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Committee on Environment and Development

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Outcomes of key regional dialogues on sustainable development

**Conclusion and recommendations of the 2014 policy
dialogue on energy for sustainable development for
Asia and the Pacific**

Summary

The Economic and Social Commission for Asia and the Pacific (ESCAP) organized the Policy Dialogue on Energy for Sustainable Development in Bangkok from 26 to 28 November 2014 with the objective to promote ongoing dialogue and actions towards the implementation of the outcomes of the Asian and Pacific Energy Forum (APEF).

The annual Policy Dialogue reviews and discusses focus areas for the annual APEF Regional Energy Trends Report and to provide direct feedback and inputs for the APEF Energy Data and Information Portal. It merges the three pillars of the APEF Implementation Support Mechanism to facilitate the process leading up to APEF 2018.

The Committee may wish to take note of the conclusion and recommendations of the Dialogue.

I. Energy Situation in Asia and the Pacific: Emerging and Persistent Issues

1. The ESCAP Executive Secretary moderated a panel discussion “Energy Situation in Asia and the Pacific: Emerging and Persistent Issues.” The following issues are some of the highlights from the Panel Discussion:

- In general, the panelists expressed views that the latest decline of oil price would not affect economic growth of fossil fuel exporting countries in the long run, although there might be some decline in the short-term.

* E/ESCAP/CED(4)/L.1.

- The momentum towards aggressive deployment of renewable energy technologies and energy efficiency in the Pacific will not be lost with strong political commitments of policy makers combined with the fact that many of these initiatives are grant-based initiatives, which are already committed towards achieving established goals. It was felt that there will be minimal impact on the deployment of renewable energy technologies at the national level despite the trend towards declining oil price.
- Significant potential exist for expanding energy infrastructure between the Russian Federation and the Asian region for oil, gas and electricity. The Russian Federation is also transforming the structure of export from exporting crude oil and natural gas to refinery products. Similar potential and interest to expand energy related infrastructure from the Islamic Republic of Iran was also expressed.
- As the ASEAN Economic Community (AEC) will be established in 2015, ASEAN has already embarked on the establishment of the ASEAN Power Grid and Trans-ASEAN Gas Pipeline to strengthen infrastructure connectivity. Further opportunities through AEC are expected in the form of investment and technology transfer.
- In China, an ambitious goal was recently announced to cap GHG emissions by 2030. For this goal to materialize, China will have to adopt strong strategy and regulatory framework to accelerate the utilization of renewable energy with a target of 20% of the TPES by 2030. A strong market mechanism needs to be introduced to support the realization of this goal.
- In promoting private sector participation in the energy sector, there is a greater need to have clearer national policies to support private sector. These policies need to be formulated on more rigorous data collection and analysis that supports better understanding on the impact of these policies on the society at large.

II. Integrating Variable Renewable Energy into the Power Sector

2. The Asia-Pacific region is rapidly increasing the production and percentage share of variable renewable energy in the regional electricity mix. In 2012, the regional share reached 1.5%, up from just 0.1% in 2000. In the last few years, the Asia-Pacific region has emerged as a driving force in the global technology development and upward trend in variable renewable energy grid integration. Three of five ESCAP sub regions have demonstrated a steep increasing trend in variable renewable energy generation and the trend is expected to continue as technology prices drop, and member States adopt ambitious targets and increasingly robust supporting policy frameworks. However, a number of challenges and barriers remain to be overcome in order to accelerate VRE integration within the power sector.

- Grid instability is still considered a significant barrier to integrating higher rates of VRE. On smaller networks, experience in the region has shown high levels of VRE integration have led to grid instability issues.
- Many countries are developing and have unmet and ever-increasing energy demands. Therefore, a need exists to balance and harmonize short and long-term goals for meeting both energy

and sustainable development requirements. This requires strategic and coordinated short- and long-term planning.

- The use of different technologies and resources creates compatibility and stability challenges, requiring a comprehensive approach to balancing these resources.
- The Pacific Islands States are spearheading the region in setting targets to rely 100% of its electricity generation from renewable energy, including the revised Tonga Energy Roadmap. The region largely lacks the same advanced technology capabilities exhibited by developed nations that have achieved higher percentage shares of VRE.
- Although cases exist in the region where wind-generated electricity is exhibiting price competitiveness with conventional sources, the unit price of electricity generated by renewables is generally high. Keeping electricity prices low is a primary concern for developing countries that need to meet their growth needs. Improved grid infrastructure and management can mitigate price increases, but subsidies are needed to promote renewable energy to allow achievement of scale. Incorporation of externalities into the calculations of energy costs between resource types can help level the playing field between fossil fuels and renewables.
- Integration of grid systems and normalizing transmission standards and grid codes can facilitate integration and enable expansion of energy markets within sub-regions and the Asia-Pacific region as a whole.
- Cross-border transfer of generation goes hand-in-hand with realization of economies of scale, especially for member States with lower demand, or where wind and solar resources exist along border regions. This integration can increase economies of scale relating to power generation, thereby lowering prices and raising generation efficiencies. Unifying transmission and distribution technologies can increase domestic and regional energy security and reliability.
- Improvement of existing grid networks can reduce losses and help meet energy demand. These factors, combined with better load balancing, larger balancing areas including cross-border transmission, can enable higher levels of VRE integration.
- Although countries have different situations, the basics of a solid regulatory and technical framework are the same. Harmonization of electricity system standards and grid codes is currently being researched by ASEAN and SAARC, and interest has been demonstrated by the Pacific. This issue offers a potential focus area for regional cooperation.
- Advancement in technology adoption is needed within the region. Automated operations management, advanced forecasting, effective transmission system operators can raise the level of VRE grid integration. Further exploration into solar and wind and solar compatibility and balancing potential is required. At the same time, with the increase of VRE, the need exists to incorporate storage solutions such as hydro pumping.
- Knowledge sharing and technology transfer is required to advance VRE integration. Fostering more South-South cooperation to arrive at best practices and solutions that can better be applied to the Asia-Pacific context can promote VRE penetration into energy systems.

- Inner Mongolia, China demonstrated a successful case of high level of wind power integration with approximately 25% wind and 70% coal within the power mix. Contributing factors include advanced grid operations and cross-border trade with Mongolia.
- China is also exhibiting emerging innovation in energy storage solutions by pairing electric vehicles with smart grid operations and new energy development. This comprehensive approach enables storage of VRE power, while eliminating GHG emissions and improving local air quality.

III. Promoting High-Efficiency, Low-Emission Coal-Fired Power Plants

3. Coal will remain the major source of electricity generation in the Asia-Pacific region for decades to come due to continued energy demand growth. The region has relied on coal to accomplish much of the economic growth, which has enabled infrastructure development, leading to poverty reduction. Policy makers are aware of the need to shift towards more efficient coal-fired power plants to minimize social and environmental impacts. However, the region has not widely adopted High-efficiency, Low-Emission (HELE) Coal-fired Power Plants (CFPPs) technologies for cleaner energy.

- Although high upfront capital costs of HELE technology represent a large barrier, the per unit electricity generation cost of HELE technologies are lower compared to subcritical coal fired power plants when operations, management and fuel costs are taken into consideration over a 30 year period. Levelized Cost of Electricity (LCOE), incorporating this long-term perspective on costs, is a useful tool for comparing across various generation technologies but cannot be the sole metric used when analyzing power plant cost due to various factors such as fluctuating coal prices and utilization rates.
- A “cold war” exists between coal and renewable energy, which places interests at odds. Instead, these interests need to be aligned. VRE requires a stable baseload in order balance power systems due to the intermittent nature of wind and solar. VRE and HELE coal can coexist and complement each other within stable and flexible grid systems.
- Climate change is a global issue and should be tackled as a region, not country by country. The barriers to broader HELE adoption need to be lowered so that climate change can be addressed on a regional level. The technology, with both its local and global benefits should not be possessed solely by those with higher technical and financial capacities. The responsibility to address the causes of climate change is the responsibility of all member States and broader cooperation is required.
- With vast numbers of subcritical CFPPs currently in operation, it may take decades to phase out these inefficient plants. The economics covering the entire value chain, including employment, need to be taken into account before power plants are shut down in favor of new generation technology.
- Long-term sustainable development goals need to be reconciled with short-term electrification needs in order to avoid locking in to technologies for the next 40 years that will create an abundance of emissions, creating environmental impacts at local and global

levels. Best practices from the region and globally need to be replicated and improved upon to increase options for member States.

- Regional cooperation and knowledge sharing can help reduce some of the technological gaps between member States with respect to HELE coal-fired generation. In particular, sharing of policies, regulations, and targets could facilitate further deployment of HELE. Funding initiatives to encourage HELE generation may also be established.
- In Japan, all of the coal-fired power stations are equipped with air pollution control equipment. Their emissions are controlled by strict regulations. Power station operators comply with the regulations strictly and sincerely during the operation. As a result, Japan gains cleaner air “Blue Sky” without air pollution from the combustion of coal. Japan has coal-fired plants such as USC and promotes utilization of HELE coal-fired power generation technology in addressing climate change.
- Russia is overhauling its power generation sector and is looking at integrating best practices not only from within Russia, but also from around the world in an effort to invest in the most cost-effective and efficient technologies. Working with the private sector and paying for licenses in order to acquire the most efficient generation technologies is also an option in addition to technology transfer and knowledge sharing from member-states, including China and India. Power producers within Russia are asking the government to provide cost benefit analyses as well as risk calculations associated with these higher-efficiency generation technologies in order to determine the cost effectiveness. This illustrates a willingness to move toward more efficient generation technologies.

IV. Development of the APEF Implementation Support Mechanism

4. The secretariat has developed the concept of the APEF Implementation Support Mechanism, which was presented to and agreed by participants attending the Policy Dialogue in 2013. The secretariat presented the progress that has been made to date and sought advice and guidance in furthering its efforts to support the implementation of the outcomes of the first Asian and the Pacific Energy Forum, held in Vladivostok in 2013.

A. The APEF Portal

5. The portal was demonstrated with current data and policy access functionality. Participants were reminded that the portal is currently under development and therefore complete data and policy coverage has yet to be completed. The secretariat also outlined the future direction of the portal, including development of country pages and regional infrastructure mapping.

- As a data and policy access tool, the APEF Portal platform was considered highly advanced and useful.
- A process is needed to facilitate official submission of information to the APEF portal. A template is needed to enable member States to provide their input. A review process is needed to ensure agreement by member States on the information distributed.

- The development of the APEF Portal must consider both comparability of data as well as reliability and acceptance of data. Concerns were raised regarding the acceptability of IEA as the data source for the portal. Policymakers during their decision-making processes rely on their own data, not IEA data. Therefore, if this portal is to act as a tool for policymakers, ESCAP should consider the inclusion of national data.
- The establishment of a network of national energy focal points was agreed as the best means to enable the secretariat to gather energy information, regularly communicate with member States on energy issues, receive immediate feedback, and increase cooperation.
- The secretariat is currently limited in resources to gather country level data, but will consider options for integration of national data at later stages of portal development. In the near term, the secretariat will develop country pages with links to national energy databases.
- Collaboration with regional institutions can better facilitate the information feed into the APEF portal. SAARC, ACE, CAREC and SPC suggested the establishment of collaboration with ESCAP to assist in the gathering of energy information.

B. The APEF Regional Energy Trends Report

6. Member States were requested to provide feedback on the Regional Energy Trends Report and provide input on how to create a meaningful report. The following potential focus issues put forth by participants for the next report:

- Access to energy services
- Energy tariff setting
- HELE oil and gas technologies
- Energy-water nexus
- Integration of regional energy markets
- Harmonization of standards and approaches
- High levels of renewable energy grid penetration
- Grid stability issues with renewable energy integration
- Regional grid systems and connectivity
- Coal options for small island States
- Energy Efficiency

7. Concern was raised regarding ensuring full representation of member States interests in the decision-making process around determining next year's focus area for the Regional Energy Trends Report. The meeting suggested to the secretariat to utilize official channels of communication to seek guidance from the member States in deciding on the topics for the report as well as the agenda for the policy dialogue.

8. With a view to establish an effective channel of communication, it was generally agreed that the secretariat should identify a focal point from each country who could advise on matters concerning the APEF Implementation Support Mechanism, including collection of policy information and review of documents.