A Keynote Speech
by the
President of Iceland
Ólafur Ragnar Grímsson
at the
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Distinguished participants
Dear friends

It was with great pleasure that I accepted the invitation to be with you here today, to resume our dialogue and explore how the utilisation of geothermal resources has now gained increased priority in countries all over the world, how the United States can, and must, build on its strength in this important field of clean energy production.

Throughout my Presidency, I have paid numerous visits to America to engage in discussions and meetings with policymakers and experts, with members of Congress, both in the Senate and the House, with high officials in the Clinton and the Bush Administrations, with mayors, governors and many others. My mission was to urge decision-makers in this great country to realise the enormous geothermal potential of the US, to hammer home how such a transformation could bring economic and technological benefits to the American people, paving the road towards a clean energy future, helping to bring strategic advantage and bolster energy independence in an increasingly volatile world.

The culmination of these efforts was my appearance at the Hearings called by the Committee on Energy and Natural Resources of the US Senate in September 2007. There, I presented a comprehensive analysis of the matter and answered pertinent questions from the Senators. I believe it was the first time in the history of the US Senate that a foreign

Head of State appeared at a Hearing and I was both honoured and pleased that this landmark was related to the geothermal mission.

During these efforts, I came to respect profoundly the work of the Geothermal Energy Association. I benefited greatly from numerous encounters with your members and enjoyed attending various meetings and events.

It is therefore in a spirit of reunion that I come here today, but also to celebrate the fact that, at the opening of the second decade of the 21st century, geothermal utilisation is advancing, almost everywhere in the world. We now witness a fundamental shift; finally, geothermal power has taken its proper place on the global energy agenda, although there is still a lot of work to be done in enlightening policymakers and business communities on its nature and potential, on the technology and sustainable management of the resources.

The World Geothermal Congress in Bali last year provided clear evidence of this transformation. We could even say that there is now a race on for access to available expertise and equipment. Various governments have come to realise that by establishing cooperation with leading companies in the field, they can give their nations a competitive advantage in the global economy.

In Bali, the President of Indonesia announced ambitious targets for geothermal utilisation and the Prime Minister of Turkey declared earlier last year, at the World Future Energy Summit in Abu Dhabi, that geothermal power now has a prominent role in the energy plans of his nation. After his visit to Iceland in 2010, the Indian Minister for New and Renewable Energy initiated geothermal projects in Kashmir and following my meetings in Moscow last fall with President Medvedev and Prime Minister Putin, the Russian Minister of Energy, accompanied by the CEO of RusHydro, came to Iceland to examine how geothermal power could serve new aluminium smelters as well as providing hot water for district heating.

In the past few years, governments, energy companies, regional authorities and other key players in Central and Eastern Europe, East Africa and Central and South America have come to re-evaluate their geothermal potential.

During my meetings last September with the Prime Minister of China, Wen Jiabao, and Vice President Xi Jinping, who in all probability will become the President of China next year, they declared that their Government sees geothermal energy as the main area of cooperation

between our two countries, and that they had decided to make Iceland China's primary partner in the geothermal transformation of their country. Thanks to the existence of widespread low- and medium-temperature geothermal resources in China, there is a significant potential for establishing urban geothermal heating systems in many Chinese cities thus making a monumental contribution to CO_2 reduction since coal-fired power stations could be closed down in one city after another after the change-over.

The good record of the geothermal urban heating system which Icelandic companies have been building in Xianyang for some years now played a key role in the formulation of this Chinese policy, and it was very rewarding to hear the representative of the Shaanxi region speak enthusiastically about this project at the Energy Conference held in connection with the Shanghai World Expo in September.

Although China can also use geothermal energy for electricity production and other profitable activities, such as greenhouse cultivation and for spas and tourism developments, the urban heating system will be at the core of this transformation.

So we come to the mantra which I continuously bring to my Icelandic geothermal friends: Don't forget the great importance of ordinary geothermal urban heating systems! Don't become so fascinated by the cutting-edge technologies for electricity generation that you forget to enlighten city planners, mayors, regional authorities and others on the great long-term benefits of urban heating systems, on the reliability and the profitability of this well-established technology and how the management experience which has already been established can bring great financial advantages in decades to come.

I believe strongly that in the next 10-20 years, the most significant geothermal contribution, both to national and global energy transformation, lies in urban heating systems – and in this sphere, many regions of the United States could lead by example, ensuring that China does not surpass the US in this area.

Similarly, the success of the drilling which the company Reykjavik Geothermal executed last year in the Abu Dhabi desert, within the framework of the Masdar zero-waste, zero-emissions urban project, also demonstrated that medium-temperature areas can be used for urban air-conditioning systems, to cool cities which for most of the year have to tackle the problem of high air temperatures; it is worth noting that over 40% of the energy requirements of the Masdar City will be for air-

conditioning. This application is also of great relevance for the United States.

The time has now arrived for advocating strongly the contribution of geothermal power to the urban future in the US, to awaken governors, mayors, citizens as well as the Administration and Congress in Washington to these fascinating possibilities, to a transformation which could become a major pillar in the American green energy future, a key contribution to energy independence and national security.

At this gathering of experts here today there is no need for me to emphasize that the technology and the operation of such urban heating systems are already well-known and well-tested, but I think we could make a better job of explaining to urban and national authorities the enormous economic advantages of geothermal space-heating systems – and geothermal cooling systems – the low cost for citizens, the profits for companies and the promise of consequently being able to enjoy reduced pollution and lower taxes in decades to come.

Whereas the geothermal community tends to be naturally more fascinated by the latest technological innovations, I stress again the need to inform and enlighten decision-makers on the multiple advantages which geothermal power can bring to their countries. In this respect the Icelandic experience can serve as a significant illustration.

In the second half of the 20th century, new technologies and engineering endeavours enabled my country first to replace coal and oil with geothermal space heating, and then to power turbines and sell geothermal-generated electricity to aluminium smelters and data storage centres. Thanks also to hydropower, Iceland thus became the paramount clean-energy country in the world, with all our electricity and space heating provided by green energy resources. In addition, the geothermal sector is the foundation of extensive greenhouse cultivation and fish farming, of world-famous tourist locations like the Blue Lagoon, of spas, healthier life styles and the production of cosmetics.

The economic benefits derived from our geothermal development have been enormous, helping to transform a country of farmers and fishermen, which the UNDP classified as a developing country down to the 1970s, into one of the most prosperous welfare economies in the world, even despite the recent financial crisis.

Yes, indeed, geothermal energy has helped Iceland to survive the recent banking shock. This is especially because the cost of heating and electricity for ordinary people, families, homes and business companies is

only a small proportion of the average European price level, but also because our geothermal resources make Iceland a very attractive location for industrial investment, and will do so even more in the coming years.

The scale of the national savings resulting from geothermal space heating alone is demonstrated by the fact that every ten years, every decade, Iceland saves what amounts to the entire GNP of one year by not having to import oil and coal to heat its houses.

This has indeed been a revolutionary transformation, not only allowing us to build an economy with an inherent long-term strength but also to make significant contributions to the rest of the world. The geothermal sector has become one of the major pillars of Iceland's global position and is important in our foreign policy and our diplomatic efforts.

The United Nations University Geothermal Training Programme, founded three decades ago in Iceland, has strengthened the geothermal development capacity of more than 40 developing countries and in recent years, Icelandic energy companies and engineering firms have participated in geothermal projects, for example in China and India, in East Africa and Central America, in Western and Eastern Europe, in the Middle East, Russia and the United States.

It has become an important part of my Presidency to promote such cooperation, especially since the threat of irreversible climate change makes it our moral duty to help others to move towards a more sustainable future.

The climate crisis constitutes a call for a fundamental energy revolution, a comprehensive transformation from fossil fuel to green energy sources such as geothermal, solar, wind, hydro-power and others.

One of the great advantages of geothermal green energy production is that the scale of investments can be tailored to the need. The excess capacity and huge initial costs inherent in big coal and nuclear-power plants are absent from the equation. The tapping of geothermal, as well as wind and solar power, can be adjusted to the needs of a few households, a small village, a growing town or emerging industrial projects. It can then be scaled upwards with each stage of successful development.

A few decades ago, this important dimension was entirely absent from the formulation of energy strategies, simply because green technologies were still in their infancy. Now, however, countries can base their prosperity on proven practices that can be tailored to the needs of different regions.

Furthermore, technological and engineering innovations will, in the years to come, further enhance the contribution of the geothermal sector to the global energy future.

In this respect some Icelandic-US projects are of great significance.

First, the Icelandic Deep Drilling Project, which is being conducted in a cooperative venture between a group of Icelandic energy companies and foreign partners such as Alcoa, Statoil-Hydro, the US Natural Science Foundation and others. The project is aimed at tapping super-critical temperatures, going down 5-6 km, examining how to harness heat at 400-600°C.

Secondly, an investigation is being made of the use of geothermal boreholes in basalt regions for carbon recycling and storage, a collaboration between Reykjavik Energy, the University of Iceland, and Columbia University in the US and the University of Toulouse in France.

In addition, Icelandic and American partners could cooperate in increasing the efficiency of existing geothermal technologies, advancing higher energy recovery, longer field times, well-drilling technologies, casing, data management and reservoir simulation.

Together, we could also further the examination of the seabed, of continental shelves, for submarine geothermal generation, particularly where high-temperature fluids can be found in fracture zones along mid-ocean ridges; examining whether, and if so, how, these could become a significant part of our energy future.

Since Iceland is now rapidly recovering from the financial crisis, earlier and more effectively than many other countries in Europe, partly thanks to our geothermal developments in previous decades, we are now well placed to resume effective cooperation with our friends and partners in the United States.

The framework for that cooperation would be somewhat different from what we were planning a few years ago: Less dependent on the banks, although they will still have an important role, but relying more on engineering firms, specialised energy companies and the participation of American and other international investors.

The time is definitely right: The experience is well established, and further partnerships can follow the pattern inspired by our long-standing friendship.

The task is to enable the United States to maintain a leading position in the global clean energy system, being aware of how fast China is now moving in that direction.

It has become my firm conviction that based on its geothermal, solar, wind, hydro and other clean energy projects, China could indeed, within the present decade, surpass both the United States and Europe in the evolution of its green energy economy.

That prospect should serve as a wake-up call for those who are especially concerned with the balance of power in the world, with the evolution of competitiveness in the global economy.

Therefore the Geothermal Energy Association must engage in the important task of educating, of bringing people together, of influencing the future of this great country. In that significant endeavour it will be both a pleasure and a privilege for me and my fellow countrymen to be your partners.

It is in this spirit of friendship and our shared mission that I come here today and thank you again profoundly for the invitation.