Pratt and Whitney
- Rotoflow
- Siemens
- Toshiba
- Turboden

NEW IN 2018
District heating // Summary of key conclusions

State of Play in 2018

• Over 5 GWth of geothermal DH
• 12 new or renovated plants over the last year, 150MWth

300 Geothermal DH Plants

• 5 new project commissioned in the Netherlands
• 1 new and 3 renovated plants in France
• 1 new project in Serbia
• 1 new project in Belgium
• 1 new project in Germany
New plants for deep geothermal for heating and cooling in 2018 (capacity and number)

- **NETHERLANDS**
  - New: 5
  - 66 MW

- **FRANCE**
  - New: 1
  - 45 MW
  - Revamped: 3

- **GERMANY**
  - New: 1
  - 24.5 MW

- **BELGIUM**
  - New: 1
  - 8 MW

- **SERBIA**
  - New: 1
  - 5.7 MW
Number of GeoDH plants in operation and under development-investigation per country
Average size of deep geothermal heating and cooling plant per country
Gap to deep geothermal heating and cooling objectives in NREAPs
Shallow geothermal // Summary of key conclusions

State of Play in 2018

- Total Installed Capacity in Europe: ca.23,000 MWth
- More than 1.9 million units
Stock and sales geothermal heat pumps in 2018
Shallow geothermal energy production in selected European countries
Gap to completion of NREAP objectives on shallow geothermal (ktoe)
Thank you for your attention