A Speech
by
the President of Iceland
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How to Prevent Climate Change:
Roadmap to Success.

United Nations Headquarters
New York
21st February 2008

The speech was delivered without notes,
organized on the basis of a set of graphs and pictures.
This is a post-speech typescript.

It is a great pleasure and a privilege for me to have the opportunity to be with you here today and talk about the most fundamental challenge of the 21st century.

We all know that the debate which has raged over the last decade or so about whether climate change is really happening is over. We have now to face up to the question: What can be done? How can we build a roadmap to success?

That the debate is over is demonstrated by a series of international events, ranging from the G8 summit to the Bali Conference and the Security Council, and by the Nobel Peace Price to our friend, Dr. Pachauri, on behalf of the IPCC, and to Al Gore.

The combination of the melting of the ice and the changes in the energy systems in our cities, on every continent and in every country is reminding us of what is happening.

The debate is over but we have however an urgent discussion on how much time do we really have to deal with this problem? Some of the

distinguished scientists who are on the forefront in examining this issue have claimed that we only have 10 to 15 years to take the necessary measures to prevent fundamental climate change. Others who are more conservative maintain that we have perhaps 20 to 30 years. Whichever camp is right, is almost immaterial, because in either case, it is an extraordinarily short time.

I have already, as my friend Hjalmar, the Ambassador, mentioned, been President for 12 years. I know there are some in my country who think that it is already long enough. But to me, it has not been a long time.

That prominent scientists from all countries in the world are now maintaining that we have approximately the same time as the length of my Presidency. That is to me almost a nightmare scenario, such as short time to contemplate what we must do, especially when we also consider what is at stake.

We witness the melting of the ice in the Arctic, in Greenland and in Antarctica, the melting of the glaciers in my own country, Iceland, where we see every year the glaciers receding, glaciers which have for centuries been the largest glaciers in Europe; their thickness being almost half to a whole kilometer. It is predicted by our scientists that within the end of this century, they will have almost disappeared.

We also see the effects on the rising of sea levels, on island states all over the world, states that constitute a prominent part of the United Nations membership; on coastal areas, ranging from the United States to Latin America and to Asia and Africa.

As I said to my friends in Delhi and in the Middle East a few weeks ago, what’s happening in my part of the world, in the North, has a fundamental consequence for every family in Asia, Africa and Latin America. It is the most fundamental demonstration of the interconnection of the world. The Arctic Council’s Report published three years ago, demonstrated clearly that climate change is happening three times faster in the North and in the Arctic region than in other parts of the world.

Recently we have also woken up to what is happening in the Himalayas, these great water resources of India and China. Regrettably, the lack of research in this area is highly disturbing. There are on the Indian side about 9,000 glaciers in the Himalayas. There has only been research on a few of them. The scientists who have looked at this have concluded that the evidence points towards the Himalayan glaciers disappearing on the Indian side in the next 30 to 40 years.

The Himalayan glaciers provide the fundamental basis for food security, the water systems and economic activity of about 800 million people on the Indian side alone. If we add the Chinese side, the disappearance of the Himalayan glaciers will have a fundamental, disastrous impact on more than a billion people, more than the rising of the sea levels, although the concentration of the global debate has been mostly on the rising of the sea levels.

Increasingly, I have been urging the international scientific community and our friends in India and China to make a sustained, dramatic and immediate research effort on the Himalayan glaciers.

We could spend a lot of time here today to go into all of this, but as I said at the beginning, I believe the debate on whether climate change is happening or not is over. The most recent evidence from research on the North Pole ice and the Greenland ice seems to point out, according to my information, that what scientists believed some years ago would happen around 2040 is already happening now. The pace of the melting of the polar ice and the glaciers has speeded up so enormously in recent years that it startles even the scientific community.

We are now faced with a fundamental task: What can we do? How can we combine our efforts to deal with the greatest challenge of the 21st century? I have concluded that this is a task which has to involve not only the international community, the United Nations, the Bali-Copenhagen process, but also national governments which must start taking actions now. There is no excuse for them to wait until the conclusion of the Bali-Copenhagen process have been formulated or formal treaties signed in the following years.

Similarly, regions within countries, and cities have to start taking actions. It has been encouraging to see the initiatives taken by many cities, both here in the United States and in Europe and elsewhere, including the Middle East. This demonstrates what can be done. Furthermore, companies, the business community, the whole entrepreneurial part of our societies have to start taking actions.

When I established with my friend Jeff Sachs four years ago the Global Roundtable on Climate Change, inviting almost 100 big corporations, primarily from the United States and Europe, around one table to discuss this challenge, I was pleasantly surprised to find the forward thinking of some of the strongest corporations, including oil companies and energy companies.

To some extent, I would even go so far as to say that many of the most prominent corporate leaders in the world are ahead of the

international institutions in their conclusions and ahead of the national governments.

But we as citizens, our families, do not have excuses either. If we are going to deal with this challenge, we have to change our behavior, our methods, our daily operations on many different levels. The coalition has to include every aspect of the global society, both formal intergovernmental and international institutions and everybody else, ranging down to the level of individuals and homes.

Of course, the Bali-Copenhagen process could make a fundamental contribution. All of us became very hopeful when the Bali Conference was concluded on a positive note. The map that has been laid out for negotiations, discussions, deliberations and research throughout this process is highly encouraging. But even if the Bali-Copenhagen process becomes 100 percent successful, it will not be enough.

We need a more far-ranging transformation, and that transformation has to concentrate on a very simple but fundamental aspect of this problem. Climate change is perhaps not the right term. In its essence, this is about the future of energy. Without fundamentally changing the structure, the pattern and the nature of our energy systems, on a national, individual, corporate, regional and city level, we will not succeed.

We should therefore start looking seriously at two fundamental resources of clean energy. One is above our head, the sun, which provides us with an enormous amount of clean energy. Fortunately, both companies and scientists and engineers are increasingly giving us methods to utilize the energy of the sun. The other is under our feet, the enormous fireball which we learned at school is inside the earth. The combination of the fireball inside the earth and the sun above our heads points forward to the most fundamental resources of clean energy that can help us to deal with the problem of climate change.

Iceland is significant in this respect. In the last 40 or 50 years we have been able to transform our energy system from being over 80% dependent on coal and oil to 100% of our electricity production being from clean energy resources, and over 75% of our total energy production being dependent on clean energy resources.

If we look at the beginning of these endeavors, in the city of Reykjavik in the 1940s when people began to use hot springs through pipelines or to wash clothes or heat their houses, we see how this has been transformed to an energy resource for aluminum smelters, for entire cities, as well as other regions. We see a fundamental transformation from coal being in the 1940s over 60% of the Icelandic energy resource to

almost disappearing at the end of the century. Similarly, oil, which for the most part of the second half of the 20th century, was the largest part of our energy resource, has also diminished, is today primarily in cars and shipping.

If we look at other countries, we see how high Iceland and Norway are; 100% of the renewable resources for electricity production compared to a few percentages in the United Kingdom, and 20% or so for our friends in Denmark and Finland.

If we look at the so-called primary energy in different parts of the world, and compare Iceland to North and South America and to Europe and Eurasia, we also see a fundamental difference.

Why am I presenting you with this evidence? Of course we are proud of this achievement. But the most fundamental reason is that I believe that if we could do it, so can others. There is nothing so special about Iceland that one can write this off by saying, “Okay, you could do it in Iceland, but the rest of the world cannot do it.”

We should look at the pictures we saw just now. They show the smoke cloud from the coal and the oil fires in the 1940s in the capital city, Reykjavik and then the clean, transparent, beautiful air that we see today. This is the transformation that the entire world has to go through. As I said before, if we can do it, so can others.

Recently, we have been engaged in cooperative projects with other parts of the world, demonstrating how to utilize the fireball inside the earth in order to harness this enormous resource of clean energy, which by and large has not been harnessed in most parts of the world. This global map shows an overview of the potential that can be harnessed in the coming years.

I want to show you also a global map of the geothermal cooperative projects that we have instigated in recent years in the United States and Central America, in different countries in Europe, in Africa, in Asia, including China, as well as in other parts of the world.

With respect to concrete projects in China, we are now building partly through the help of the United Nations University Geothermal Training Program, which has been based in Iceland over the last 30 years, training specialists, engineers and technicians from different countries, utilizing the cooperation with the 30 or so Chinese specialists that we have trained – building now the largest geothermal urban heating system in the world in the city of Xian Yang in China; thereby closing down coal stations. You only have to recollect the news stories that came out of

China recently of the snow and the cold, the disastrous consequences, to see the urgent need for a different type of heating system in China.

In my meetings with President Hu Jintao last autumn, it was absolutely clear that the success of this cooperation in China has made the leadership of that great country conclude that they now have to repeat this in one city after another, in order to speed up the transformation from a coal- and oil-based system in the cities of China to a clean energy systems; in many parts geothermal heating system.

In the United States, which also has a large geothermal potential, we have in the last two or three years initiated cooperative projects in California, and other states. I had a number of meetings with people, both in Congress and the Administration, which led to bills being introduced, both in the Senate and in the House. It is very interesting to see how the United States, which ignored the potential of this clean energy, has in the last 6 to 12 months wakened up to the potential.

In Europe, including Germany, we started a geothermal project last year. Only two weeks ago, our Energy Minister had a meeting with the Energy Commissioner of the European Union. It was the first such meeting where the European Union in a systematic way looked at the huge geothermal potential in Central and Eastern Europe.

In Africa, especially East Africa, the Rift Valley, there is a vast potential for this transformation. Last year we made an agreement with one of the smallest African countries, Djibouti, to transform the entire energy system of Djibouti from being based on oil over to clean energy, primarily geothermal energy.

I have mentioned these examples from China, the United States, Europe and Africa – I could add many others – to give you concrete evidence that a transformation of the energy system, is possible, is happening, but needs to be speeded up if we are going to deal with the fundamental challenge of climate change.

We also need an entirely new orientation towards how we plan cities and buildings, how we construct our living quarters, our offices. In the United States, in New York, even in this UN building, we have a concrete demonstration of how not to do this. The great skyscrapers of this fantastic city are a warning example of maximizing the need for air conditioning.

In the last few years, we have seen interesting examples of a complete transformation of architectural, engineering and city planning,

transformation, which has to be repeated on a large scale everywhere in the world.

I will give you a few examples. A building in Leeds in Britain, built by an Icelandic company. It has gotten the highest score on the official environmental scale in Britain. It is designed on many different levels in order to maximize the light from the sun, while it minimizes the heat. It requires only 20% of the electricity that a normal office building requires from the grid in the city. It saves 80%, but it functions absolutely in a competitive, comparable way to any other office building.

The National Library in Singapore, which was opened last year, an enormously impressive building, not only a great library, but designed in such a way that it requires only 40% of the energy that other buildings in Singapore require, using airline wings and other electricity-saving and power-saving instruments.

Thirdly, the plans for the Masdar City in Abu Dhabi, a remarkable foresight by this small oil state in the Middle East, which is now aggressively building a zero-emissions city. It will be finished in three or four years, being an effective business center, an educational center and activity center, like any normal city, but with zero emission. It has been a great privilege for us to cooperate with the Abu Dhabis on this.

Shenzen in China and other Chinese cities where the American National Research Defense Council has made systematic studies showing that factories through alterations in their procedures, save 40% of the energy without it having any impact on the production, the profit or the quality of the production.

All of this, indicates that the way we produce things, the way we build buildings, how we live, must be a large part of the solution; not only international negotiations on carbon trading or price on carbon. This has to be a fundamental transformation of the way we live, the way we build cities, the way we produce. We already have examples showing that it can be done.

Furthermore, we have examples of fascinating technical progress, scientific and technical progress which can give us results that will help to provide solutions.

Let me mention carbon sequestration. We have in Iceland in cooperation with Columbia University in New York, instigated a scientific research project based on taking the CO_2 from the atmosphere, pumping it down into the ground, where it will potentially touch base with basalt layers and turn into solid rock. Therefore, no danger of it

escaping into the atmosphere later on. There are such basalt layers in India, in Russia, in the United States or other parts of the world. Since the CO_2 moves all around the globe, by instigating what I call pumping stations on different continents where the basalt layers exists, we could help to counteract climate change on a big scale.

Secondly, a deep drilling project. Instead of going just a few hundred meters or so into the ground, the Icelandic Deep Drilling Project, also in cooperation with American scientists, involves going as far down as 5 and 6 km, examining how to harness a heat area between 400 and 600 degrees, utilizing the enormous potential of the clean energy heat inside the earth.

Thirdly, the so-called Kalina project, which is based in the northern part of Iceland. It consists of taking low-temperature areas, and through chemical processes harnessing them up to a level that they will be able to produce electricity on a big scale.

Finally, my favorite mission, which is this: As the continents and countries have the power of harnessing the fire inside because of the movement of the continental plates and the rifts in the earth's surface, we could potentially have in the near future the same potential to harness the geothermal power of the ocean bottom.

If we add all of this together and bring the solar energy, the wind energy and many other aspects of the clean energy into the picture, we have the possibility of transforming our energy systems.

It is also encouraging that many of the most important corporations in the world e.g. in the field of aluminum production, steel production, software and information are already providing leadership in this area. There is now what I would call a race on the corporate world for access to clean energy resources. Countries, regions and cities which can provide such clean energy on a long-term basis will have a strong competitive position in the global market.

When we use the Internet, as we do every day, we don't normally think about that it requires an enormous amount of energy. In my country we are now faced not just with competition regarding access to clean resources from industrial companies, like aluminum companies, but also from some of the world-famous software and internet companies.

In addition, we have seen the transformation of corporate thinking in the use hydrogen, the production of hydrogen buses. Our newest presidential car is a hybrid which we drive around Reykjavik on the electricity generated by the motor.

So, my friends, this is an attempt to give you an overview of the argument that not only do we have to face up to the fact that climate change is happening, and happening faster than we thought a few years ago, but we also have to face up to the fundamental conclusion that this is all about the future of energy. Without transforming our energy system we will not succeed.

But I am an optimist. I am hopeful that we can succeed. I am aware of the enormity of the challenge and the odds. But I seek inspiration from the fact that if we look throughout the 20th century, we have seen mankind being victorious in the face of great adversity.

We all know the history of the First and the Second World Wars, the enormous sacrifices, but also how the creation of the United Nations institutions came out of the Second World War; international cooperation was born through the tragedies of the Second World War.

We have seen man going towards the stars, the space program, the landing on the moon. We have seen the wall in Germany crumble, the transformation of Eastern and Central Europe.

Those of us who welcomed Reagan and Gorbachev in Iceland in 1986 at the height of the Cold War, when it was so deeply frozen that it was earth-shattering news that they were even talking to each other, saw how that meeting led to the beginning of the end of the Cold War, to enormous transformation of global politics, the nuclear arms race, the whole diplomatic and political dialogue, to changes in the political systems in Eastern and Central Europe.

The summit took place in 1986. Ten years later, Europe was completely transformed. 20 years later, we have seen a new international system. If that could be achieved within 10 to 20 years on the basis of the Reagan-Gorbachev summit, I believe we can also succeed with regard to our present challenge. We only have 10 or 20 years to do so; the same time that has passed since Reagan and Gorbachev met in Höfdi House in Reykjavik. Every day when I pass that small house I feel an inspiration of hope and optimism.

We have to realize that unless we pull all our forces together, at every level of our societies and the international community, we will not succeed.