



## **Regional Conference on Energy Resilience through Decentralized Power Plants and Smart Grid Integration**

15 September 2022

Queen Sirikit National Convention Center, Bangkok, Thailand (Hybrid event)

*[In conjunction with ASEAN Sustainable Energy Week 2022 (ASEW),*

*14-16 September 2022 in Bangkok, Thailand]*

*Jointly Organized by*

Thailand Institute of Scientific and Technological Research (TISTR)

Ministry of Higher Education, Science, Research and Innovation (MHESI), Thailand

*And*

Asian and Pacific Centre for Transfer of Technology (APCTT) of the

United Nations Economic and Social Commission for Asia and the Pacific (ESCAP)

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### **Background**

Ensuring sustainable energy security and supply while transitioning from fossil fuels to clean energy is a major challenge of climate resilient development. Rapid progress in development and modern lifestyle has led to a substantial increase in energy consumption in household and commercial sectors. For instance, the Asia-Pacific electric vehicle market is expected to grow at a CAGR of 33.1% from 2021 to 2028 to reach \$1,927.04 billion by 2028<sup>1</sup> thus indicating significant increase in demand for electricity in the transportation sector.

Conventionally, large-scale electricity generation has been through centralized power plants run by fossil fuels, and through nuclear or large hydroelectricity plants. The electricity is delivered to the consumers in remote areas through long transmission and distribution lines which is not only capital-intensive but also entails high rate of transmission and distribution losses. On the other hand, decentralized power plants provide promising opportunities for deploying locally available renewable energy sources as well as for expanding access to clean energy services to remote areas. These plants allow optimal use of renewable energy, reduce fossil fuel use, increase eco-efficiency, and reduce transmission and distribution inefficiencies and related economic and environmental costs.<sup>2</sup>

In recent times, integration of decentralized power plants with smart grids are gaining significance due to their intelligent systems, reliability and efficiency. Smart grid systems are

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<sup>1</sup> [https://www.meticulousresearch.com/product/asia-pacific-electric-vehicle-market-](https://www.meticulousresearch.com/product/asia-pacific-electric-vehicle-market-5236#:~:text=The%20Asia%20Pacific%20Electric%20Vehicle,25.9%25%20during%20the%20forecast%20period.)

[5236#:~:text=The%20Asia%20Pacific%20Electric%20Vehicle,25.9%25%20during%20the%20forecast%20period.](https://www.meticulousresearch.com/product/asia-pacific-electric-vehicle-market-5236#:~:text=The%20Asia%20Pacific%20Electric%20Vehicle,25.9%25%20during%20the%20forecast%20period.)

<sup>2</sup> <https://www.unescap.org/sites/default/files/14.%20F5-Decentralized-energy-system.pdf>

considered more resilient to the electricity supply and demand than traditional power grids. Decentralized renewable systems integrated with smart grids encourage environment conservation that aligns with the Bioenergy–Circular–Green (BCG) economy and ensure access to affordable, reliable, sustainable and modern energy for all (SDG7). This Regional Conference will provide a platform to discuss and share experiences, success stories and challenges of decentralized energy generation and smart grid systems being deployed for enhancing the energy resilience among countries in Asia and the Pacific which include ASEAN+6 countries.

### **Objectives**

- Deliberate on enabling policy options and strategies to encourage deployment of decentralized power plants and their integration with smart grid systems
- Share experiences and good practices for achieving energy resilience through decentralized power plants integrated with smart grids
- Identify strategies for cross-border technology cooperation and transfer related to decentralized power plants and smart grids in the Asia-Pacific region, with focus on ASEAN countries

### **Target Audience**

Participants will include policy makers, representatives of international organizations, R&D institutions and private sector representatives involved in electricity regulation, generation and consumption.