

# Foreword

Jarðhitafélag Íslands, the Geothermal Association of Iceland (GAI), was founded in May 2000. A year later, after organizing two successful geothermal workshops, the GAI Board of Directors decided to convene an international conference focussed on multiple integrated use of geothermal resources and have it in Reykjavik. A conference on a similar theme, entitled “Industrial Uses of Geothermal Energy”, was held in Reykjavik in September 1992 with great success. The timing of the new conference, September 2003, was chosen in order to celebrate the 25th anniversary of the United Nations University Geothermal Training Programme (UNU/GTP) in Reykjavik.

The theme of the conference, “Multiple integrated use of geothermal resources”, was in response to the call from the world community for sustainability and greater environmental conscience in the future development of the world’s energy resources. Icelandic energy developers have held steadily to this ideal for the last couple of decades, as is manifest in the fact that some two thirds of the primary energy of Iceland is obtained from renewable resources. Over 50% come from geothermal resources and 17% from hydro. Nearly 90% of the houses are heated by geothermal, and some 17% of the electricity is produced by geothermal (about 83% by hydro power). It was therefore considered apt to hold the conference in Iceland; share Iceland’s knowledge in geothermal research and development with colleagues from other countries, and to learn from them at the same time.

For an association with about 100 members, it is quite an undertaking to organize an international conference. It would not have been possible without the support of the five leading energy utilities and companies in the country, who agreed to support the conference financially and otherwise. Each of the following guaranteed a certain contribution to the conference and took the financial risk of the conference: ENEX Ltd, Hitaveita Suðurnesja hf (Suðurnes Regional Heating Service Ltd.), Jarðboranir hf (Icelandic Drilling Contractors Ltd.), Landsvirkjun (National Power Company), and Orkuveita Reykjavíkur (Reykjavik Energy). Two other sponsors undertook significant contributions in kind, namely Orkustofnun (National Energy Authority) and Samorka (Association of Icelandic Energy and Waterworks). The co-sponsors of the conference are listed in the acknowledgements. The GAI is very grateful to the sponsors and the co-sponsors, as well as the many individuals who have contributed to the preparation of the conference.

About 200 participants in the Conference from 28 countries are expected. As can be seen in the Proceedings, it features special sessions on the UNU/GTP, binary cycles and power production, district heating and spas, exploration of geothermal resources, geothermal development, plant management, reservoir management and reinjection, direct use of geothermal in industry, multiple use of geothermal, environmental aspects of geothermal, agricultural use, drilling and production, the Iceland deep drilling project, and country overviews. The Conference is greatly honoured by the presence of the President of Iceland, the Rector of the United Nations University, the Minister of Industry and Commerce, the Permanent Secretary of the Ministry for Foreign Affairs, and the representative of the World Bank.

A Short Course entitled “International Course on the Sustainable Use and Operating Policy for Geothermal Resources” precedes the Conference, and is partly supported by it. The course is organized by the UNU/GTP in cooperation with the International Summer School on Direct Application of Geothermal Energy in Skopje (Macedonia), and the International Geothermal Association. About 50 participants from 18 countries are expected, and the lecturers come from Germany, Iceland, Macedonia, Philippines, Romania, Switzerland, and

USA. The Short Course lectures are published by the UNU/GTP. The unselfish work of the lecturers and special contributions to the Short Course from Hitaveita Suðurnesja hf, Orkuveita Reykjavíkur, Íslenskar Orkurannsóknir ISOR (Iceland GeoSurvey) and Unocal are gratefully acknowledged.

Excursions in SW-Iceland with focus on low-temperature and high-temperature geothermal uses respectively are arranged by the Conference, together with a post-Conference tour to geothermal fields in N-Iceland.

It is hoped that this Conference will be valuable to the participants from the different parts of the world, personal contacts and interchanges made during the Conference will strengthen the international cooperation in the field of geothermal energy.



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Geothermal Association of Iceland



Einar Tjörvi Eliásson, Chairman  
Conference Organizing Committee

## Acknowledgements

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