



WESTERN PACIFIC
REGIONAL BRANCH

International Geothermal Association/INAGA Joint Technical Seminar

Melia Bali Hotel, Nusa Dua, Bali

26-28 April 2008

“Cost reduction through improved geothermal well targeting”

Course Objectives

The objective of the course is cost reduction for geothermal development in Indonesia, concentrating on the resource-related aspects rather than, for example, capital cost of power plants, but with attention paid to maximising NPV by closely integrating power plant design characteristics with reservoir characteristics. One of the factors hampering geothermal development in Indonesia is that geothermal has to compete with other sources of generation especially cheap local coal. While some geothermal developments are on-going, there are a number of projects that are more or less stalled at the exploration/delineation stage. Therefore it is necessary to find ways to keep the costs of geothermal development down. Improving the success ratio of well targeting and the productivity of individual wells is one very important way of doing that. This is the principal focus of the seminar.

Methodology

The course is based on a series of modules in which theory and principles are reviewed and practical exercises are given to allow attendees to participate in the course and practice the methods given. Each of the modules is complete in itself.

The course will cover the full range of geothermal activities, from early exploration through to on-going reservoir management. It also touches on aspects such as drilling and geotechnical issues, but from the perspective of what non-specialist professionals need to know – for example, what does a rig geologist need to know about drilling ? .

Of particular value is the material on resource assessment. Although the methodology for various means of reservoir measurement and interpretation is widely understood, the next step of taking this through into a realistic assessment of resource capability on which economic decisions can be soundly based has been treated very differently by different organisations. This part of the course gives a practical guide to selection of appropriate resource assessment methodology at different stages of development and relating these to the underlying conceptual models and assumptions made.

Contents

1. Introduction to geothermal systems in the island arc setting, controls on permeability, and the use of geological concepts to locate it

Jim Lawless, SKM

2. Resource Assessment and Reservoir Management for Geothermal Power Development

Hiroyuki Tokita, WestJec

3. Well Targeting Using Joint Geophysical Methods – New Techniques for Exploration and Modelling

Peter Malin, Auckland University

4. Subsurface Process to Lower Well Targeting Risk, Some Lessons Learned

Ontowiryo A and Julfi Hadi, Supreme Energy

Ansul Bahar, Kelkar and Associate

5. Microearthquake Monitoring and Applications

Greg Nordquist, Chevron

6. Formation Imaging at the Wayang Windu Geothermal Field, West Java, Indonesia

Ian Bogie, SKM

Yudi Indra Kusumah, Star Energy

7. 3-D MT Inversion Lahendong Case

Imam B. Raharjo, Pertamina Geothermal Energy

Phil Wannamaker, University of Utah