

**Welcome Remarks**

**by**

**Mr. Adnan Z. Amin**

**Director-General**

**International Renewable Energy Agency**

**at the**

**Solar World Congress**

**Jumeirah Hotel, Etihad Towers**

**30 October 2017**

Your Excellency, Dr. Thani Al Zeyoudi, Minister of Climate Change and Environment, UAE

Your Excellency, Ms. Fatima Al Foorah, Assistant Undersecretary for Electricity and Future Energy, Ministry of Energy, UAE

Distinguished guests, Ladies and Gentlemen,

It is a real pleasure to be here at this important gathering. I wish to thank the organisers from the International Solar Energy Society and the International Energy Agency for the invitation to address you today. I want to extend my gratitude to Masdar, who also is hosting the congress and is like family to us at IRENA. When we learned this meeting would take place in our home city of Abu Dhabi, we were delighted to support it.

In fact, I cannot think of a more appropriate place for a solar conference to be held. By establishing IRENA's headquarters here over six years ago, the UAE sent a strong signal to the world that the drive to scale-up renewables is being undertaken globally, even in oil-producing economies. I wish to thank my friend Minister Thani, who personally played a key role in making this happen. And the UAE has continued to showcase the immense possibilities of a prosperous and sustainable energy future. Last January, it announced that it would cut carbon

emissions by 70% and have 44% of power generation from renewables by 2050. Recently, here in Abu Dhabi, the contract was signed for a solar PV park of 1.177 GW at a world record low price of 2.42 US cents/kWh.

Looking globally, solar is the fastest growing renewable energy source, so naturally it lies at the heart of IRENA's work. Last year, we launched one of our flagship studies, *Letting in the Light*, which shows how solar PV power generation is revolutionising the world's electricity systems. The report also analyses the many environmental and socio-economic benefits that an expansion of solar can unlock. This is especially important, considering that the PV value chain already accounted for 3.1 million jobs in 2016.

Today, the global energy transformation is well underway, and solar is central to it. The chief driver of solar deployment is its business case, which has never been stronger. Costs have continued to drop dramatically, with PV projects now offered for 3 US cents per kWh and even less. Just a couple of weeks ago, we heard Saudi Arabia announce it had received a record low bid of 1.79 US cents per kWh from Masdar and EDF for a 300 MW solar PV plant. And last month, we learned that the Dubai Electricity and Water Authority had selected Acwa Power and Shanghai Power to build 700 MW of concentrated solar power at the

Mohammed bin Rashid Al Maktoum Solar Complex, delivering energy at only 7.3 US cents per kWh with storage. These downward cost trends are expected to continue. Our analysis finds that over the next decade, costs for solar PV could drop by a further 60% and concentrated solar power by almost 45%.

The impressive cost reductions have paved the way for growing investment and deployment of solar energy. In 2016, global investment in renewables reached nearly USD 265 billion. By the end of last year, global installed solar PV capacity had reached nearly 300 GW.

In addition to its strong business case, the drive to address climate change is providing further impetus for solar deployment globally. Earlier this year, in collaboration with the IEA and in the context of the Germany Presidency of the G20, we launched a study on the decarbonisation of the energy sector in line with the ‘well below 2C’ target of the Paris Agreement. The report finds that by 2050, renewables and energy efficiency would meet the 90% of emission reduction needs. IRENA’s analysis shows that solar thermal would make up 15% of final renewable energy use in 2050, followed by solar PV at 11% and CSP at 3%. Most importantly, IRENA also finds that the energy transformation

would boost global GDP by around 0.8% by 2050, with renewable energy jobs reaching 26 million.

This energy transformation is reshaping the way electricity is produced, distributed and consumed around the world. With growing solar generation at both the large-scale and small-scale distributed level, a more decentralised and democratised energy system is emerging. In Germany, more than 95% of renewable generators are connected to the distribution grid.

The global solar energy scale-up is also transforming the off-grid sector and expanding energy access. In Africa, an estimated 100 million people are now connected to some form of electricity, mainly through solar. Our study *Solar PV in Africa: Costs and Markets* finds that small PV systems for single households can now provide basic electricity services for as little as USD 56 per year, a cost similar or lower to diesel-fired generation or kerosene-based conventional lighting.

As the energy transformation accelerates, broader and deeper decarbonisation efforts are required. More emphasis must be placed on the use of solar energy for heating and cooling in buildings and industry. Our recent report *Renewable Energy in District Heating and Cooling*

finds that solar cooling could contribute 22% of total district cooling demand in the US by 2030. Solar PV deployment should be combined with end-use electrification rollout. Electric vehicles, hot water supply and flexible demand for electric energy services like refrigeration can facilitate a much higher proportion of solar PV.

New batteries can further drive solar deployment. Although pumped hydro storage dominates total electricity storage capacity today, battery electricity storage systems are quickly emerging, with falling costs and improving performance. Our *Electricity Storage and Renewables* report, launched this month, shows that by 2030, the installed costs of battery storage systems could fall by 50-66%. As a result, the costs of storage to support variable renewable integration, like solar, will be dramatically lower.

Looking forward, innovation is needed in policy and market design to enable greater integration of solar in power systems. While technological solutions exist for connecting and managing grids with high shares of solar PV, markets need to be designed to better facilitate private sector operators and self-generators, and create a level playing field. The increasingly global market for solar PV also requires an international framework for standards, as well as resilient national quality assurance

infrastructure to ensure investor confidence, and we have been working key stakeholders to achieve this.

Concerted global efforts must also focus on drawing in large-scale investors into the solar sector and going beyond small-scale projects. This can be accomplished through standardisation of documentation and harmonisation of regulatory frameworks. With this in mind, IRENA and the Terrawatt Initiative launched the Solar Energy Standardisation Initiative. In coordination with law firms, project developers, public and private finance institutions, we are developing a set of standardised project documents for solar PV projects that can help reduce transaction costs for investors and be used globally.

No one can predict how the energy system of the future will look and operate, but it is clear it will be underpinned by renewables. International cooperation can be a key driver for making this a reality. In this context, we stand ready to work closely with partners, including through initiatives like the International Solar Alliance, and I am delighted that Mr. Shri Upendra Tripathy is here with us today.

Ladies and gentlemen,

We live in a time of extraordinary opportunity. Policies, technologies and markets are today aligned to accelerate the transition to a sustainable energy future. Let us seize this opportunity and work together to achieve it. I wish you a most successful conference.

Thank you very much.