

Welcome Remarks

by

Mr. Adnan Z. Amin

Director-General

International Renewable Energy Agency

at the

High Level Conference of the Global Geothermal Alliance

Florence, Italy

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Your Excellencies, Gian Luca Galletti, Minister for the Environment, Land and Sea,
{Madame. Teresa Bellanova, Vice Minister of Economic Development}

Mr. Stefano Ciuoffo, Council for Productive Activities of Tuscany,

And your Worship Mr. Dario Nardella, Mayor of Florence,

Excellencies, Ministers of Energy, Distinguished guests,

Welcome to this first High Level Conference on the Global Geothermal Alliance, here in Italy, in this beautiful city of Florence. I would like to express my deep appreciation to our host, the Italian Government – Minister Galletti and others, who I had the pleasure of meeting last June at the G7 in Bologna. And I would like to express my deep appreciation for his leadership on Climate Change, both at that meeting and what we have heard from him today, which is inspiring all of us to action and commitment and unity in the face of one of the greatest challenges that we face, thank you Your Excellency. And I would also like to thank the Mayor of Florence, Mr. Dario Nardella, for hosting us in this exceptional historic venue, which I am sure will prove inspiring for our deliberations. This Palazzo Vecchio, I heard this morning, is over 700 years old, Florence is the cradle of the Renaissance which

transformed the future of Europe, and this building was the heart of the municipal government of Florence where all of this tremendous activity was focused. I would like to thank Italy, which has not only been a strong supporter of IRENA, most recently as President of our General Assembly, it is also a front-runner in renewables uptake worldwide and a pioneer in the development of geothermal. Tuscany is home to the world's first-ever geothermal industrial power plant, built in 1913 in Larderello. However, Tuscany's relationship with geothermal energy goes back much further than that – there is evidence of ancient Romans using geothermal by-products for industrial purposes, as well as geothermal steam for their baths. Geothermal is one of humanity's early energy sources, and it is fitting that we are meeting here to discuss its future in one of its birth-places.

Ladies and Gentlemen,

We are living in a time of extraordinary change and opportunity, and this characterised both by threats and by opportunities. I was struck listening to His Worship the Mayor, about the impact that the recent flooding and storms had with the tragic loss of life here in the Tuscany region, and we have also lost some of our

key participants from the Caribbean, who stayed home to be with their people during the time of extreme threat from the hurricanes that we are seeing in the Caribbean. Climate Change has the potential to transform our world for the worst. But it has also galvanised an unprecedented level of cooperation and commitment as we heard from Minister Galletti. Ministers and leaders from around the world are united in a common commitment to make a change, and the opportunity part of this we are seeing with the clean energy transformation, a new pathway for economic growth, for employment generation, for environmental sustainability, and new pathways to investment that will liberate growth in our economies. We can turn threat and challenge into opportunity and growth, and Italy and others are showing us how this can be done. In a few years, renewables have moved to the centre-stage of the global energy landscape and are competitive with conventional energy sources faster than anybody imagines. Cost reductions coupled with innovation and enabling policies have paved the way for record capacity additions and investments. For some years now, the majority of all new power generation capacity added worldwide came from renewables, and remarkably over 50% came from developing countries. The cost of solar photovoltaics (PV) has fallen by as much as 80 percent since 2009 and the cost

of wind by over 30% in the same period, and we expect these cost declines to continue with major implications for our energy mix for the future.

In addition to its strong business case, the global drive to address climate change is providing further impetus to the deployment of renewables worldwide, given that the energy sector accounts for two thirds of global emissions. Earlier this year, we released a new study, in collaboration with the IEA, which outlines how a decarbonisation of the energy sector by 2050, in line with the ‘below 2 °C’ objective of the Paris Agreement, is both technically feasible and economically attractive. Renewable energy and energy efficiency would meet 90% of emissions reductions needed. This energy transition will fuel economic growth and create new employment opportunities. Global GDP will be boosted in our estimation by around 0.8% in 2050, the equivalent of almost USD 19 trillion in increased economic activity between today and 2050. Renewable energy jobs would reach 26 million by 2050 from 9.4 million today. So, we now have a long-term vision of the energy transition and a better understanding of the immense socio-economic benefits that it brings, and we are standing at a moment of transformation and opportunity.

In this overall picture, geothermal which has great potential has been lagging, in comparison to other renewable energy sources such as wind and solar. Currently, only 0.6 percent of global renewable power capacity and 1.1 percent of global investments in renewable energy come from geothermal. Yet geothermal energy has characteristics that are essential to the success of the global energy transition and the successful implementation of the Paris Agreement and the UN Sustainable Development Goals. As a baseload energy source, it is increasingly being used in complementarity with other renewables to produce electricity. Hybrid solutions integrate geothermal with solar to increase energy availability and efficiency. Similarly, geothermal plays an important role in end-use sectors such as household heating and cooling.

We all know what the barriers hindering geothermal scale-up are – high upfront costs of exploration and drilling, challenges relating to the transmission infrastructure, a lack of enabling frameworks and policies, as well as high risks of investment and a shortage of skilled professionals in many countries with high

investment potential. In addition to this, there is low awareness and limited information among decision makers in many governments and utilities.

At the same time, there are countries that have successfully harnessed geothermal resources to power economic growth and meet energy demand, such as Iceland, Italy, New Zealand and France. In this regard, I am delighted that my good friend, former President Olafur Grimsson, is with us here today as few people can tell the story of geothermal and its impact on the growth and transformation of Iceland over the past decades as well as he can, bringing both growth and prosperity to that country. And there is a growing number of developing countries that are overcoming the barriers to geothermal deployment, and many are here. In my own country, Kenya, geothermal output has risen remarkably to some 650 megawatts in 2016 from 130 megawatts in 2007, and consumer electricity prices, I have been told, have been reduced by 30% as a consequence of this deployment of geothermal. And there are many other countries who wish to go down this path. El Salvador, where we recently held our regional conference on geothermal in Central America, has announced its plans to derive 40% of its power from geothermal by 2019 and Indonesia is set to develop additional 5 GW in the next years. I am also pleased that

Doctor Amani Abou-Zeid, African Union Commissioner for Infrastructure and Energy, has joined us today as she will tell us about the African Union's work and development of geothermal energy in the East Africa region.

Ladies and Gentlemen,

International cooperation can help bring the great potential of geothermal energy to fruition, and take it on the same growth trajectory that is experienced by other renewable technologies today.

This was the premise behind the GGA, which was launched at the UN Climate Summit of 2014, to serve as a global platform to catalyse action with the aim of achieving a 500 % increase in global installed capacity for geothermal power generation, and a 200 % increase in geothermal heating by 2030. Goals we think that are absolutely feasible, and perhaps even an underestimate of what we could do. It seeks to realise this through awareness raising about the benefits of geothermal including following an inclusive approach that brings also benefits for local populations while respecting the environment, but also through sharing best practices and customised support to countries with geothermal potential as well as

strengthening capacity building and advancing measures to mitigate investment risks.

Since its launch, 42 governments and 29 organisations have joined the Alliance as members and partners, and a GGA Action Plan was adopted last year, and members and partners are actively engaged in a variety of efforts to advance the Alliance.

At the same time, we in IRENA have been stepping up our engagement in geothermal. We have initiated the implementation of capacity building programmes at regional and thematic levels, we have started to develop our Global Atlas on geothermal resource assessment, and we are working with partners around the world to develop a much better investment framework for geothermal.

This high-level meeting provides a unique and timely opportunity to strengthen the momentum behind geothermal deployment a few months ahead of COP 23 in Bonn and to examine how to take forward the work of the Alliance to ensure it is an effective platform to support this global drive. At the same time, the success of the Alliance rests on the active participation and continuous support of Members and Partners, and their willingness to share their know-how, experience and resources. We at IRENA are committed to be full partners in this effort.

Ladies and Gentlemen,

We have today with us committed governments, the private sector, finance, international organisations, civil society and academia in this meeting. Our common commitment and action can be transformative if we act with determination and unity of purpose. I hope over the coming day we will see the spirit and leave reinvigorated for the challenge ahead, and to ensure you that if we work together we can make a real transformative difference. Thank you for your participation, and I look forward to the discussions to come.

Thank you.