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STRENGTHENING TRANSMISSION UTILITIES AND SYSTEM OPERATORS

Enhancing planning and operation capabilities of Transmission Utilities and System Operators to ensure reliable and resilient grid

- Modernization Roadmap for STUs and SLDCs
- Resource and Network Adequacy
- System Inertia Adequacy
- System Resilience Planning
- Cybersecurity
- Asset Monetization

Context

Delegates at Round Table Consultation on Gap Assessment of State Transmission Utilities

As nations across South Asia strive to increase the Renewable Energy (RE) generation and reduce their carbon footprint, an efficient power network becomes crucial for facilitating the transition to sustainable energy and integrating renewable sources into the power grid. In addition, establishing a resilient and technologically advanced transmission network is crucial for withstanding cyberattacks and natural disasters. The United States Agency for International Development (USAID) through the South Asia Regional Energy Partnership (SAREP) program is actively supporting transmission utilities and system operators across various South Asian regions through modernization efforts. This includes gap assessments, roadmap development, evaluation of network strengthening requirements, and development of frameworks to reinforce system inertia. These initiatives aim to enhance grid reliability and facilitate seamless absorption of high levels of renewable energy, and contribute to the development of a forward-looking energy transmission infrastructure.

Ghanshyam Prasad, Chairperson, CEA and SR Narasimhan, CMD, GRID-India at the Workshop on Synchronous Condensers Organized in New Delhi

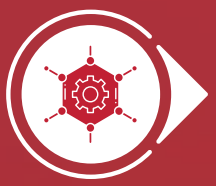
Key Interventions

Gap Assessment and Hand-holding Support to State Transmission Utilities and System Operators

- National-level gap assessment for Transmission Utilities and System Operators in Indian states
- Modernization roadmap, capacity building, and hand-holding support to State Transmission Utilities and System Operators
- Develop and organize a certification program for regional power system operators

Support to Newly Formed Bhutan Power System Operator

- Design of a vision document and implementation roadmap
- Implement automated MIS and technologies to achieve 360-degree visibility



Framework for System Inertia Adequacy

- Estimate the long-term inertia requirements of the Indian power system
- Establish a robust framework for real-time monitoring of system inertia
- Raise awareness and advocate for policies to establish a framework for deploying synchronous condensers

Planning for Resource and Network Adequacy

- Network assessment for renewable integration and reliability for Karnataka Power Transmission Corp. Ltd.
- Transmission network adequacy studies for Haryana Vidyut Prasaran Nigam Ltd.
- Frameworks, regulations, and system studies on resource adequacy for Tamil Nadu and Karnataka State Electricity Regulatory Commissions

Building Resilient and Cybersecure Power System

- Vulnerability assessment, system studies and roadmap for resilience planning
- Comprehensive cybersecurity preparedness assessment, and capacity building
- Developing cyber-crisis management plans and support and establishing cybersecurity operation centre

Unlocking Capital through Asset Monetization

- Evaluation of state transmission utilities' assets for monetization
- Support in creation of special purpose vehicles and transfer of assets

Key Achievements

A pioneer workshop on the deployment of Synchronous Condensers (Syncons) in India

Released national-level gap assessment report for transmission utilities and system operators of Indian states

Developed Cybersecurity Posture Assessment Tool (CPAT)

Partners

Central Sector (India)

- Ministry of Power (MoP)
- Central Electricity Authority (CEA)
- Grid Controller of India Limited (GRID-India)
- National Power Training Institute (NPTI)

State Sector (India)

- Assam Electricity Grid Corporation Ltd (AEGCL)
- Haryana Vidyut Prasaran Nigam Limited (HVPNL)
- Karnataka Electricity Regulatory Commission (KERC)
- Karnataka Power Transmission Corporation Limited (KPTCL)
- Madhya Pradesh Power Transmission Corporation Limited (MPPTCL)
- Tamil Nadu Electricity Regulatory Commission (TNERC)

South Asia

- Bhutan Power Corporation Limited (BPC)
- Bhutan Power System Operator (BPSO)
- Nepal Electricity Authority (NEA)
- Power Grid Company of Bangladesh Limited (PGCB)
- Ceylon Electricity Board (CEB), Sri Lanka

About SAREP

The South Asia Regional Energy Partnership (SAREP), a flagship program to advance objectives of the U.S. Government's Clean Asia Enhancing Development and Growth through Energy (Clean EDGE), is a five-year initiative (2021-26) that aims to improve access to affordable, secure, reliable, and sustainable energy across six South Asian countries—Bangladesh, Bhutan, India, Maldives, Nepal, and Sri Lanka—in line with these countries' climate and clean energy priorities.

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