

Keynote Address

by

Mr. Adnan Z. Amin

Director-General

International Renewable Energy Agency

at the

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2018 Global Launch**

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Distinguished Guests,

Ladies and Gentlemen,

I am delighted to take part in the global launch of the 2018 Singapore International Energy Week (SIEW). Over the past decade, the SIEW has become an important fixture on the global energy agenda - a meeting point to envision the energy systems of the future, discuss challenges, develop solutions, and build partnerships. I had the pleasure to participate several times. I am impressed each year again by the lively debates and future-oriented outlook of the discussions and would like to thank the government of Singapore and the Energy Market Authority for this very kind invitation and the hospitality that has been extended to us.

This year's SIEW comes at a time of continued disruption and rapid change in energy systems across the globe. The theme for the upcoming week "Transforming Energy: Invest, Innovate, Integrate" captures the important dimensions of the changes that we are witnessing: the fundamental transformation that is already underway and the need to continue to invest, to innovate and to integrate to realise the immense positive potential that renewable energy offers.

The global energy transformation is driven by the business case for renewables which has never been stronger. Since 2010, the average costs of utility-scale solar PV have fallen by 73% and in the case of wind energy the average cost has dropped 23%. Onshore wind projects are now increasingly commissioned for 4 cents/kWh and record low prices in recent energy auctions in Chile, Mexico, Peru, in Saudi Arabia and the UAE have made USD cents/kWh the new benchmark for solar PV. Similarly, the costs of battery storage technologies are rapidly decreasing and we expect will further decline by as much as 60% over the next decade making this really a grid-scale opportunity for the future. Overall, we are projecting that cost reductions will continue in the years to come and that all currently commercially available renewable power generation technologies will be competitive with conventional fuels by 2020. Technological innovation coupled with digitalisation, big data, and artificial intelligence are further fuelling this change and are reshaping the way energy is produced, distributed and consumed.

The imperative to tackle climate change and achieve the Sustainable Development Goals is providing additional impetus to renewables deployment worldwide. IRENA's analysis shows that energy efficiency and renewable energy

combined have the potential to achieve 90% of the emission reductions needed by 2050 to keep us below a 2°C threshold. Moreover, the energy transition has a net positive impact on GDP and employment. We estimate that global GDP, while decarbonising, will be boosted by 0.8% in 2050 and jobs in renewables, which are currently just over ten million today, will reach 26 million. These numbers underline that renewable energy is key for reconciling social, environmental and climate concerns with the economic growth and development.

Ladies and Gentlemen,

The ASEAN countries are at the heart of this changing global energy landscape as they seek to design their future energy systems against the background of rapid urbanisation, growing populations, economic growth, and increasing income. Taken together, these developments will require governments to meet the soaring energy demand – we expect electricity demand will double between 2014 and 2025 – as well as responding to increasing needs in the housing, transportation, water, and infrastructure sectors, all the while creating jobs and ensuring a healthy living environment for their citizens.

Decision-makers across ASEAN have realised the potential of the renewable energy sector to respond to these challenges and have set themselves the aspirational target of reaching 23% renewable energy in the region's energy mix by 2025. IRENA is delighted to support the efforts in the region to build a renewable energy future and strengthen our collaboration with ASEAN. Last September, we held the first ASEAN Ministers on Energy Meeting – IRENA Dialogue in Manila in the Philippines and agreed to enhance co-operation with a view to advancing the energy transition for ASEAN through strategic actions to support renewables deployment. Under this framework, we are developing a Memorandum of Understanding in support of the ASEAN Plan of Action for Energy Cooperation 2016-2025, institutionalising regular high-level meetings between IRENA and ASEAN and developing an Action Plan to accelerate renewables deployment in the region.

With Southeast Asia being a high priority in our regional engagement strategy, this cooperation will build on a strong foundation. Over the past two years, we have released two major reports: the *Renewable Energy Market Analysis in Southeast Asia* and the *Renewable Energy Outlook for ASEAN*. These reports quantify the costs,

investment needed, socio-economic, and environmental benefits of renewables as well as highlighting key options and priority areas of action in the region.

The findings of these reports show that the region is in a strong position to leverage its role as a financial, manufacturing, and economic hub to leapfrog fossil fuel-based energy generation and benefit from the substantial socioeconomic benefits of renewable energy.

Our analyses also demonstrate that the 2025 target of 23% of renewable energy generation is attainable and that additional renewable energy opportunities remain in power generation. This is especially the case for solar PV, but also bioenergy-based power and wind which can grow faster than we anticipate right now. However, achieving the 23% target will require mobilising 27 billion USD of investments annually, a total of 290 billion USD until 2025 and while this may seem like a large expenditure at the first glance, the benefits of opting for a renewable energy pathway significantly exceed the costs if reduced externalities and socioeconomic benefits are taken into account – which is really the job of development decision makers. In this context, efforts to catalyse private investment

and a focus on project readiness and attractiveness, improving access to capital at the local level and mitigating investment risks, need to be prioritised across Southeast Asia to accelerate renewables deployment.

More action is also needed to increase the share of renewables in end-use sectors, including heating, cooling, and transportation, with the advent of electric vehicles and other technological advances in this field opening-up exciting new opportunities. Beyond technological advances, additional innovations in developing enabling policies, business models, market regulations will be important factors for the success of renewable energy development. IRENA's forthcoming *Innovation Landscape Report*, which will be out in a few weeks, is assessing the status of innovations in the renewable energy sector and will provide insights for future innovation efforts. We expect that fast-moving innovation is going to drive the next generation of cost declines of renewable energy technologies, but it is also going to create a platform for the integration of variable renewable power into the energy sector worldwide.

In view of the increasing number of natural disasters across the globe, including here in Southeast Asia, strengthening energy resilience is key. Decentralised renewable energy systems, including mini-grids, are essential means to ensure that citizens will continue to have access to power, medical and communication services and clean drinking water in the case of disruption to energy services. This potential was demonstrated, for instance, recently during the disastrous flooding that was seen in Bihar in India in August 2017 where solar mini-grids provided essential services and facilitated disaster relief. Off-grid and mini-grids are also an integral part in securing universal energy access, especially in remote areas and on islands, and are an important component of the Sustainable Development Goals.

In this regard, I look forward to working closely with Singapore, as chair of ASEAN, on supporting countries in the region to realise the potential of renewables. Singapore's leadership on research, innovation and financing put it in a strong position to facilitate ASEAN's efforts towards a low-carbon, clean, secure, affordable and sustainable energy future. Over the past decades, Singapore has consistently demonstrated its ability to find innovative and practical solutions to

overcome its resource and space restraints. Its growing investment in research and development to integrate renewable energy into urban environment and build smart energy-efficient low-carbon cities are an important contribution to the global innovation efforts in the field. Already, Singapore is pioneering a number of ambitious projects. These include testing floating solar PVs in two of its reservoirs and solar installations on its high-rise public housing developments. Singapore is also piloting small-scale grids to assess the reliability of electricity supply within a micro-grid infrastructure using intermittent renewable energy sources such as solar PV. As a financial hub, it has the potential to become a leader on innovative instruments for renewable energy finance as countries ramp up their ambitions in the coming years.

Ladies and Gentlemen,

Let me conclude by wishing you all fruitful discussions and I look forward to meeting you at the Singapore International Energy Week later this year to discuss how to invest, innovate and integrate in further detail and continue to build partnerships to achieve a sustainable energy future. I also welcome you all to join for the 4th edition of the International Off-Grid Renewable Energy Conference

(IOREC) that will be held in conjunction with the SIEW and organised by IRENA in cooperation with the government of Singapore. This two-day conference will showcase the extraordinary opportunities that renewable energy solutions are bringing to the off-grid sector and examine technological developments, business models, enabling frameworks and financing options to promote energy access through stand-alone and mini-grid solutions. We expect practitioners to join us from all over the world to look at some of the most innovative solutions that are emerging in the off-grid space and we believe that the 65 million people without access to electricity in the ASEAN region will be well served by these discussions, that create the business case for change for the future. So, with that, I would like to thank you for this very kind invitation to be here and wish you great success for the preparatory phase of the SIEW.

Thank you.