

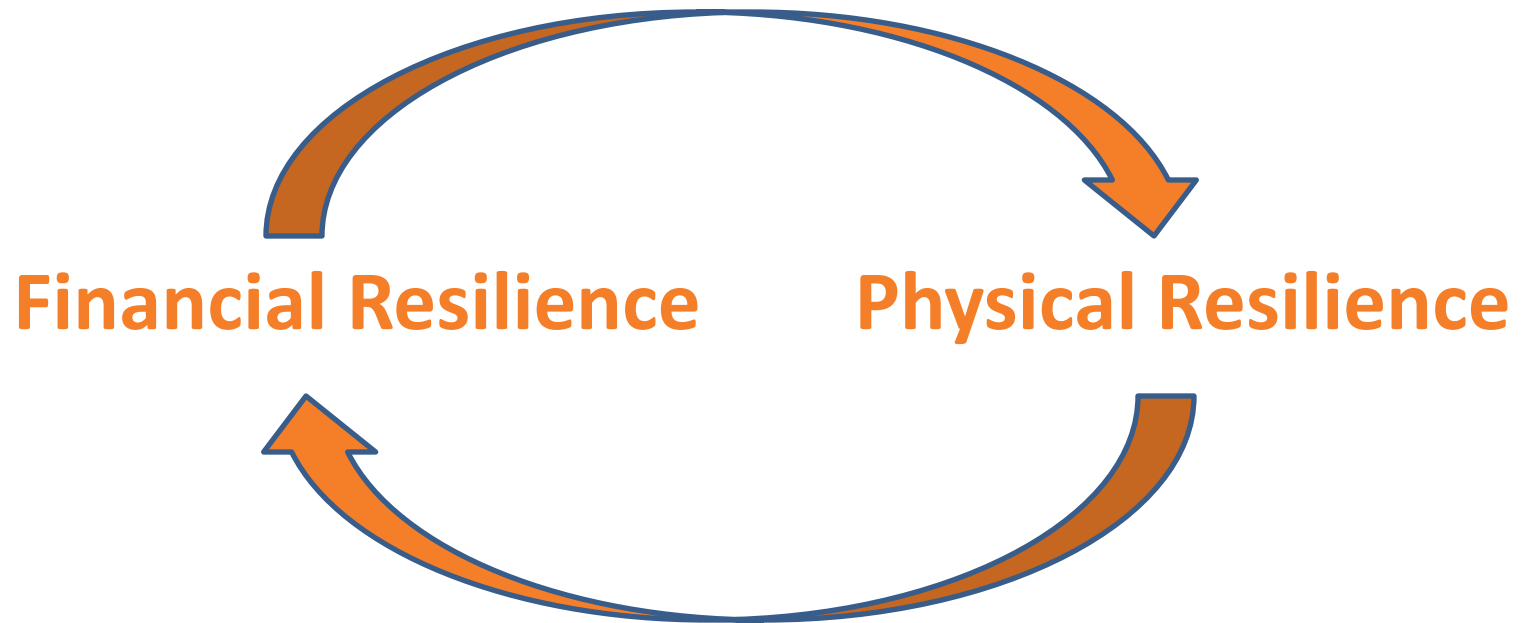
# Creating an enabling environment to enhance climate resilience – financial perspective

Deep Dive Workshop: Enhancing Energy Sector Climate Resilience in Asia, Asia Clean Energy Forum, 5 June 2017

Andrew Jeffries, Asian Development Bank



# What type of financial environment is needed to drive resilience measures and investments?



One doesn't exist without the other

# What type of financial environment is needed to drive resilience measures and investments?

- **Sound Regulatory Environment**

- Full cost-recovery tariff mechanism**

- Enables adequate system maintenance & investment
- A financially viable utility can raise funds easily

# How to expand financial mechanisms to address disaster recovery but also asset preparedness?

- **Disaster Recovery**

- Insurance

- Limited access in storm prone areas even in developed countries

- Self-Insurance in the form of a 'Storm Damage Reserve'

- Via a small surcharge to ratepayers

- Deferrals – 'Regulatory Asset' creation

- Amortizes the recovery costs
  - Also funded by a surcharge to ratepayers

# How to expand financial mechanisms to address disaster recovery but also asset preparedness?

- **Asset Preparedness**
  - Proper Design specifications
  - Proper Equipment specifications / Building codes
  - Adequate Systems - Planning

# Design Specifications

## Examples:

- Substation and other infrastructure cited away from flood-prone areas
- Areas subject to high wind speed events may require altered design
- Raising transformers and other equipment above maximum flood levels
- Ring/‘Mesh’ distribution systems

# Equipment Specifications

## Examples:

- Reinforced narrow based lattice structure transmission towers
- Pre-stressed, spun concrete poles
- Underground cabling at certain critical locations
- Gas Insulated Switchgear (GIS) Substations
- Appropriate load control and switching capabilities to enable faster disaster response and restoration

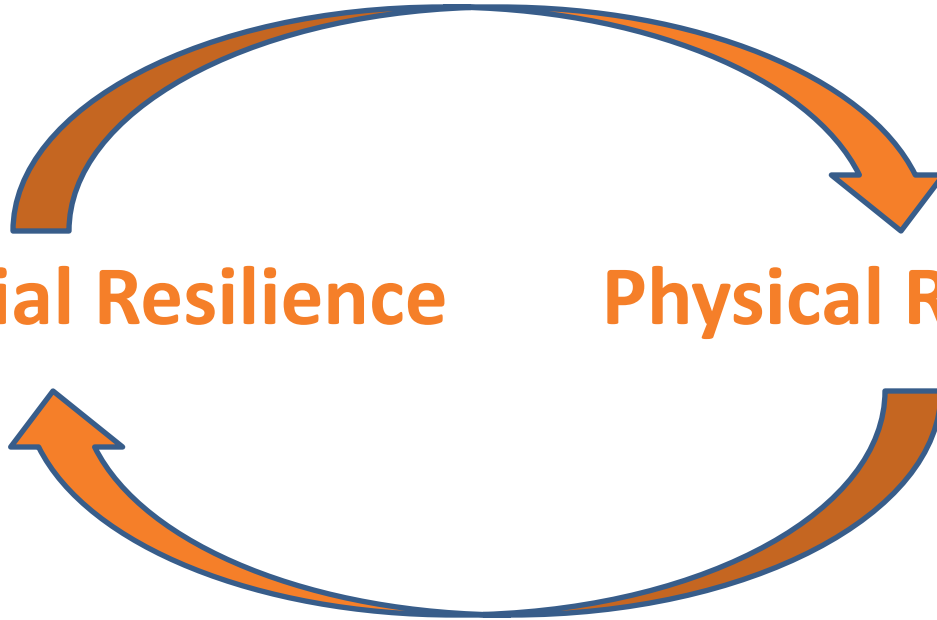
# Systems

- **Mutual Assistance Agreements**
  - Mechanism for outside utility personnel assistance
- **Inventory pooling arrangements**
  - Distribution poles, distribution transformers
- **Data collection for future planning**
  - Storm frequency, damage levels, recovery times



**Financial Resilience**

**Physical Resilience**



**Thank you**

