



EGEC's Answer on the ERGEG Public Consultation Paper on Smart Grids¹

Deadline: **1 March 2010**

01/03/2010

EGEC welcomes the intention and initiative of the European Regulators' Group for Electricity and Gas (ERGEG) to show the path towards a European Smart grid.

EGEC is committing itself to actively support a transition into an energy economy which is fair to all EU citizens, and aims at the goals of efficiency, sustainability, security and conservation of the local and world-wide environment.

The geothermal sector would like to send its comments about the consultation paper you are presenting on smart grids.

The documents states that:

"These renewable resources include generators of all sizes whose their location is determined by the availability of the renewable energy resource (e.g. wind power, water, solar energy, etc.) and the consumer (e.g. a domestic dwelling)."

and:

"Large-scale renewable energy sources will mainly affect the transmission network. Firstly, cost effective connection solutions need to be developed, particularly as renewable resources are usually distant from load centres. Also, because of the intermittent character of e.g. wind energy (the most mature RES technology), monitoring and balancing on the transmission level will become more challenging and measures to maintain balance (e.g. management of supply, interconnection capacity) need to be enhanced¹¹. Furthermore, new smart technologies are required to connect e.g. off-shore wind."

We wish here to underline the **main advantages of geothermal power**:

- it is a Renewable Energy Source (RES): the heat from the earth is inexhaustible

¹ Ref: E09-EQS-30-04 / 10 December 2009

- it delivers heat and power 24 hours a day throughout the year
- an availability all over Europe with a minor land use
- it is modulated according to type of resources, to size and nature of equipments, and in order to meet demands
- it produces base-load energy with a load factor higher than 90%

A conventional geothermal system (flash or dry steam) has a capacity of 50-100 MWe ; a binary system (kalina or organic rankine cycle) with low temperature has a capacity of 5 MWe.

An EGS plant today has a capacity of 3-10 MWe, but future commercial plants will have a capacity of 25-50 MWe (producing from a cluster of 5 to 10 wells like in oil&gas industry).

The availability of the resource all day and night, throughout the year provides a load to the grid, operating during 8000 h / year.

Indeed, a future smart grid will not only contain a large amount of RES with intermittent character but the electricity will also be provided by base load RES like geothermal power.

Future investments in the grid infrastructures must consider this point.

A smart grid will be a 100% RES electricity network with the capability of integrating all renewable sources of electricity providing peak load and base load.

A technology like the Enhanced Geothermal Systems (EGS) will be a major provider of electricity after 2020, when it will be developed everywhere in Europe.

The Geothermal have the resources to supply at least 20% of Europe Global Energy consumption in 2050.

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