SOUTH ASIA SUBREGIONAL CONFERENCE

INCLUSIVE CLEAN ENERGY SOLUTIONS IN BHUTAN AND NEPAL

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Speaker

Pankaj is considered as a thought leader in the power industry in India and South Asia, with more than 40 years of experience across several key positions. His expertise includes power sector reforms, policy, regulations, energy transition, sector efficiency, renewables, energy storage, electric vehicles, smart grid, demand forecasting, generation planning and grid management. He has dealt in all the aspects of the power sector, including the technical, legal, financial and commercial aspects.

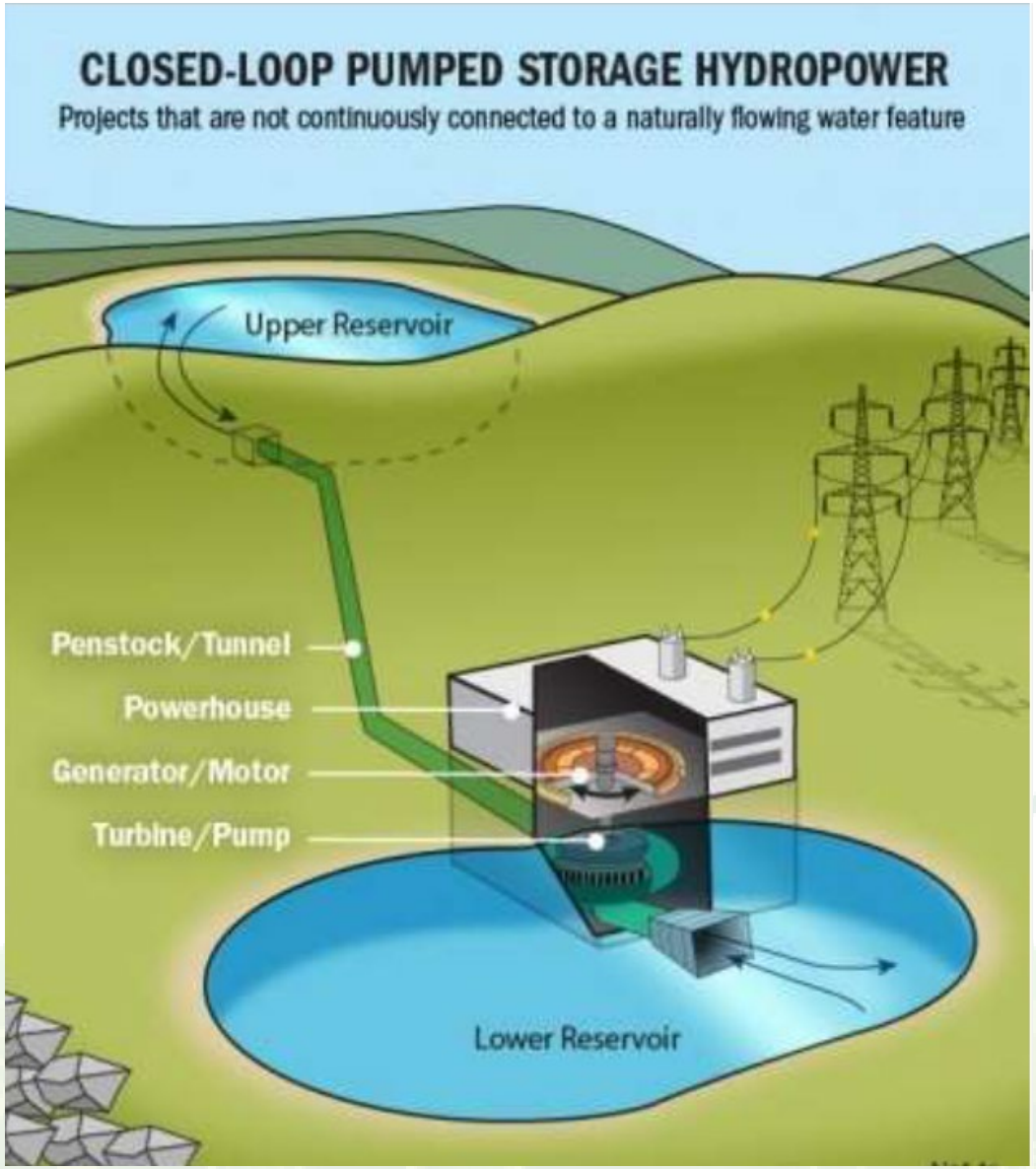
In his current role, he is doing a number of assignments for ADB, USAID and various Foundations as well as is in the Board, including in the Advisory Board, of many forums and companies, both Government and private. He is also part time Senior Advisor, IRADe, a reputed Think Tank in Asia.

Technology Innovation in South Asia: Economic Feasibility and Long-Term Viability

Background

- As a part of NDCs, India has promised :
  - To reduce Emissions Intensity of its GDP by 45 percent by 2030, from 2005 level.
  - To achieve about 50 percent cumulative electric power installed capacity from non-fossil fuel-based energy resources by 2030, with the help of transfer of technology and low-cost international finance including from Green Climate Fund (GCF)
  - To create an additional carbon sink of 2.5 to 3 billion tonnes of CO2 equivalent through additional forest and tree cover by 2030.
- In order to achieve the target of achieving about 50 percent cumulative electric power installed capacity from non-fossil fuel-based energy resources by 2030, a huge capacity of renewable generating capacity, mainly wind and solar capacity needs to be added.
- Solar and Wind generation being intermittent, this causes the grid to be unstable.
- In order to have safe and secure grid operation, a number of steps have been taken by the Government.
  - Closed loop pumped storage has been promoted by the Government.
  - Real time power market has been started by the Indian Electricity Regulator.
  - Installation of Smart meters for Demand Response and Ancillary Services

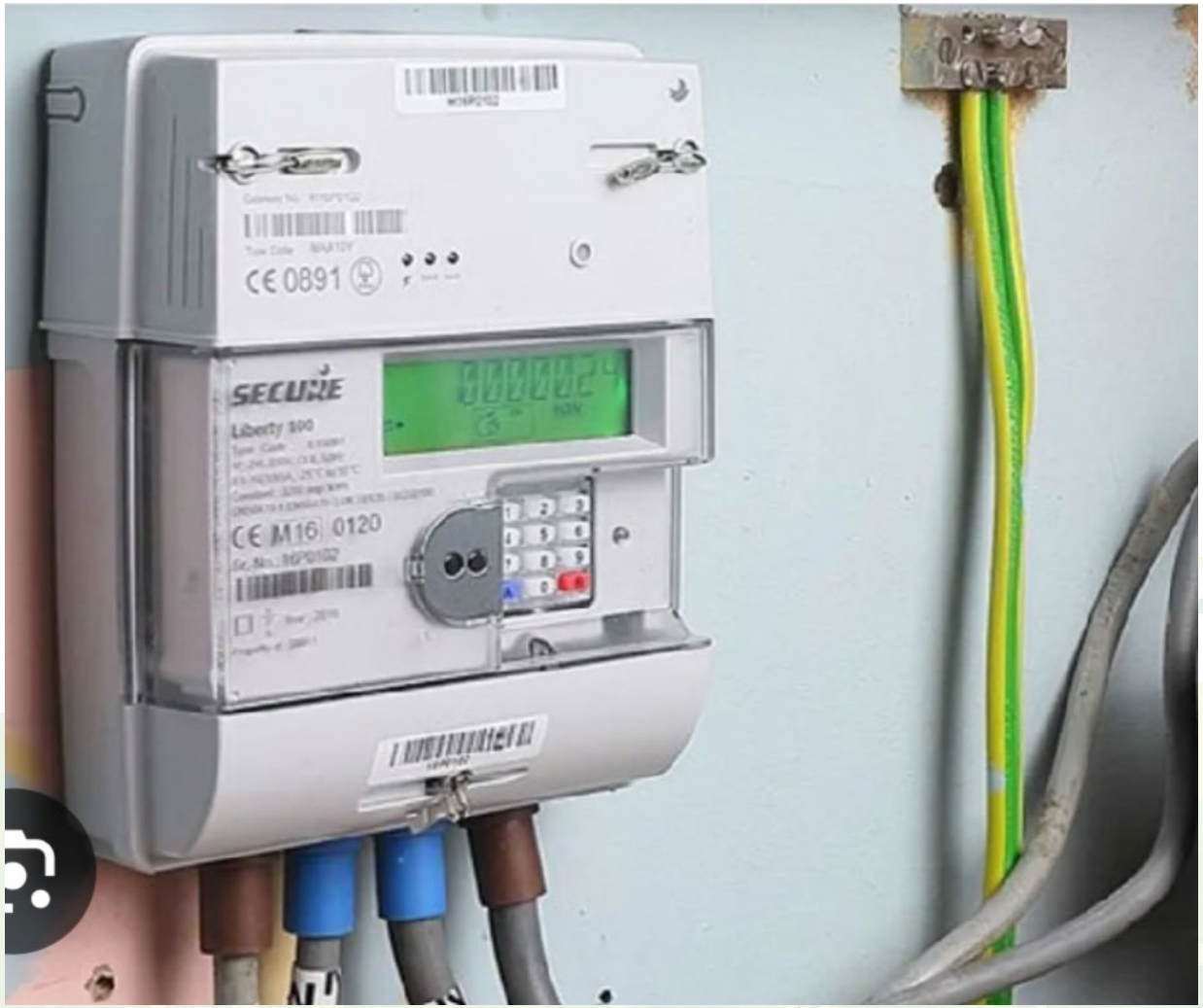
Closed Loop Pumped Storage



Real-time Power Market

RTM Auction Start Time	RTM Auction End Time	RTM Clearing Interval	Communication of Schedule to NLDC/RLDCs / SLDCs	Final Schedule Preparation	Preparation time for despatch	Delivery Period (Delivery on the Same Day, MCP and MCV will be discovered for each 15-minute block)
22:45 Hrs (of the previous day)	23:00 Hrs (of the previous day)	23:00 Hrs –23:15 Hrs (of the previous day)	23:15 Hrs – 23:30 Hrs(of the previous day)	23:30 Hrs – 23:45 Hrs	23:45 Hrs – 24:00 Hrs	00:00:00 - 00:30:00 –
23:15 Hrs (of the previous day)	23:30 Hrs (of the previous day)	23:30 Hrs - 23:45 Hrs of the previous day	23:45 Hrs – 00:00 Hrs (of the previous day)	00:00 Hrs – 00:15 Hrs	00:15 Hrs – 00:30 Hrs	00:30:00 – 01:00:00

Smart meter for Demand Response



Other Schemes by the Government of India –PLI Scheme

- The **PLI (Production Linked Incentive) scheme** for **high efficiency solar PV modules in India** aims to boost domestic manufacturing and reduce reliance on imports. The scheme has a financial outlay of ₹24,000 crore and aims to achieve gigawatt-scale manufacturing capacity in India. The Government of India has approved a total of 764 applications under the PLI schemes across 14 sectors.
- National Programme on **Advanced Chemistry Cell (ACC) Battery storage** was approved by the Union Cabinet on 12.05.2021 with budgetary outlay of Rupee 18,100 crores. This scheme will strengthen the ecosystem for Electric Mobility and Battery Storage in the country. The scheme envisages to enhance India's manufacturing capabilities of Advanced Chemistry Cell (ACC) by setting up of Giga scale ACC and battery manufacturing facilities in India with emphasis on maximum domestic value addition. A total of four companies have been selected.

Other Schemes by the Government of India –PLI Scheme

- In ReNew's Jaipur Solar Manufacturing Plant, **Gender Equality** is an integral part of sustainable development. A crucial part of the Jaipur plant's sustainability initiatives is its Centre of Excellence which has a special focus on the encouragement of women in STEM (Science, Technology, Engineering, and Mathematics), and boasts a 26% diversity ratio (including apprentices, 2023). The plant also powers a school 30 KM away, fostering future generations through clean energy.
- ReNew ensures **women's safety & sanitation** at the facility. It also prioritizes health and safety with medical rooms at the plant equipped with doctors, BP machines, weighing scales, ECG devices, PPE Kits, etc.

Thank You