

EVENT DAY 3: 14 MARCH 2024 (THURSDAY)

SESSION - 8

**SUPER GRIDS FOR ENERGY TRANSITION AND ENERGY SECURITY -
CROSS BORDER ELECTRICITY TRADE IN SOUTH ASIA AND
INTERCONNECTION OF REGIONAL GRIDS IN ASIA
(SESSION PARTNERS - GO15, USAID and Hitachi Energy)**



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Venue & Time

Venue	Crystal- 2, The Lalit Hotel in New Delhi, India
Time	India 14:00 ~ 16:00

Session Background

In the era of energy transition, various human activities such as transportation, industrial processes and agriculture are being electrified and is estimated to triple the electricity demand in the next 50 years. About 2 billion machines which run on heat will get electrified. Generation and transmission of green electricity from the renewable energy resources require new transmission lines. Bloomberg New Energy Finance (BNEF) estimates that transmission and distribution (T&D) network expansion would require more than US\$ 21 trillion by 2050; and would add 80 million kilometers of new lines – effectively doubling the length of today’s global grid.

The concept of super grids that connects regional grids in a larger geography is seen as the effective solution to meet the growing energy demands, integrate renewable energy, and enhance regional cooperation and energy security. These interconnected grids facilitate cross-border electricity trade, enabling countries with surplus power to export to those with deficits, optimizing resource utilization, and fostering economic and political stability. The recent experiences have shown that the larger the control area, the better it is to mitigate intra-day intermittency of renewable energy resources.

In 2018, Hon’ble Prime Minister of India has envisioned One Sun One World One Grid (OSOWOG) initiative at the First Assembly of the International Solar Alliance. In the same year, ISGF mooted the idea of interconnecting the regional grids in South Asia – the interconnection of SAARC Grid with GCC Grid and ASEAN Grid; and facilitated the interactions and exchange of ideas amongst the key stakeholders from these three regions. Identified Oman -India and India-Myanmar-Thailand interconnection lines. In addition, USAID has been extensively working to promote Cross Border Electricity Trade (CBET) in the South Asia region over last two decades, focusing on an enabling environment for increased connectivity between South Asia region and establishment of region power markets, with the intent of utilizing clean energy resources.

The session aims to bring stakeholders and experts from the sector across the regions to advance actions towards energy transition and enhance energy security. This includes deepening cross-border electricity trade in South Asia and interconnecting the region with the Gulf and ASEAN regions, with the ultimate goal of creating Super Grids.

Discussion Points

1. The impending US\$ 21 trillion T&D expansion by 2050
2. Technologies for smart upgrades of existing T&D networks within existing Right-of-Way (ROW)
3. Technologies to reduce T&D losses to minimize green-electron losses to the extent possible
4. Energy transition and integration - how super/regional grids can facilitate the integration of large-scale renewable energy sources, helping transition to a low-carbon future and meet climate targets
5. Technological innovations necessary for building and managing super/regional grids, including high-voltage transmission technologies and advanced control systems

6. Economic benefits of cross-border electricity trade and the political cooperation needed amongst countries to establish and manage super grids
7. Regulatory frameworks that can support the development of super/regional grids, addressing issues like tariff structures, grid codes and trade agreements
8. Security and reliability measures to ensure the security and reliability of super/regional grids, considering their vulnerability to physical and cyber threats
9. Challenges and barriers in developing super grids, such as financial constraints, technical complexities, and geopolitical issues
10. Need of Regional Technical Intuitions/Forums involving system planning and power system operation entities in developing super/regional grid formation and its coordinated operations
11. Progress on interconnection of GCC-South Asia-ASEAN Grids, and way forward

Chair	SR Narsimhan , CMD, Grid Controller of India
Moderator	Monali Zeya Hazra , USAID
Theme Presentation	<ol style="list-style-type: none"> 1. Bruno Meyer, Secretary General, GO15 2. Akilur Rahman, Hitachi Energy
Speakers	<ol style="list-style-type: none"> 1. Abhay Choudhary*, Chairman, CTU India 2. Prihastya Wiratama, Project Manager of ASEAN Power Interconnection, ASEAN Centre for Energy 3. Talal M. Al-Shaikh, Operational and Control Department, GCCIA (Virtual) 4. Vinod Kumar Agrawal, Senior Advisor, USAID's SAREP 5. Deepak Pandey, General Manager, India and Sub-Saharan Africa, GE Vernova 6. Eddie Widiono, Former President, PT. PLN 7. Edwin Koekkoek, Team Leader - Green Inclusive Development and Social Protection, EU Delegation Bangladesh

Key Takeaways by Moderator

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