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Institute of South Asian Studies
National University of Singapore
29 Heng Mui Keng Terrace
#08-06 (Block B)
Singapore 119620
Tel: (65) 6516 4239 Fax: (65) 6776 7505
www.isas.nus.edu.sg
<http://southasiandiaspora.org>



Joint ESI-ISAS Conference

Towards a Low Carbon Asia: The Challenges of Ensuring Efficient and Sustainable Energy

The world is undergoing a low-carbon energy transition, which presents both significant opportunities and challenges to Asian economies. Besides the shift towards greater emphasis on the use of renewable energy and energy efficiency, there is increasing desire for a coordinated approach and a closer international cooperation. This report highlights key points on these aspects which were deliberated upon in an international conference jointly organised by the Energy Studies Institute and the Institute of South Asian Studies in Singapore in November 2017.

Elena Reshetova and Rajeev Ranjan Chaturvedy¹

The world is undergoing low-carbon energy transition, which presents both significant opportunities and challenges to Asian economies. Besides the shift towards greater emphasis on the use of renewable energy, there is also the realisation of the need to ensure greater efficient energy use. It has been pointed out that, for such a transition to be successful, there

¹ Dr Elena Reshetova is a Research Fellow at the Energy Studies Institute (ESI), National University of Singapore (NUS). She can be contacted at ereshetova@nus.edu.sg. Mr Rajeev Ranjan Chaturvedy is a Research Associate at the Institute of South Asian Studies (ISAS), an autonomous research institute at NUS. He can be contacted at isasrc@nus.edu.sg. The authors bear full responsibility for the facts cited and opinions expressed in this paper.

needs to be close coordination between policy, technology and capital, as well as closer international cooperation. To discuss these aspects, the Institute of South Asian Studies (ISAS) and the Energy Studies Institute (ESI) of the National University of Singapore organised an international conference, “Towards a Low Carbon Asia: The Challenges of Ensuring Efficient and Sustainable Energy”, on 28 November 2017 in Singapore.

The conference was geared towards participation by a wide cross-section of the public, including industry, business, policymakers, regulatory agencies and academics. The conference examined the energy transition taking place in Asia, focussing on South Asia, particularly India, as well as China, Singapore and the wider Association of Southeast Asian Nations (ASEAN) region. At the event, the participants covered topics related to climate change, the political economy of energy choices and sustainable energy access.

Professor Ang Beng Wah, ESI’s Executive Director, welcomed the conference participants and highlighted the aims and objectives of the conference. Mr Vikram Singh Mehta, Executive Chairman, Brookings India; and Senior Fellow, Brookings Institution, United States (US), delivered the keynote address for this conference.

In his address, Mr Mehta introduced the issue of climate change from an Indian perspective and underlined that India sits at the nub of the crisis of the current high carbon model of development. It is not responsible for this crisis and it can legitimately argue that it must not bear the costs of adapting to and mitigating its consequences. However, India cannot escape the reality that it is amongst the nations which are most vulnerable to global warming. Mr Mehta identified five factors that define the reality of India’s energy sector and argued that these factors should be regarded as predetermined trends that will influence the shape of India’s future energy profile, at least for the foreseeable future, irrespective of the specifics of policy. He underlined that the Indian government recognises the severity of the problem and has embarked on an ambitious programme to tackle the crisis on its own. However, it requires better alignment of the political, institutional and financial framework for implementation in a given time frame. Finally, he laid out five propositions as necessary first steps towards a low carbon future.

Mr Mehta's address was followed by a dialogue session with the audience, which was chaired by Ambassador Gopinath Pillai, Chairman of ISAS, and Ambassador-at-Large, Ministry of Foreign Affairs, Singapore. Mr Mehta addressed various questions relating to the topic of the conference, including current US-India relations and potential bilateral cooperation in the development of battery technology and storage; India's commitment to the Paris Agreement goals; India's energy cooperation with the neighbouring countries; local content policies; and national and local level regulatory environment in the energy sector.

The dialogue session was followed by a panel discussion moderated by Dr Amitendu Palit, Senior Research Fellow and Research Lead (Trade & Economic Policy) at ISAS. Mr Ng Wai Choong, Chief Executive, Energy Market Authority (EMA), Singapore; Dr S Narayan, Visiting Senior Research Fellow at ISAS and Former Economic Adviser to the Prime Minister of India; Mr Henning Gloystein, Asia Energy Editor at Thomson Reuters; and Dr Anthony D Owen, Principal Fellow and Head of Energy Economics Division at ESI presented on the panel. Together, they discussed the issues identified by the keynote speaker and broadened the discussion to include Southeast and East Asia. Each speaker gave his perspective on the challenges and opportunities different parts of Asia face in their low-carbon energy transition efforts.

Mr Ng spoke about the experience of the EMA in ensuring efficient and sustainable transition in Singapore. The EMA believes in harnessing market competition via separation of contestable functions from the monopolistic functions of the electricity market. Singapore's wholesale electricity market is complemented by the futures market with trades up to 2 years in advance. Currently, Singapore is in the process of opening up the retail electricity market for competition and is moving towards a fully liberalised electricity market. In addition to national policies, regional cooperation plays an important role in promoting sustainable energy transition. For the ASEAN countries, the target for improving energy efficiency is 20 per cent by 2020 and increasing the share of renewables to 23 per cent by 2025. A successful power integration project is the one between four countries in ASEAN for the export of hydro energy from Laos through Thailand to Malaysia and Singapore. ASEAN member states are also cooperating on capacity building by organising workshops and seminars on topics such as energy efficiency, renewable energy policies, and financing.

Dr Narayan focused on the challenges and potential solutions for sustainable energy transitions in South Asia. He remarked that all arguments around ‘sustainable’ are concentrating around coal. With regards to sustainability, oil and gas are much more available than 10 to 15 years ago. Coal argument comes in when one speaks about electricity generation, but every alternative fuel is imported. There is immense pressure on the finances of each country to replace coal. Further, he suggested several solutions, including taking clues from China of the last 8 to 10 years and reducing the energy-gross domestic product (GDP) ratio, focusing on national interconnectivity and improving transmission, and implementing policies related to energy efficiency and storage.

Mr Gloystein spoke about the energy transition in China, which is changing from being “the champion of stink” to becoming the leader of green power. Since 2012, worldwide investment in renewables overtook investment in fossil fuels. With China’s interest and involvement, solar capacity boomed, leading to the world-wide spread of solar and China being a big part of it. In addition to solar, electric vehicles (EV) are a game changer as well. China adds two million cars every month, and almost all of them run on gasoline. However, this is changing, and China plans to dominate EV production and sales, as well as battery production by 2020. To support these ambitions, China will change its domestic market rules. For example, it plans to ban combustion engine cars in the near future and cease all imports of plastic rubbish in 2017. Even though China is not in the top three polluting countries anymore, it has taken the first steps in the biggest energy, technology and environmental turn-around the world has ever seen. It is also actively working to become the world’s green and clean technology leader.

The last speaker of this panel, Dr Owen, discussed energy transitions in ASEAN region. He underlined the two major challenges of the region – access to electricity and access to clean cooking oil. ASEAN’s goal is to address both these challenges and to make electricity accessible to everyone in 10 to 15 years. Currently, 250 million people in ASEAN have no access to clean cooking oil. The region has small oil and gas reserves but it is well endowed with hydro resources. There is, however, a lot of uncertainty as to long-term sustainability, particularly in the lower Mekong region. Dr Owen enunciated that the role of efficiency measures such as getting rid of subsidies and integrating gas and electricity markets are important in order to reduce emissions. As a result, emissions will still be rising, but carbon intensity in terms of GDP and per unit of power generated will decrease. This achievement is

reflective of the higher efficiency of coal-fired power plants, and introduction of renewables into the energy system. However, the integration of renewable energy into an existing grid is a complex task. First, solar and wind technologies require high up-front capital costs. Second, renewable energy is variable and intermittent in nature and this may cause problems for the electric power system.

Dr Palit underlined the key points made by the speakers, including the continuous reliance on fossil fuels, the economics of renewables, and the energy transition challenges ahead. Prior to opening the floor to questions from the audience, Dr Palit invited the speakers to discuss several issues, for example, their views on potential subsidies for renewable energy in China and their implications for the region; ASEAN's renewable energy goals and challenges in implementation; and the effect of changing oil prices and other developments that could influence the quest of countries for sustainable development. The panellists also received a wide range of questions from the floor. These included Singapore's role in driving regional energy initiatives as a chair of ASEAN in 2018; the upcoming carbon tax in Singapore; the dilemma of centralised versus decentralised energy management approaches; the role of regulators in valuing social and environmental costs; benefits and limitations of feed-in tariffs; the governments of developing countries balancing short and long-term goals; and the future of nuclear power in Asia.

The conference ended with closing remarks and a vote of thanks by Dr Christopher Len, Senior Research Fellow, ESI.

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