

Panel Discussion Summary Report
Asia-Pacific Regional Initiative on Energy, Environment and Ecosystems (3E) Nexus for
Sustainable Development
24-25th February, Hulhule Island, Male', and Maldives

Summary of each panel discussion by session-wise:

Session 5-Renewable Energy Session

The first speaker (Prof. Rinaldy Dalimi, UI, NEC, Indonesia. “**A scenario toward renewable energy era for Indonesia energy demand**”) presented a scenario towards the renewable energy era in Indonesia that was divided into 3 different phases.

- The first phase is started from the year 2011 as the beginning era, following the Fukushima case that still relied on fossil fuels/nuclear as source of energy.
- The second phase is between 2011 – 2050 that is divided into two phase, Phase 2A (2011 – 2030) that requires a support policy for RE to be applied and Phase 2B (2030 – 2050) that requires no policy from government because the market will decide the usage of RE because by that time the fossil fuel is relatively more expensive than the RE.
- Finally, the phase 3 starting from 2050 onward where there is 100% of RE consumption. The rooftop solar cell and Space Solar Power Station (SSPS) will dominate the source of energy consumption. It was stated that the use of RE in each country not only depends on the capability of domestic industry in that country, but more influenced by the availability of the RE technology in the international market. Since the RE technology are available in the international market with a cheaper, compare to electricity from the grid, the consumers will buy the products. This is quite a challenge for the market.

The second speaker (Prof.Tri Ratna Bajracharya, Tribhuvan Univ., Nepal. “**Nexus between Renewable Energy Technology and Climate Change Mitigation in Nepal**”) shared his view about the major challenges in promoting the renewable energy technologies (RETs) that covered financial, technical, institutional, policy and legal issues. Although the energy consumption is still lower in Nepal as compared to other

neighbouring countries, but the unequal distribution due to the non synchronized grids will result in unequal load shedding. On the other hand, it was also stated that the RETs provide socio-economic and environmental benefits to people that contribute for adopting and ensuring better adaptation to climate change based on the local context. It was shown that theoretically altogether 4.45 million tons of CO₂e of the GHG emission can be mitigated per year if all the remaining technical potential of deploying seven major RETs consisting of biogas, improved water mills, stand-alone micro-hydro plants, mini-grid micro-hydro plants, solar PV home systems, mud-ICS and metal-ICS were installed. The challenge for achieving this, is how to integrate the policy that supports the implementation of the CO₂ mitigation through the RETs (it is still under different ministries).

The third speaker (Prof. Janaka B. Ekanayake, University of Peradeniya, Sri Lanka. "**Smart Grid to accommodate more renewable**") presented the potential and the application of RET in Sri Lanka, particularly PV, Wind, CoGen, Biomass, Small Hydros (Sri Lanka has large reservoirs where hydro energy can be used as a big battery, 1350 MW). Several barrier and challenges were also mentioned in relation to the implementation of RE, among others: its generation variability, how to store and making use of the RE's potential, besides operational and stability issues. The power system and power grid should be evolved to a smart grid to overcome some of the anticipated issues because it more complex in the future: cost-effective and grid friendly will be the key words.

The fourth speaker (Prof. Zuriati Zakaria, Head, Department of Environmental Engineering and Green Technology Malaysia Japan International Institute of Technology, UTM, Malaysia. "**Implementation of Feed in Tariff in Malaysia. Case study: Public participation through the Solar Home Rooftop programme**") provided a good example of the government policy and role in the country level on how to implement the RE by the implementation of Feed-in Tariff (FiT). It provides the much needed thrust for RE industry. The four RE resources that are eligible for FiT are biogas, biomass, small hydropower and solar photovoltaic (PV). The Solar Home Rooftop Programme is initiated by SEDA (Sustainable Energy Development Authority) to encourage massive public involvement to install solar PV system. The challenges are

not only financial issues through the introduction of incentives, but also the raising the RE awareness particularly for individuals/households.

General Remarks:

- The RE is very potential to be implemented in country levels as the main energy resource, because it will alter the diminishing fossil fuel energy resources and in the same time, it mitigates carbon emissions for the climate change.
- To be successful, at the beginning the RETs implementation must be under the full and integrated supports from the central government until the market takes over the mechanisms because the fossil fuels cost will increase.
- The challenge of the RETs corresponds to the initial investment, seasonal resource variability, people awareness, besides technical, institutional, policy and legal issues.
- The 3R NEXUS network of experts between Asia-Pacific Countries will be potential to enhance the development of sustainable countries through academic campaign.