

Opening Remarks to the 40th IAEE Conference by Minister Masagos Zulkifli

It is my pleasure to be here at the 2017 Conference of the International Association of Energy Economics hosted by the NUS Energy Studies Institute. I am happy to note that this is the 40th year of the Conference, a strong testament to its role as an important platform for top representatives from academic, corporate and public institutions to discuss critical issues affecting global energy markets. I was told that this is the first time that it is hosted in Singapore, and I am pleased to extend a warm welcome to all delegates, and to our foreign delegates, welcome to Singapore.

2017 also marks the 10th anniversary of the founding of the NUS Energy Studies Institute (ESI). It is a key partner of the Government and is also recognised internationally as an important partner in conducting multidisciplinary research on global energy issues, as well as promoting discussion on their national, regional and international implications. The Institute is also a strong supporter in facilitating the global exchange of ideas on energy, which is the reason why we are all here today.



GLOBAL ENERGY TRENDS AND CLIMATE CHANGE

Our world is at an inflexion point – whether it is politics at the international level, or in markets and societies whereby we are seeing the emergence of new consumer trends and patterns; and innovative and disruptive technologies changing the norms that we are all used to. The energy market is no different. In the next two decades, global energy demand is expected to increase significantly. The International Energy Agency's World Energy Outlook 2016 projected in its "main scenario" that global energy demand would rise by 30% from now to 2040.

In particular, we are experiencing major shifts in the global supply and demand of energy. Oil and gas markets continue to be sluggish, keeping energy prices lower for longer than expected. Geographically, emerging economies are progressively taking up a larger share of global energy demand – but it is also heartening to see many of them are trying to do so via renewable energy. Renewable energy is currently the world's fastest-growing source of energy and is projected to nearly double in generation capacity by 2040, driven by a strong push in emerging economies such as China and India. For example, India has plans to produce 60% of its electricity from non-fossil fuels by 2027. It is thus timely for this year's IAEE conference to facilitate a discussion on energy demand in emerging economies.

Our discussions on the global energy outlook cannot be divorced from developments on the environmental front – the two are tightly intertwined. Last year, 2016, was a historic year in the fight against global climate change. Countries came together in separate forums and negotiated agreements to put forward their best efforts on reducing greenhouse gas emissions and managing climate change impacts. The Paris Agreement on Climate Change came into force last year, less than a year after it was concluded. This was a monumental milestone as the Agreement is the most ambitious global climate agreement ever negotiated. More recently, even though the Trump Administration has decided to pull out of the Agreement, other major players such as China and the European Union have pledged their continued support for it. This shows the very challenging dynamic put forth by climate change – but also underscores the importance of working together as an international community to address it.

Singapore only contributes 0.11 per cent of global emissions, but we believe it is important to play our part as a responsible member of the international community. As part of the Paris Agreement, we formalised our pledge to reduce our emissions intensity by 36% from 2005 levels by 2030, and to stabilise greenhouse gas emissions with the aim of peaking around the same time. This is an ambitious goal, and one that we are committed to uphold. Moving forward, our challenge then is one of how to continue to grow and prosper in an increasingly carbon-constrained world.

SINGAPORE'S ENERGY DEVELOPMENT AND ENVIRONMENTAL SUSTAINABILITY

Let me elaborate further. Singapore is a small, open economy with no indigenous energy resources. We rely heavily on imported fuels – natural gas fuels about 95% of our electricity generation and is an important industrial feedstock – which means that we are heavily exposed to the volatility of energy markets. Our energy demand is projected to increase at a compounded annual growth rate of between 1.2% to 1.8% over the next decade, in line with projected increases in overall population and economic growth. However, we are alternative energy disadvantaged – we lack the land and climate conditions necessary for the large-scale deployment of renewable energy. Solar energy is assessed to be the most feasible for Singapore given our location but large-scale deployment of solar is not without its challenges. We have to face these energy and resource constraints more acutely in a world that will become more carbon-constrained.

On a positive note, we were fortunate to have pursued economic growth in tandem with preserving our environment since the early years of our independence in the 1960s. We strove to create a vibrant and liveable city underpinned by our belief that economic growth and environmental sustainability can and should be pursued together, rather than be seen as trade-offs. This is because there are externalities arising from both these objectives which are mutually reinforcing and would strengthen Singapore's value as a whole.

Given this, we are embracing this new environmental challenge and have embarked on a path to reduce our carbon emissions and energy consumed in tandem with each dollar of growth that we achieve. For example, we are actively building up a clean energy ecosystem to seize new opportunities particularly in the solar energy sector. Since 2007, we have grown our clean energy industry ten-fold. Singapore's green economy generated around 60,000 jobs and contributed around \$6.2 billion to our GDP in 2011. We will continue to help the clean energy sector grow, which can translate to more jobs and enterprise, and also promote economic growth.

CLIMATE ACTION PLAN

We released our Climate Action Plan in 2016 which details the measures that we will be taking both on the mitigation and adaptation fronts. We are adopting a multi-pronged approach, involving the key sectors, stakeholders and partners. I will elaborate more.

Our industry sector is the largest consumer of energy, and emitter of greenhouse gases in Singapore – consuming about two-thirds of our total energy consumption, and contributing about 60% of our carbon emissions in 2014. Improving our industrial energy efficiency is thus a key strategy for us to meet our Paris pledge. Earlier this year, we enhanced the Energy Conservation Act – a key piece of energy conservation legislation – to spur efforts to improve energy efficiency in the industry sector. We introduced new requirements for companies to conduct regular energy audits and put in place energy management systems. We will also phase out inefficient motors from our market starting next year.

We also made a decisive move recently to factor the impact of greenhouse gas emissions through a carbon tax to be implemented from 2019. Through enhancements to the Energy Conservation Act and the implementation of a carbon tax, we hope to encourage the industry to reduce their carbon emissions and improve their energy efficiency when and where it makes the most business sense.

As a densely populated city, the building sector is another energy-intensive sector that we are working closely with to manage energy consumption. The Green Mark scheme, administered by the Building and Construction Authority, has been assisting the sector in the shift towards more environmentally sustainable buildings. I am happy to note that nearly one-third of all buildings in Singapore are Green Mark certified as of January 2017, and we are on track to achieve our target of having 80% of all buildings in Singapore green by 2030.

In the transport sector, we are actively encouraging commuters to shift to more sustainable modes of travel such as public transport and improving the energy efficiency of current modes of transport. We also intend to deploy Electric Vehicles in every housing estate by 2020, as part of our “car-lite” vision as a sustainable and liveable city.

I earlier mentioned our vibrant local clean energy sector. We are targeting to increase the contribution of solar energy – the most viable renewable energy available to us – to 1GWp (Gigawatt peak) beyond 2020. At peak periods, this will represent about 15% of our electrical power demand. Some of the initiatives on this front include our piloting of a floating solar PV installation in Tengah Reservoir, an energy storage system test-bed, and the Renewable Energy Integration Demonstrator micro-grid test-bed on Pulau Semakau. We hope that such projects can be the seeds for scaling-up of innovative clean technologies in Singapore, as well as other markets in the region.

A few weeks ago, the Government also published its inaugural Public Sector Sustainability Plan. This is a joint effort by 16 ministries and 64 statutory boards to be more sustainable. Some of the energy-related initiatives in the plan include reducing the public sector's electricity consumption as a whole by 15% from 2013 levels by 2020, and adopting more solar energy on our premises. We hope that this will spur the wider community to adopt more sustainable practices.

However, the best laid policies would not work without the support of businesses, individuals and associations – in fact, everyone needs to play a part in creating a Sustainable Singapore. The heart of each energy-related policy ultimately drills down to encouraging businesses and the individual to go green. For it is only when we have a green mindset that Singapore can become a hub for the cutting-edge business of sustainable development, and Singaporeans can in turn explore new opportunities in this exciting and meaningful sector. I urge you to play a part in the Sustainable Singapore Movement which was launched last year through your actions and decisions in your daily lives.

CONCLUSION

I know that many new studies and findings will be shared at this conference, and I hope that many of them will find their way into policy decisions in your countries and provide lessons for others. I hope that new partnerships will be formed and collaborations strengthened as we work towards a low carbon economy, while keeping to our environmental sustainability and economic competitiveness objectives.

I would like to wish you all a successful conference. Thank you.