

THE BALI DECLARATION

“Geothermal Energy to Change the World”

We are more than 2,500 members from World Geothermal Communities represented by 85 countries assembled in Bali, Indonesia, for the World Geothermal Congress 2010. The Congress has been convened by the International Geothermal Association and the Indonesian Geothermal Association. Indonesia is a country that has been blessed with abundant, sustainable natural sources of energy including perhaps the world’s largest readily accessible geothermal resources. In light of the long history of geothermal energy development here in Indonesia and throughout the world it is only appropriate that we, the members of the geothermal community so assembled, do hereby declare:

FIRSTLY – Energy constitutes a basic and continuing human need

- a. Humankind is learning to develop technology to effectively and efficiently manage this diverse energy need in an environmentally responsible manner.
- b. Natural resources should not be considered merely as an inheritance from our ancestors, but that which has been entrusted to us for our children and grandchildren.
- c. Without energy other natural resources cannot be developed, industrialization cannot occur; food production will always be a problem, unemployment will continue to be a major issue, and health services will be extremely limited.
- d. Geothermal energy can be a major player in making significant changes in that situation and is reflected in the theme of the Congress. Geothermal: The Energy to Change the World.

SECONDLY – It is established that

- a. The world needs energy, now and in the future. Geothermal energy is hugely abundant.
- b. Climate change must be well managed and energy must be provided at a reasonable cost to our growing world wide population.
- c. Geothermal energy is indigenous, sustainable and environmentally responsible, counteracting global warming by displacing carbon-intensive energy usage.
- d. Geothermal energy can generate electricity as well as provide for the development of a wide range of direct uses including heating and cooling buildings, various industrial processes and agricultural production, as well as balneological and recreational health resorts.
- e. Geothermal energy is the only renewable energy source which is totally independent of daily, seasonal and variation, allowing it to provide power with a higher availability than any other energy source including fossil fuels and nuclear.
- f. Geothermal energy technology is well established, though it is continuously being improved.
- g. Geothermal energy has to date only been developed to a very limited extent compared to the potential resource base. Obtaining financing, and legal, institutional and regulatory barriers are two of the limiting factors.
- h. Geothermal technologies based on higher temperature resources have life-cycle costs competitive with other forms of energy. Cost competitiveness is steadily

being extended down the resource curve as technology improves, but at the lower end of the temperature scale pro-active policies or incentives are still needed to increase geothermal competitiveness.

- i. The importance of extending geothermal energy usage to lower temperatures is that not only is the resources base increased exponentially as the minimum temperature is reduced, but the range of geographies where it can be applied also greatly increases.

THIRDLY – We the assembled therefore do urge that

- a. Large investment is secured for national, regional and local geothermal projects in developing as well as developed countries and economies in transition. Greater acceptance of geothermal by international funding agencies can play a major role.
- b. Legislative and administrative barriers be removed and reformed.
- c. All technocrats, decision makers, politicians and world leaders, whether they are in the developed or developing countries strive to create a favorable political climate by molding public opinions that are conducive to the sustainable development of geothermal energy. This can include for example government support in the areas of risk mitigation insurance, cost sharing, loan guarantees and production tax credits.
- d. Investments can be provided in many forms (financial incentives from government, loans and capital investment from banks, private investors, venture capital funds) and policies need to be established to facilitate accessing all of these sources.
- e. Recognition be given to the important role of existing utilities as the off taker for electrical output, that Renewable Portfolio Standards be adopted, that Integrated Resource Planning be fully implemented and standard offer contracts including feed-in tariffs be made available.
- f. Substantial funding be committed to research and development to improve the cost competitiveness of geothermal energy production, particularly where it means it can be extended into new situations, such as at low temperatures and into different geological settings.
- g. Know-how transfer from developed to developing countries is facilitated and supported through effective international cooperation among government, private and academic institutions, especially by joint training and education, capacity building, and technical assistance.

FOURTHLY – All this will

- a. Avoid additional carbon dioxide emissions and reduce current emission levels;
- b. Create employment opportunities, increase industrial development and agricultural production and improve the standard of living of citizens of the world;
- c. Secure adequate and environmentally responsible energy supply for generations to come; and last but not least
- d. Effectuate “geothermal energy to change the world” toward a sustainable peaceful, healthy and clean environment in a world to live in and consequently the lasting prosperity of the people through out the world.

Nusa Dua, Bali, Indonesia, 30 April 2010

The participants of the World Geothermal Congress 2010, Nusa Dua, Bali, Indonesia

Signed by:

Prof. Ladislaus Rybach, President, International Geothermal Association

Prof. Gordon Broomquist, Chairman, WGC2010 Steering Committee

Dr. Surya Darma, President, Indonesian Geothermal Association

Dr. Herman Darnel Ibrahim, Chairman, WGC2010 Organizing Committee

Dr. Miklos Antics, Chairman, European Regional Branch, IGA

Mr. James Lawless, Chairman, Western Pacific Regional Branch, IGA

Prof. John W. Lund, Former President, IGA

Mr. Francisco Montalvo, Chairman, El Salvador Geothermal Association

Mr. Luis Urzua, President, Chilean Geothermal Association

Mr. Meseret Teklemariam, Chairman, Ethiopian Geothermal Association

Mr. Manuel Ogena, Chairman, Philippine Geothermal Association

Mr. Hartmut Gassner, Chairman, German Geothermal Association

Prof. Keyan Zheng, Chairman, Chinese Geothermal Energy Society

Ms. Susan Jeanes, CEO, Australian Geothermal Energy Association

Dr. Bambang Setiawan, Director General of Mineral, Coal and Geothermal, Ministry of
Energy and Mineral Resources of the Republic of Indonesia

Witnessed by:

Dr. Darwin Zahedy Saleh, Minister of Energy and Mineral Resources of the Republic of
Indonesia