

## **PRESENT STATUS OF GEOTHERMAL DEVELOPMENT IN JAPAN**

Keiichi Sakaguchi<sup>1</sup>

<sup>1</sup>National Research Institute of Advanced Industrial Science and Technology (AIST),  
Central 7, 1-1-1 Higashi, Tsukuba, Ibaraki 305-8567, Japan  
e-mail: k-sakaguchi@aist.go.jp

### **ABSTRACT**

As social interest in renewable energy increased since the second half of the 2000s, geothermal energy also began to gradually attract attention again after the "lost decade". The Japanese government established the "New Growth Strategy" in June 2010 in which renewable energy development including geothermal plays important role as "Green Innovation". The East Japan Earthquake occurred in the following year and resulting Fukushima accident accelerated the growth of interest in renewable energy.

Post-earthquake major movements related to geothermal are as follows:

- (1) The Ministry of Economy, Trade and Industry (METI) revived the geothermal resource survey subsidies and geothermal RD&D budget which were aborted once. In addition, METI provided a new budget for promoting public acceptance for geothermal development and utilization.
- (2) The Ministry of Environment (MOE) announced a direction of easing the restriction of research and development in the national parks. MOE also made an additional guideline for protection of hot spring resources in which the judgment criteria for permission of geothermal drilling were shown.
- (3) Feed-in Tariff system for renewable energy has started in July 2012. The prices for geothermal are 27.3 JPY/kWh and 42 JPY/kWh, for 15 MW or bigger plant and for less than 15 MW plant respectively.

In response to these movements, geothermal development activities including small-scale hot spring power generation have started and planned in about twenty areas in Japan. Some domestic turbine manufactures have released small-scale binary-cycle generation systems for hot spring generation. New RD&D project such as EGS is going to start under METI.

AIST is constructing Fukushima Renewable Energy Laboratory in Koriyama, Fukushima Prefecture, at the request of Fukushima Prefecture and the Japanese government. Geothermal research team will join the new laboratory together with PV, wind power, hydrogen, and energy network management research teams.