

Host Utilities



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India
SMART UTILITY
Week 2024

Supporting Ministries



Session 9: Long Duration Energy Storage Systems (LDES)

Moderator Remarks

Presented By

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1. **LDES technology & chemistry:** Technological variants for LDES technologies - pumped hydro storage (PHS), flow batteries, compressed air energy storage, thermal storage, pumped thermal energy storage (PTES), gravity storage and other emerging chemical storage solutions
2. **Applications:** LDES integration with renewable energy systems to enhance grid stability and reliability, reduce curtailment, and support higher penetration of renewables
3. **Business models:** Economic and market factors impacting LDES such as cost, market potential, and financial incentives necessary to encourage adoption and investment
4. **Policy and regulation:** Policy and regulatory frameworks that can promote the development and deployment of LDES, such as subsidies, tax incentives, and mandates
5. **Case studies and best practices:** share successful examples and lessons learned from regions where LDES has been implemented effectively
6. **Challenges and barriers:** identify the key challenges and barriers in deploying LDES, such as technological limitations, environmental impacts, and grid integration complexities

- What is the role of LDES in meeting the grid balancing, grid management and overall grid reliability when the utility realizes the 60 percent renewable goal & the 100 percent zero-carbon grid of 2045?
 - Evaluate different scenarios for the deployment LDES
 - Develop a clear understanding of the role of LDES optimal durations and locations to support a variety of applications
- What is a reasonable cost target for long-duration energy storage to be competitive in different applications?
- How to inform the development of policy to enable the deployment of LDES in the state and provide information to manufacturers and the investment community that is necessary to build the market

THANK YOU

*For discussions/suggestions/queries email: **isuw@isuw.in***
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