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**Economic and Social Commission for Asia and the Pacific**
Committee on Energy

**Expert Working Group on Universal Access to Modern Energy Services, Renewable Energy, Energy Efficiency and Cleaner Use of Fossil Fuels (EWG-SDG7)**
6th meeting

27 April 2022, Virtual meeting
10:00 – 12:00 hrs. and 14:00 – 16:00 hrs. (GMT+7)

# Concept Note

# Geospatial data for energy policy and planning in Asia-Pacific

## Background:

Geospatial data have been widely used for analysis in economic sectors for decades. In recent years, experts in the field of energy and/or spatial data have made concerted efforts to advance the field and develop meaningful datasets and analysis to support research on energy transition, renewable energy, energy access, and flows of energy products. This has been driven forward in part by the increasing availability of satellite imagery, increased computing power, access to machine learning and AI, and open data projects. Initiatives to map global electricity transmission systems has enabled insights and analysis of infrastructure in areas of the world with large data gaps. Efforts to assess Levelized Cost of Energy (LCoE) using multiple layers such as population, and existing power infrastructure have also been developed to support modelling of energy transition pathways and further electrification expansion. Satellite imagery and machine learning has also been applied to map the exponential application of solar and wind energy, and support resource viability of site locations for future renewable projects, while other applications of these tools have been used to track coal projects and calculate coal-fired power plants emission outputs. With growing availability of open-source spatial data, the transformative research and analysis will expand further, enabling the Asia-Pacific region to better capitalize on the richness of its geographic diversity and resources, and build increasingly sustainable and resilient energy systems.

ESCAP secretariat has been mandated to conduct analytical studies on key energy trends and emerging issues in the Asia and Pacific region and compile and disseminate relevant energy information and data, including through the Asia Pacific Energy Portal (asiapacificenergy.org). As part of larger efforts to implement this mandate, the secretariat is assisting member States gain greater 'situational awareness' of their current energy systems (i.e. infrastructure, efficiency, capability, future resilience, and risks) by advancing the use of spatial data and analysis in the energy field. The secretariat will also link this work to ongoing efforts to examine the current status and future trends of regional power systems connectivity of the Asia-Pacific region.

**Objectives of the EWG-SDG7:**

The meeting will bring together experts from member States and representatives of global research centers to share best practices and experiences in developing, managing, and working with energy spatial data, and opportunities for its use in energy policy and planning.

The expert group meeting will provide the secretariat with further direction towards the use of geographically tied data and visualization techniques in the Asia-Pacific Energy Portal, the largest Asia-Pacific energy knowledge platform for up-to-date energy statistics, policy documents and infrastructure being developed by ESCAP.

The meeting will be organized in two sessions. Session 1 will center around understanding energy systems with spatial data and analysis. World's leading experts in the field will provide overviews of their experiences in using spatial data to analyze energy systems. At the Session 2 the secretariat will seek inputs into its work program from the meeting participants. It will be a discussion among the invited experts and member States representatives to elaborate on the following questions:

- What are the major gaps in data and policy information reaching policymakers, that energy spatial could address? What information is needed to make informed decisions for sustainable energy development?
- What spatial products, tools, or technologies are available to your country, and how do they support energy planning?
- What are the challenges and gaps being faced in the Asia-Pacific region around georeferenced data collection and validation?
- What would you like to see be prioritized or considered as opportunities for visualization of georeferenced energy data? What kind of spatial data would be beneficial to be visualized on the Asia Pacific Energy Portal?
- What are opportunities for increased partnership or cooperation?

**Expected Outcomes of the Meeting:**

Member States from the Asia-Pacific region will be better positioned to utilize geospatial data and analysis for energy policy and planning. The secretariat will have a better understanding of the specific needs of Asia-Pacific countries in relation to spatial data to analyze energy systems. The insights gathered at the meeting will support the development of geovisual analysis of new forms of energy potential and illuminate energy transition paths for individual member States and regional partners. It will also highlight opportunities for increased partnership and cooperation for energy spatial data.

**Organization of the Expert Working Group Meeting:**

The meeting of the Expert Working Group will be organized in two sessions on **27 April 2022**, from **10:00 to 12:00 hrs. (session 1) and from 14:00 to 16:00 hrs (session 2) (GMT+7)**.

Microsoft Teams will be used as the e-Conference platform. Meeting language is English and no interpretation services will be available. For participation, please register via this link: https://forms.office.com/r/18RSLDipKQ

For further information, please contact Mr. Sergey Tulinov, Energy Division at tulinov@un.org

**Draft Agenda**

| **Time (GMT+7)** | **Agenda item** |
|---|---|
| 10:00 - 10:15 | Opening remarks:<br>• H.E. Ms. Raushan Yesbulatova, Ambassador and Permanent Representative of the Republic of Kazakhstan to UN ESCAP Vice-Chair of the Committee on Energy<br>• Mr. Hongpeng Liu, Director, Energy Division, UN ESCAP |
| 10:15 - 10:20 | Introduction to the meeting by secretariat |
| 10:20 - 11:40 | Session 1: Understanding Energy Systems with Spatial Data and Analysis<br>1. Energy Access Explorer by Dimitris Mentis, Lead, Energy Access Explorer, WRI<br>2. Clean Cooking Explorer by Alicia Oberholzer, Clean Cooking Alliance<br>3. Global Electrification Platform and RE-Zoning by Benjamin Stewart, World Bank<br>4. RE Data Explorer by Galen Maclaurin, Technical Lead, NREL |
| 11:40 – 12:00 | Guiding questions for discussion in Session 1:<br>• What information is needed to make informed decisions for sustainable energy development? What data currently exists? What data is missing?<br>• What are some strategies you have put in place to ensure the long-term sustainability, accuracy, and availability of up-to-date spatial data?<br>• What supporting data sets do you see as valuable to be visualized or analyzed along with energy data?<br>• What opportunities for increased cooperation and partnership exist? Or should exist? |
| 14:00 - 14:10 | Recap of Session 1 and introduction of Session 2 by secretariat |
| 14:10 - 15:10 | Session 2: Spatial data in the Asia-Pacific region and application to energy policy and planning<br>1. Overview of ESCAP work on geospatial data and applications by Hamid Mehmood, Chul Min Lee SAS/IDD<br>2. Introduction to the Asia Pacific Energy Portal and Energy Infrastructure Geodatabase by Kira Lamont, Energy Division<br>3. Regional Road Map on Power System Connectivity: Relevant strategies and projects by Matthew Wittenstein, Energy Division<br>4. Advancing dialogue on energy futures by exploring how we understand them through visual interfaces by Nicholas Hedley, Director, Spatial Interface Research Laboratory, Simon Fraser University |
| 15:10 – 15:30 | Interventions from participants |
| 15:30 - 15:50 | Discussion |
| 15:50 - 16:00 | Wrap up and closing |