Speech
by
the President of Iceland
Ólafur Ragnar Grímsson
at
Clean Energy – Cutting CO_2 Emissions Conference
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Your Excellencies
Ladies and gentlemen
Dear friends

We are assembled here today in order to celebrate how broad and productive cooperation between China and Iceland in the field of clean energy has become, and also to explore ways in which we can work towards further success and the constructive execution of the policies and projects which the leaders of our countries have discussed in a series of successful meetings.

It has been the privilege of my Presidency, and a great honour for me personally, to further this cooperation, first in extensive dialogue with former President Jiang Zemin during his State Visit to Iceland in 2002 and then in a series of meetings I have had over the last four years with President Hu Jintao and Premier Wen Jiabao, both in Beijing and here in Shanghai. I have also had meetings at the Presidential Residence in Iceland with many distinguished delegations from China, headed by party leaders, ministers, governors, mayors and other prominent representatives; most recently when Politburo Standing Committee member He Guoquiang brought to Iceland a delegation which included officials from the Central Bank of China, the Export – Import Bank of China and energy leaders from the distinguished company Sinopec. As an example of how our dialogue will continue after this forum here in Shanghai, I will in four days time be meeting again Premier Wen Jiabao

and our dialogue will undoubtedly explore how to further geothermal power in your great capital city. On my arrival back home I will also be meeting with Secretary of the Party in Beijing at the end of his visit to my country.

It has become an important dimension in the new international vision of my country how to share our clean energy experience and technologies with other countries, especially in the developing world. We know from our own experience how difficult economic and social development can be, and how clean-energy projects can help to build firm foundations for enduring success. For centuries, Iceland was among the poorest counties in Europe, and even up to the 1970s it was classified by the United Nations Development Programme, the UNDP, as a developing country.

From the settlement of Iceland by the Vikings more than a thousand years ago and up to the early years of my parents' lifetimes, the only application of geothermal power known in Iceland was for washing clothes and relaxing by sitting in pools formed by natural hot springs. Then, between the World Wars, and increasingly in the second half of the 20th century, new technologies and engineering ventures enabled Iceland first to replace coal and oil with geothermal space heating, and then to power turbines and ultimately sell geothermally-generated electricity to aluminium smelters and other industrial enterprises. Thanks also to our hydropower reserves, 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 has been the basis of extensive greenhouse cultivation and fish farming, of world-famous tourist locations like the Blue Lagoon, of spas for healthier life styles, of the production of cosmetics and of snow-melting installations in driveways, streets and urban centres.

The economic benefits derived from geothermal and hydropower developments have been enormous, helping us to transform a country of farmers and fishermen into one of the most prosperous welfare economies in the world, even despite the recent financial crisis.

Yes, indeed, our clean-energy success has helped Iceland to survive the shock of the recent national and international financial crisis, both because the cost of heating and electricity for ordinary people, families, homes and businesses is very low (compared to what it is in other European countries) and also because our clean energy resources make Iceland a very attractive location for industrial investment, and will do so even more in the coming years: for aluminium smelters, data-storage centres, high-tech industries and other profitable enterprises.

The scale of the national savings resulting from replacing imported oil with geothermal energy in space heating is demonstrated by the fact that every ten years, Iceland saves what amounts to one year's entire GNP by not having to import oil to heat its houses.

Ours has indeed been a revolutionary transformation, not only allowing my nation to build an economy with inherent long-term strength, but also to make significant contributions to the rest of the world. The clean energy sector, and especially geothermal exploration and development, has become one of the major pillars of Iceland's global position and of our foreign policy and our diplomatic efforts.

The United Nations University's Geothermal Training Programme, founded three decades ago in Iceland, has strengthened the capabilities of more than 40 developing countries and we are especially proud of having trained so many experts from China.

Icelandic power companies and engineering firms have participated in geothermal projects in China and India, in East Africa and Central America, in Western and Eastern Europe, in the Middle East, in 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.

In all of these categories, the nations of the South enjoy an even richer potential than those of the North. Thus, a green energy era could be a time of renaissance, a progressive century for the developing world.

One of the great advantages of geothermal, solar and wind power is that the scale of investments can be tailored to the need. The excess capacity and the huge initial costs inherent in big coal and nuclear-power plants are absent from the equation. The tapping of geothermal, wind and solar energy 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, as needed, 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, developing

countries can base their future prosperity on proven practices that can be tailored to the needs of different regions.

The beauty of geothermal power for economic and social development is that it is not just an energy resource. It can also be used for greenhouse cultivation and other types of productive farming to help rural areas to grow products for high-priced markets. It can provide warm water for spas and clay for cosmetic treatments, offered at urban and rural recreational and health centres, bringing lifestyle benefits to the local population. Geothermal fluid is also rich in chemicals needed in pharmaceutical production, and experiments have indicated a possibility of extracting rare minerals from the geothermal resource.

All of this provides China and developing regions all over the world with new opportunities to adopt successful economic strategies based on geothermal development, and it is the privilege of many Icelandic partners to play a part in these endeavours here in China. Such cooperation between China and Iceland is based on deep historical roots and enjoys broad support among the leaders of our respective countries.

In the 1980s and the 1990s, Icelandic experts and technicians examined the potential of geothermal projects in China, some of which were instigated through the involvement of Icelandic engineering firms. Chinese fellows the UN Geothermal Training Programme, based in Iceland, have gradually formed a community of Chinese geothermal experts after returning to China. It was a great honour for me, during my visit to China in 2007, to inaugurate the Geothermal Department at Shaanxi University of Science and Technology.

The State Visit of the President of China, Jiang Zemin, to Iceland in 2002 was indeed a landmark event in our energy cooperation. I vividly remember how excited President Jiang Zemin became when I took him to the Nesjavellir Geothermal Power Plant, built by Reykjavík Energy, about an hour's drive outside the capital and close to our historic national park at Thingvellir. The plant provides both electricity and urban heating for our capital city. Clearly, Jiang Zemin's engineering training and his technological mind allowed him to realize there and then how beneficial geothermal cooperation with Iceland could be for China. When President Jiang Zemin and his delegation left the Nesjavellir Power Plant, they were clearly in high spirits. He told me then that he had acquired a new vision for the clean energy future of China.

This same vision has inspired the meetings I have been privileged to have in recent years with President Hu Jintao and Premier Wen Jiabao, first during my State Visit to China in 2005 and then again in 2007 and 2008, and also my meeting a few days ago with Vice-President Xi

Jinping. In every one of these meetings the importance of clean energy cooperation with Iceland has been emphasized, especially as regards cooperation in the field of geothermal power.

I also recall discussions with prominent delegations from China which participated in the World Energy Council meeting in Iceland in 2009 and in the International Hydropower Association World Congress that was held in Reykjavík the same year. Our shared clean-energy vision furthermore inspired the signing of hydropower and geothermal agreements during the recent visit by He Guoqiang and his distinguished delegation to Iceland.

This July, our Foreign Minister, my good friend Össur Skarphéðinsson, visited China to confirm our determination to advance this clean-energy cooperation with China. High priority was given to geothermal cooperation in his successful and constructive meetings with Vice-President Xi Jinping and Foreign Minister Yang Jiechi, not only as regards projects in China but also how China and Iceland could perhaps cooperate on such projects in third countries, for example in East Africa.

Sinopec has played a significant role in this enhanced Chinese-Icelandic cooperation in recent years, and I want to take this opportunity today to thank the leaders of Sinopec for their friendship and positive vision. It has been a privilege for me to receive delegations from Sinopec at the President's Residence in Iceland and to have a constructive dialogue with the leaders of the company during a previous visit to Shanghai.

In 2007 I also visited the city of Xianyang and saw at first hand how a geothermal station had replaced the coal plant in the urban heating system, providing the citizens with clean energy and also helping to reduce destructive pollution.

Together with many other events and projects, all these pillars in our cooperation demonstrate how the Chinese-Icelandic clean-energy relationship has deep historical roots and enjoys the political support of the leaders and the governments of our countries, and furthermore how it has inspired young Chinese students and experts to dedicate their careers to a new clean-energy future for China.

Such a transformation could help China to gain a leading global position in the field of clean energy. Together with progress in solar, wind, hydroelectric and other forms of clean energy, geothermal development in China in the next 10-20 years could enable it to become the No. 1 clean-energy country among the major economic powers, surpassing even the European Union, the United States and Japan.

I realise that such a prediction runs counter to the established Western view, but I sincerely believe, based on my dialogue with Chinese leaders and in the light of what has already been done, and what could follow with even more efforts, that China could indeed achieve such a position.

For China to become the No. 1 clean-energy country among the major economic powers is an ambitious vision; a startling prediction that will surprise many of my friends in Europe and in the United States. It could, however, become a reality with the combination of Chinese policies and constructive cooperation with other countries, such as Iceland.

I am supported in this belief by the fact that we are still in the early stages of geothermal know-how and that together we can aim in the coming years at wide-ranging technological breakthroughs in many fields. Let me mention some where Iceland's contribution could be particularly relevant:

- Deep-drilling technology, aimed at tapping supercritical temperatures close to magma chambers, as illustrated by the international Icelandic Deep Drilling Project, going down 5-6 kilometres, examining how to harness temperatures of 400 – 600°C.
- Increasing the efficiency of existing geothermal technology, achieving higher energy recovery and longer field times, with advances in well-drilling technologies, casing, data management and reservoir simulation.
- The development of smaller turbines, as Kaldara in Iceland has done in cooperation with the Indian company Hindustan Turbo Machinery, furthering small-scale geothermal harnessing by adding one container-sized unit to another.
- Promotion of space-heating systems to replace coal and oil, so meeting a large proportion of the energy demand in both developed and developing countries.
- Air-conditioning and cooling systems, such as Reykjavík Geothermal is developing in Abu Dhabi, for use in warmer countries; these could potentially be a game-changer in the Middle East and other hot regions.
- Enhanced Geothermal Systems and their contribution to a new energy era.
- The examination of the sea floor, 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.

These and many other developments are fast making the geothermal sector a crucial part of the global energy future and are of great relevance for the development of the Chinese-Icelandic energy cooperation.

The forum here today is a manifestation of our determination to continue the success of our joint efforts, and it is both an honour and a pleasure for me to join you and other friends in China to secure the success of this important journey.