

Keynote Speech

Adnan Z. Amin

(Director General, International Renewable Energy Agency (IRENA))

Keynote Speech, October 14, 2011

Your Imperial Highness, His Excellency Prime Minister Noda, Chairman Saito, Honourable guests, Ladies and gentlemen, it is a great honour to have been asked to give the keynote speech in Japan's Global Environmental Action (GEA) International Conference 2011, before such an august audience, and to represent the International Renewable Energy Agency (IRENA), which is a new intergovernmental organisation created by the international community to support our common transition to a sustainable energy future for all.

The focus of the GEA this year is on "Building Sustainable Societies through Reconstruction: Working with the International Community for Regenerating Japan". It is highly symbolic that IRENA was invited to give the keynote today in the aftermath of the devastating earthquake and tsunami that hit Japan earlier this year. And I would like to express the sympathy of all of us to the victims of that disaster. Around the world we were shocked by the severity of the disaster and we were humbled by the strength and courage shown by the Japanese people in responding to that disaster.

Indeed, renewable energy can make an essential contribution to reconstructing Japan's devastated areas and communities. Beyond reconstruction in the Tohoku region, renewable energy can play a vital role in Japan's energy landscape and in reviving Japanese entrepreneurship, opening a new growth path for decades to come. An important consideration in a crisis affected global economy looking for new growth areas around the world.

Mr. Chairman, at the outset, I would like to thank you and the Japanese Government and people not only for your warm reception and hospitality you have extended me, but also for your support in establishing and taking forward the work of IRENA. Japan is a founding member of IRENA, and a key member of our Council that has played a major role in the establishment and early work of IRENA.

I am deeply convinced that renewable energy can play a pivotal role in the future energy mix in Japan thanks to three essential actors: the Japanese Government and Parliament who are currently strengthening the enabling framework for renewables; the powerful contribution that Japanese public opinion can make to shape a more sustainable society; and Japan's unique industrial base and human capital, which can generate positive change very rapidly and which has developed an outstanding record of success through innovation.

Let me start with a few facts and figures regarding the acceleration of renewable energy uptake worldwide. Renewable energies already account for a large share of global electricity production. In 2010, they supplied 20% of the global total electricity generation and, constituted one quarter of global installed power capacity. The traditional sources of renewable energy, hydropower and biomass, represent the larger share of today's renewable energy supply and have further expansion potential. Wind power has recently seen a boom in investment and will continue to grow rapidly in the coming few years. In the medium term, we expect solar power, both photovoltaic panels and concentrating solar power plants, as well as biofuels and other emerging technologies to make an ever larger contribution.

In May 2011, earlier this year, the IPCC's Special Report on Renewable Energy Sources and Climate Change Mitigation (SRREN) was released in Abu Dhabi in the United Arab Emirates which also serves as the host country for IRENA. The noteworthy findings of the report are that:

- Firstly, close to 80 percent of the world's energy supply could be met by renewables by mid-century if backed by the right enabling public policies, and
- Secondly, the rising penetration of renewable energies could lead to cumulative greenhouse gas savings equivalent to 220 to 560 Gigatonnes of carbon dioxide (GtCO₂eq) between 2010 and 2050.

Despite the global financial crisis and sluggish economic recovery, new global investment in clean energy reached USD 243 billion in 2010, up 30% from the 2009 level. All these numbers clearly show that renewables have now moved into the mainstream and are no longer a niche market.

At the same time, due to growing market shares and economies of scale, we have recently seen significant cost reductions. The cost of solar photovoltaic dropped by half last year and again by 20% this year already. Turn-key PV system prices are expected to drop by 50% by 2020. The cost of onshore wind turbines has been divided by three since the early 1980s. Wind power generation is now closing the gap with thermal generation in several countries. Preliminary results from an upcoming IRENA study presented during our recent official opening of the IRENA Innovation and Technology Centre (ITC) in Bonn demonstrate clearly that the price of renewable energy technologies decreased constantly over the last decade, driving the prices of renewable electricity closer to conventional sources. IRENA will publish a series of working papers on the breakdown of costs and benefits, and potential cost reduction for all technologies in order to better inform decision-makers faced with decisions on energy investment for the future.

Let me now turn to Japan's energy policy. I know that there is an intense discussion now going on in the wake of the Fukushima disaster about the future energy policy. Japan's ambitious nuclear programmes were developed to meet a strongly growing energy demand in an import dependant sector, while at the same time reduce carbon emissions and decrease the country's dependency on fossil fuels.

In 2010, 82% of Japan's primary energy supply, and 63% of its electricity, was supplied by fossil fuels. The share of renewable energy in the energy matrix is relatively modest but some renewable technologies are well established. For example, hydropower in 2010 represented 7% of the electricity production. Other technologies, in particular, solar, wind, biomass and geothermal have a strong potential for development in Japan.

In 2010, Japan had the fourth largest amount of newly installed PV capacity in the world (1GW) and the third largest total installed PV capacity (3.6 GW). In 2010, Japan produced 10TWh of electricity from biomass. These are impressive figures.

The Fukushima disaster caused Japan to lose at once 20% of its nuclear electricity supply, a serious situation for any country. Japan has committed to reducing its greenhouse gas emissions by 6% below 1990 levels, which is an ambitious target given the fact that its energy-related CO₂ emission intensity is one of the lowest among OECD member countries. In addition, the government has put strong emphasis on introducing energy efficiency policies, such as labelling and the Top Runner programme for appliances and vehicles. You are to be congratulated for such a policy of global responsibility.

A major step was taken last month when Japan's Diet passed a renewable energy law setting an obligation on regional power utilities to buy all the electricity produced by wind, solar or biomass operators at fixed prices, thereby establishing a feed-in-tariff (FIT). The law, which goes into effect in July 2012, sets ambitious targets for new renewable capacity within the next decade, nearly five times that currently operating in the country. One reason why this is so significant from our perspective is that a major positive characteristic of feed-in-tariffs is their ability to lower investment risks and ensure investment stability. Experience has shown that long-term stability and predictability of government support is a crucial element to trigger investments. This law represents a major milestone in the reformulation of Japanese energy policy.

Another fundamental success factor to trigger the installation of additional renewable capacity is the definition of a "priority access" for renewables. As renewable electricity would be generated in areas often far from the load centres of Japan's urban and industrial hubs priority access to the grid would provide an assurance to generators that they will be able to sell and transmit their electricity at all times given the variable nature of solar PV and wind.

Interconnectivity across regions also holds the key to the greater deployment of renewable energy sources in Japan. A few years ago experts worried about the reliability of electricity supply with high shares of variable renewables, but we have made much progress since then. The experience in Denmark, Germany, Spain and even China shows that technology now allows high shares of variable renewables to be successfully and reliably supplied to national grids. Greater interconnection capacity between regions allows for higher levels of variable sources to be integrated into the system.

Renewable energy in Japan currently enjoys tremendous support from the general public particularly as a result of the recent events. Transforming this enthusiasm into reality is a challenge but also a wonderful opportunity for Japan.

GEA is an excellent example of the vibrant Japanese multi-stakeholder dialogue. The public debate over reconstruction is turning out to be much broader than restoring broken infrastructure and compensating victims. It is encompassing a wide range of national policies, such as the country's energy policy and consumption patterns that probably will determine the growth path for decades to come. It is a debate that must lead to intelligent sustainable solutions.

It is truly a moment of opportunity that must be seized. Developing renewable energies at a sufficiently rapid pace to restructure the energy mix will lead to investments, jobs and sustainable economic growth as well as improved security of energy supply and reduced dependency from fossil fuels that have seen such price volatility in recent years. It also provides the opportunity to rethink what sustainable society means in Japan.

The third actor I mentioned in my introduction is Japan's unique industry and human capital. There is a paradox here. Although Japanese firms are leaders in green technologies, wind, solar, biomass and geothermal altogether currently only account for only 2.6% of the electricity production. I have had the opportunity to visit Japanese renewable energy industrial facilities, and I know that you can do much more.

Japan is amongst the world leaders in the renewable technology particularly solar photovoltaics, lithium-ion batteries on the critical issue of storage, and on electronics. It supplies the world with cutting-edge technologies. Given its technological resources, there is immense potential for Japan to redevelop the areas devastated by the earthquake and the tsunami. Japan's R&D efforts in energy, could increasingly continue to target deployment of the best available advancements in infrastructure, renewable energy, energy efficiency and smart grids.

The initiative to regenerate Japan and build a sustainable society through reconstruction has seized the imagination of people all over the world and can position Japan as a leader globally in the search for sustainable solutions. Japan's impressive research and development investment together with its deep industrial capacity must be oriented to this challenge. We can bring the best new ideas from around the world to support this effort. We have gained great experience with architecture and design of buildings, transportation infrastructure, new materials, smart grids, energy storage and so on. What is needed is the will to bring this knowledge together with the unique social structure of Japan to develop a new vision for the future.

Investment in a sustainable society would not only provide an important stimulus to the

economy, but would also set a positive example to the world on what is possible for a clean energy future. IRENA would be delighted to support Japan in this endeavour.

I was informed about on-going discussions to build innovative eco-model cities using renewable energy sources in the Tohoku area. This is an opportunity to change the way we think about energy and urban planning, paving the way for replication to the rest of Japan and even beyond to other countries. IRENA hopes to share lessons learned from design and technology in post-disaster reconstruction projects such as the pilot eco-model cities to benefit people all over the world.

Finally, I would like to reiterate IRENA's deep sense of solidarity with Japan today. I know that your great country can overcome the effects of the disaster and I look forward to working together with you for the brighter future that renewable energy can bring. I personally visited Japan a few weeks before the disaster struck. I consider myself a friend of Japan, and I was proud of the way the Japanese people responded with their traditional patience, their resilience and their determination. These are real qualities and ones that can position Japan to develop a new prosperous and sustainable path to the future and act as an example to the rest of the world. I have no doubt that you can do it, and we are here to support you in that effort.