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India Smart Grid Forum

India SMART UTILITY Week 2024

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CENTRAL ELECTRICITY AUTHORITY

Session : Climate Resilience of Future Grids

Stakeholders' Responsibility

Presented By

U N Behera, IAS (Retd.), Former Chairperson, OERC

INTRODUCTION

- Climate Change Management
  - Mitigative Measures – Global Issues
    - Reduction of Green House Gases
  - Adaptive Measures – National Issues, Local Issues
    - These measures have to be taken for survival/ sustenance
    - Each country/ organisation/ society (rich or poor) needs to act
  - All these measures involve cost
  - Mitigation measures have a choice between Development and Environment,
  - Aadaptive measures do not have any choice.

CONTEXT

- Electricity Grid is a critical infrastructure that needs to be robust and resilient.
- It is the total value chain from generation point to the consumer point.
- Global warming is increasing the cooling load, particularly for countries like India – More pressure on the Grid
- Other effects of global warming – heatwaves, wildfires, erratic rainfall, flooding, cyclones, rising sea water level have disastrous effect
- increasing frequency of extreme weather events dominant cause of large scale outage

RELEVANCE

- Recovery is the ability to restore the system's function early.
- A more resilient electricity system with a well-coordinated contingency plan for communications, temporary assets and workforce will recover faster from the interruptions caused by climate impacts.
- For every dollar invested in climate-resilient infrastructure, six dollars can be saved – IEA Study
- If the actions needed for resilience are delayed by ten years, the cost will almost double – World Bank Study

STAKEHOLDERS

- System operators and Regulators to assess the situation constantly to ensure the adequacy, flexibility and stability services needed for the secure operation of the system.
- System operators to constantly update on new technologies.
- Policy makers to bring in inputs from other authorities and stakeholders into the process.
- Regulators to assign responsibilities for co-ordinated action between the operators of the transmission and distribution systems, including where systems are interconnected.
- Policy makers and regulators to create appropriate incentives for utilities to facilitate timely investment in resilient infrastructure.

RESPONSIBILITY FOR INVESTMENT

- In principle, the licensee has the responsibility in protecting its assets and providing reliable services to its customers.
- But, the benefits of huge capital investment are likely to become tangible only after a few years or even decades. The licensee may not have sufficient motivation.
- The electricity supply interruptions lead to large costs to society.
- Lack of competition – Regulators and the Policy Makers role
- Large Capex increases the tariff
- Political Cost
- Government Support

RECOVERY PLAN

- Policy makers, regulators, and system operators to co-ordinate recovery efforts among diverse actors – weather forecasting agencies, communication agencies, mass media, local administration including panchayatraj institutions, community groups, etc.
- Policy makers, regulators, and system operators to support capacity building for a better response to and faster recovery from climate impacts.

THANK YOU

For discussions/suggestions/queries

email: ***isuw@isuw.in***

unbehera@gmail.com

visit: www.isuw.in