

# Role of Private Sector in Cross Border Transmission

*Alok Roy,*

*CEO, Reliance Power Transmission Ltd*

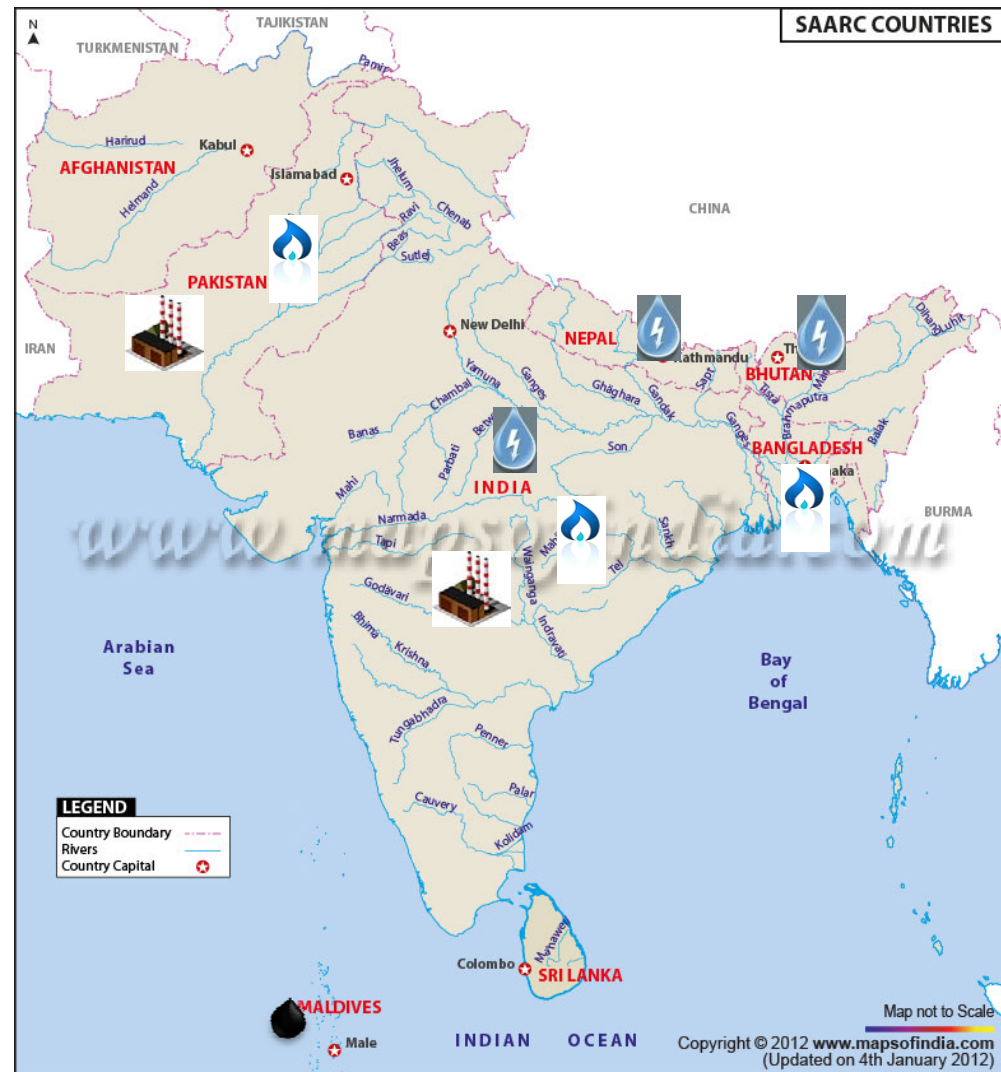
# Wide Variation in Resource Endowment and Consumption

## Variation in Resources

- ❑ India and Pakistan : Natural gas and Coal
- ❑ Bhutan and Nepal: Hydropower potential

## Consumption Pattern

- ❑ Afghanistan dependent on imported energy
- ❑ Maldives dependent on oil
- ❑ Bangladesh reliant on natural gas



## How Balanced are we???

- ❑ 1.6 Bn people in the region
- ❑ All countries in SAARC region are oil importing
- ❑ High T&D losses
- ❑ Facing high power shortages inspite of investing heavily in generation and distribution



# Key Challenges faced by the Region

- ❑ Increasing regional deficits with energy demand to grow at a CAGR of 5%
- ❑ Dominance of single fuel in fuel mix
- ❑ Limited exploitation of renewables
- ❑ Heavy dependence on imports thereby raising generation costs
- ❑ Lack of energy infrastructure
- ❑ Lack of funds to develop capital intensive projects



# Global Thoughts

Inter Continental Power Transmission

# Intercontinental Transmission Highway for Optimization of Global Energy Resources



**LIU Zhenya**

**President  
State Grid Corporation of China**

**Aug. 26, 2012  
Paris, France**



# Global Thoughts – Future Outlook

## With European Super Grid:

Renewable Electricity → UHV Power Grid → European Super Grid → Countries in Europe

## With breakthroughs in energy efficiency, new materials and energy storage:

We can transmit massive renewable power from Central Asia, Mid-east, and North Africa to Europe



**SuperGrid**

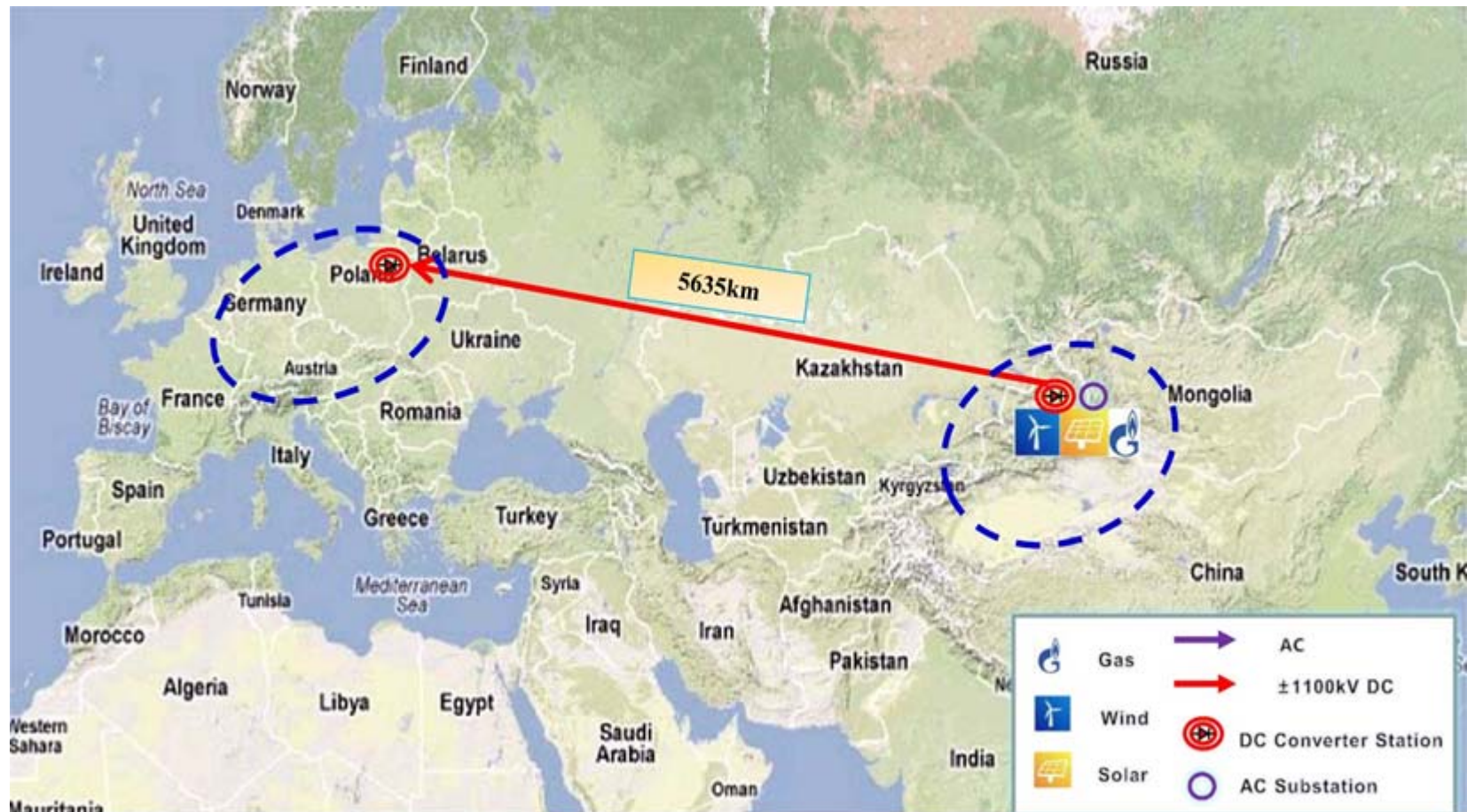
(<http://www.friendsofthesupergrid.eu/>)



**Desertec**

(<http://www.desertec.org>)

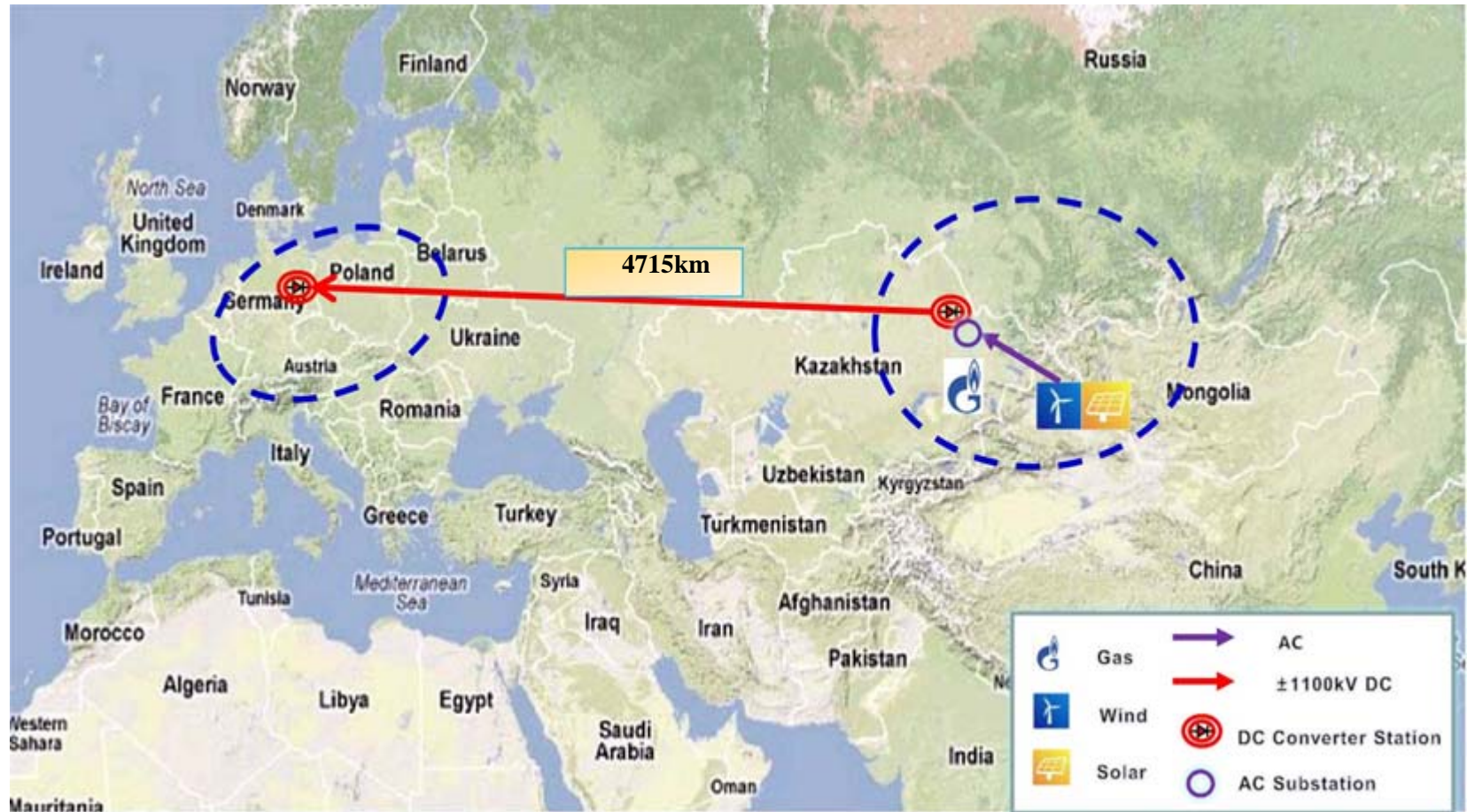
# Global Thoughts – Direct Transmission (Option I)



Source: SGCC presentation at CIGRE 2012



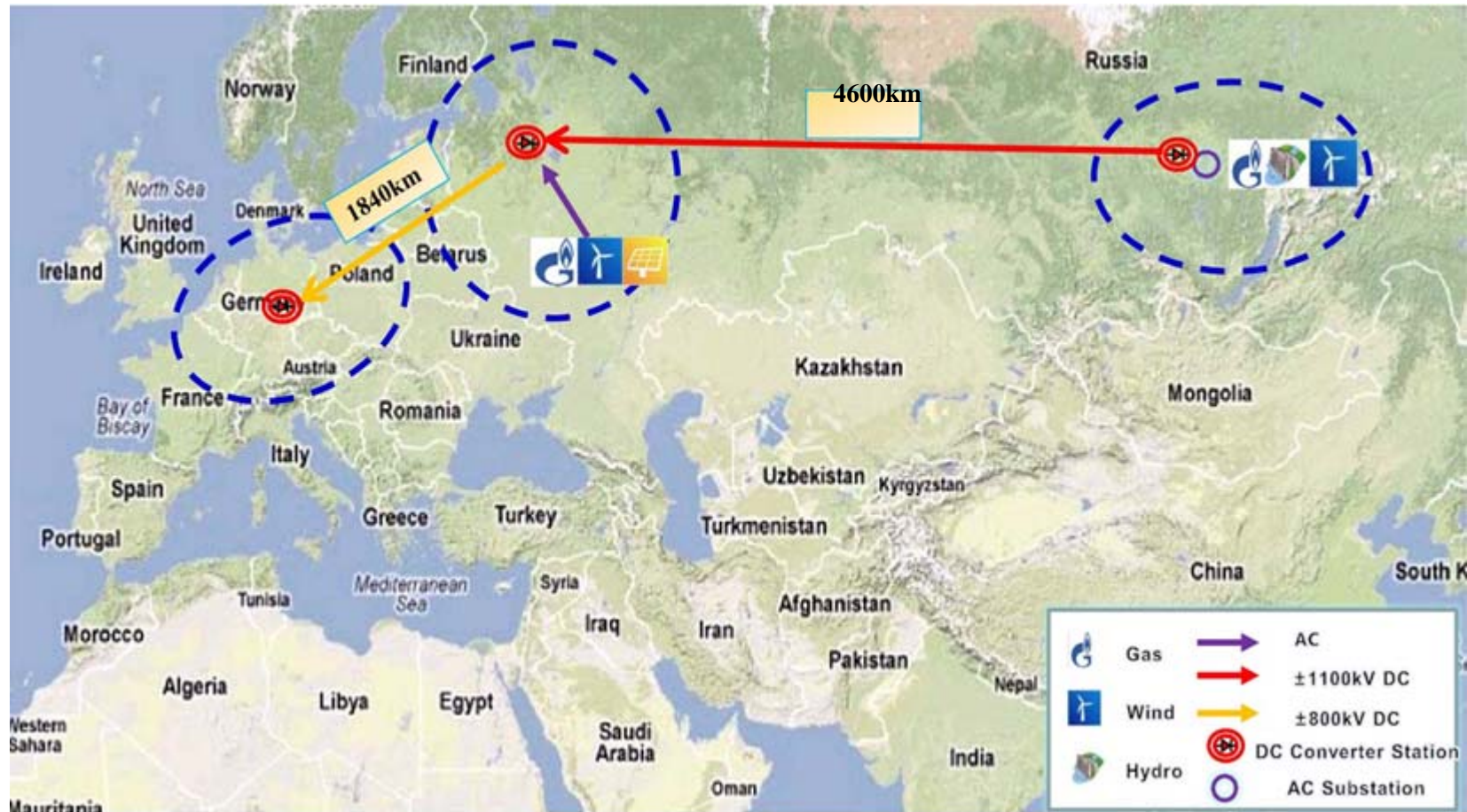
# Global Thoughts – Direct Transmission (Option II)



Source: SGCC presentation at CIGRE 2012

Ekibastuz (Kazakhstan) ~ Berlin

# Global Thoughts – Relay Transmission (Option III)



Source: SGCC presentation at CIGRE 2012

Siberia ~ St. Petersburg ~ Berlin

# Potential for Cross Border Trade

| Importing Countries | Exporting Countries                       |  |  |   |
|---------------------|---|--|--|---|
|                     | India                                     | Bhutan   | Nepal  | Bangladesh  |
| India               | X   | Significant quantity of hydropower can be exported | Significant quantity of hydropower can be exported | Significant amount of gas based power may be possible |
| Bhutan              | Dry Season Support                        | X  | Similarity of resources; resource sharing unlikely | Supply of gas based power in dry season               |
| Nepal               | Thermal power support, dry season support | Similarity of resources; sharing unlikely          | X  | Gas based power support                               |
| Bangladesh          | Sharing of reserves, electricity          | Hydropower support                                 | Hydropower support                                 | X   |



# Why Private Participation??

## Public Funding



## Private Investor



## Benefit



- Core Sector Development
- Limited Capital availability
- Cost Plus Model

- Brings in Competition
- Additional capital source
- Increased efficiency
- Effective resource utilization

- Reduced delivery period
- Improved service Quality
- Reduced Service Charge
- Releases Capital for Social Sector

## PPP Models in Use - Roles

| Model                | Role of Public Partner  | Role of Private Partner  |
|----------------------|---|--|
| <b>Joint Venture</b> | <ul style="list-style-type: none"> <li>▪ Partial Ownership</li> <li>▪ Control over key decisions</li> <li>▪ Handholding for clearances and approvals</li> </ul> | <ul style="list-style-type: none"> <li>▪ Majority Ownership</li> <li>▪ Day to Day management &amp; control</li> <li>▪ Project Implementation</li> <li>▪ Operation &amp; Maintenance</li> <li>▪ No cost or time overrun risk as tariff set under cost plus</li> </ul> |
| <b>IPTC</b>          | <ul style="list-style-type: none"> <li>▪ Project conception</li> <li>▪ Monitoring and Control under statutory role</li> </ul>                                   | <ul style="list-style-type: none"> <li>▪ 100% ownership and complete risk transfer</li> <li>▪ Pre-committed tariff with no upside</li> <li>▪ Incentivised to complete faster and reduce costs (both Capital and O&amp;M)</li> </ul>                                  |



# Key Construction Issues

## Clearances

- Countries have varied clearance requirements
- Environmental clearances procedures different in various countries
- Require more lead time to study

## Right of Way

- Key issue in construction of transmission line
- Practices are different in various countries
- Important to empower the developer constructing lines of national importance

## Construction Standards

- Different codes exist with regards to laying of overhead lines and cables
- Difficult to standardize designs, construction practices for a trans national line

## What is Expected??

Necessary provisions in Electricity Laws and Regulations

Well defined Project Scope

Well developed in terms of laws, regulation

Clearly laid out procedures for obtaining necessary clearances

Assured mechanism of return of investment irrespective of usage

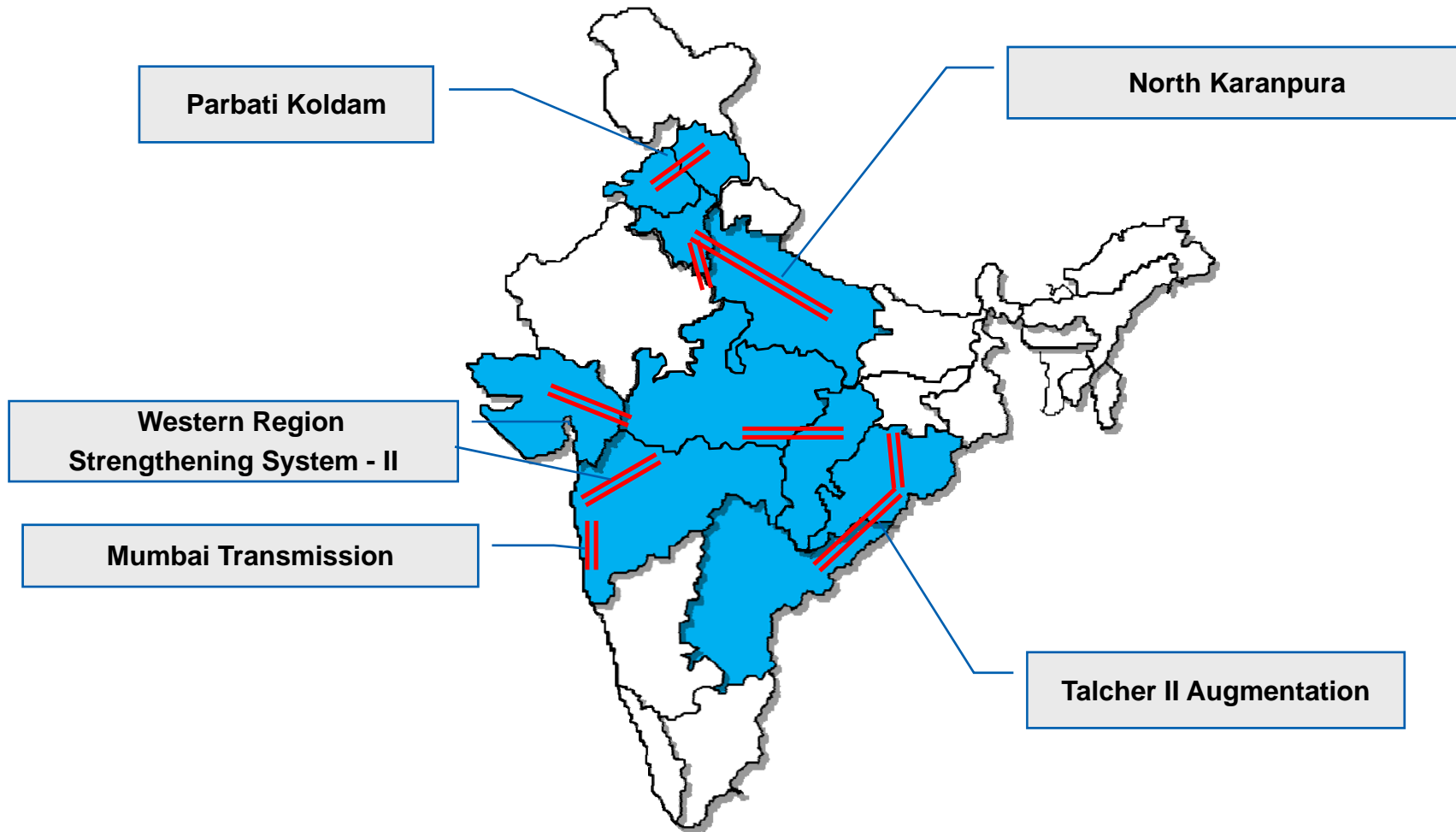
Insulation from all political risks such as forced take over of assets

Mechanisms to deal with changes in time schedule, cost escalations and line realignments

# Recommendations

| Parameter                | Way Forward   | Stakeholders   |
|--------------------------|---|--|
| Technical                | <ul style="list-style-type: none"> <li>• Upgradation of National Grids</li> <li>• Construction of Transmission lines, s/s</li> <li>• R&amp;D</li> </ul>                               | Respective Govt.<br>Private Sector                           |
| Political/<br>Planning   | <ul style="list-style-type: none"> <li>• Decoupling politics and energy</li> <li>• Single unified regulator</li> <li>• Frame agreements</li> <li>• Joint capacity building</li> </ul> | Respective Govt.   |
| Financial/<br>Investment | <ul style="list-style-type: none"> <li>• Conducive investment environment in respective member states</li> <li>• Level playing fields</li> </ul>                                      | Respective Govt.<br>Private Sector<br>Financial Institutions |
| Clearances               | <ul style="list-style-type: none"> <li>• Co-operation on environmental standards</li> <li>• Standardization of clearances procedures</li> </ul>                                       | Respective Govt.   |

# Reliance - Projects Portfolio



**5 Projects**

**10 States**

**\$ 1.5 Bn**

# Our Presence

## Tariff based

**WR System  
Strengthening**

**North Karanpura**

**Talcher-II  
Augmentation**

## Regulated

**Parbati Koldam  
(JV with Powergrid)**

**Mumbai Transmission**





Thank You