



# POWER GRID



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- *Conversion rate of 1US\$= ₹ 55 has been used throughout the presentation, unless otherwise stated.*

## Company Overview

Key Highlights

Investment Programme

New Initiatives

# POWERGRID Today

A NAVRATNA  
ENTERPRISE

CENTRAL  
TRANSMISSION  
UTILITY

LISTED  
COMPANY

Govt  
Shareholding  
69.42%

DIVIDEND  
PAYING SINCE  
1993-94

CONSISTENTLY  
RATED 'EXCELLENT'  
BY Govt

## *Vision*

*World Class, Integrated, Global Transmission Company  
With Dominant Leadership in Emerging Power Markets  
Ensuring Reliability, Safety and Economy*

### Existing Business

- Transmission
- Grid Management
- Consultancy
- Telecom

### New Business Opportunities

- Intra-State Trans.
- Renewable Energy Integration
- Smart Grid/ Smart City
- Acquisition, Asset Mgt & EPC in Intl. Business
- R-APDRP & RGGVY
- Backward Integration
- Energy Efficiency
- Distribution

# POWERGRID Today



**Tr. Lines**  
**95,850 ckm**



**Sub-stations**  
**157**



**X-formation Capacity**  
**144,300 MVA**



FY11-12  
**Availability**  
**99.94%**  
**Reliability 0.59**  
**trippings/ line**



**Inter-Regional**  
**Capacity**  
**28,000 MW**



**Carries**  
**50% of total power**  
**generated in India**



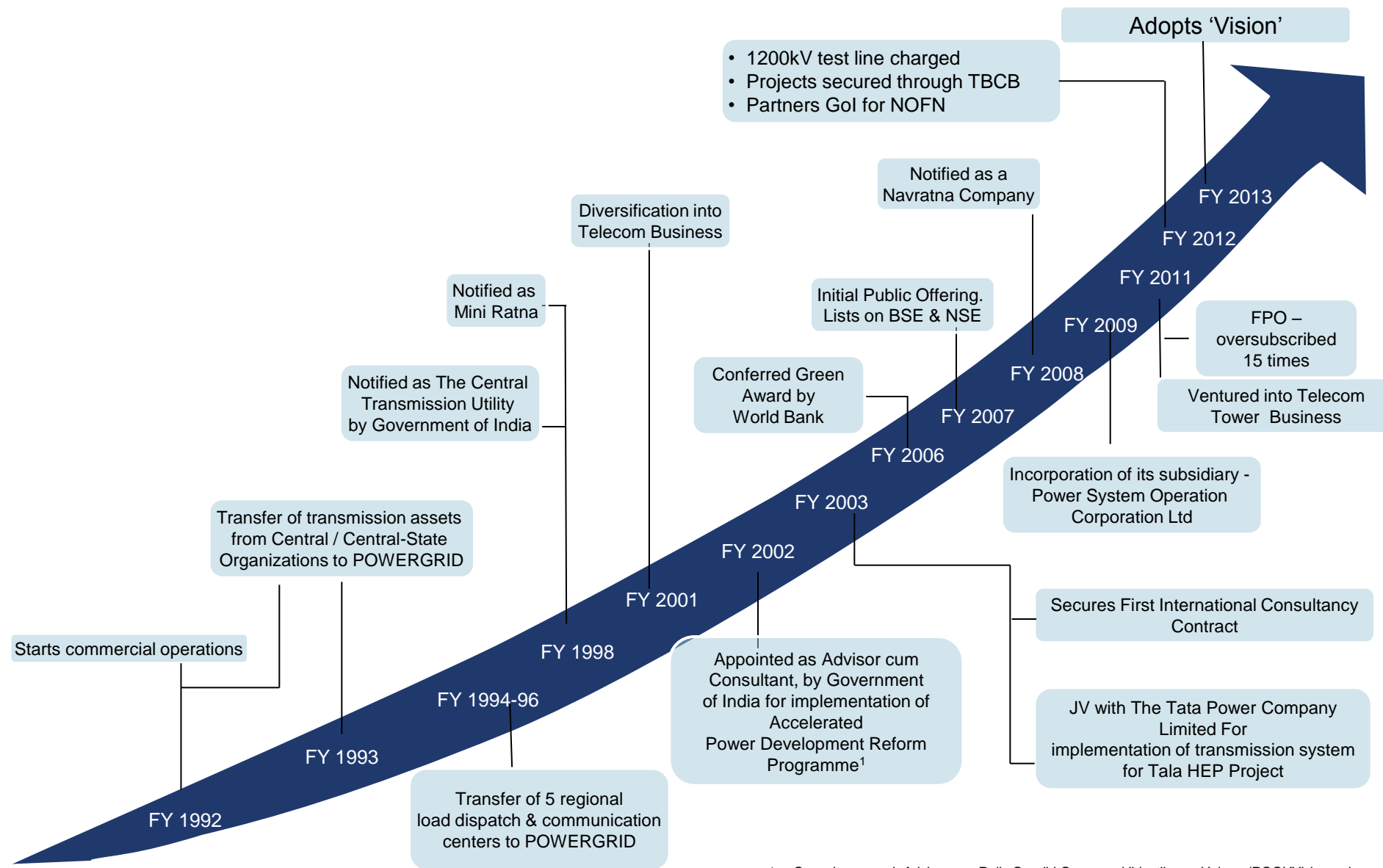
**Telecom Network**  
**25,000 km**



**Innovation**  
**Technology (1200kV<sup>1</sup>)**  
**Market Design**

1- Highest transmission voltage level in the world

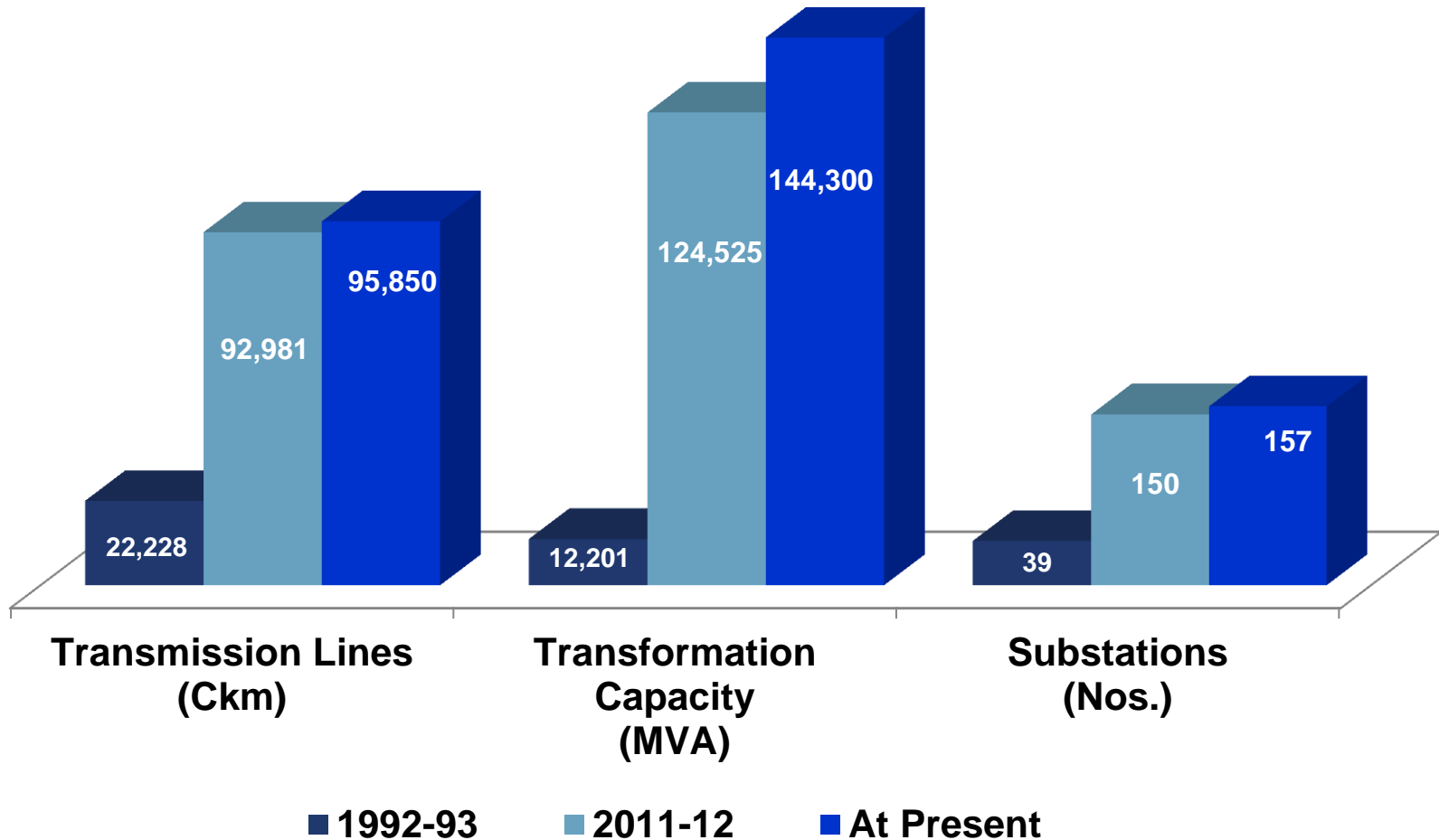
# Long History & Rich Experience in Power Sector in India



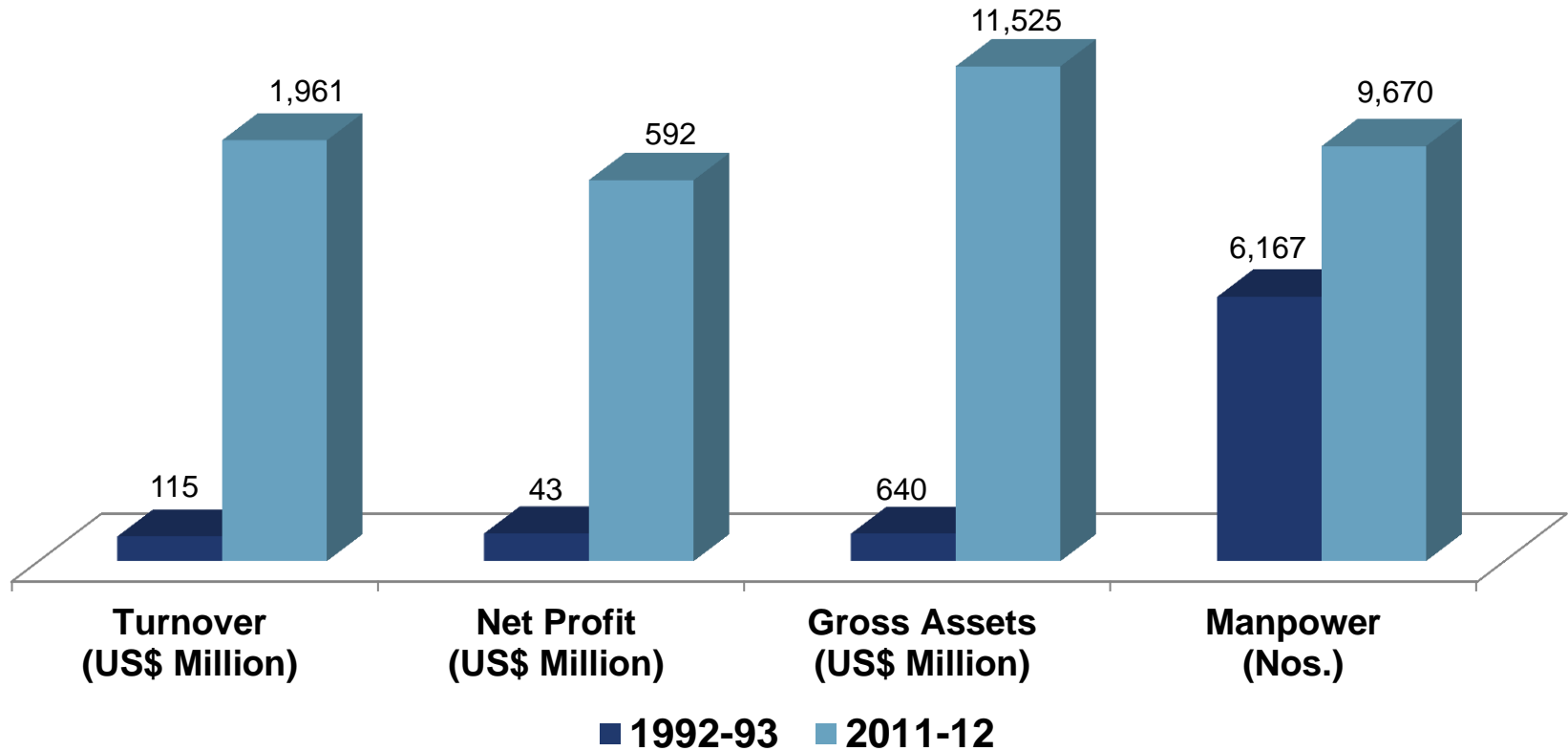
1. Consultancy and Advisory on Rajiv Gandhi Grameen Vidyutikaran Yojana (RGGYY) in rural areas.

# Physical Growth over past two decades

(As on 15.09.2012)



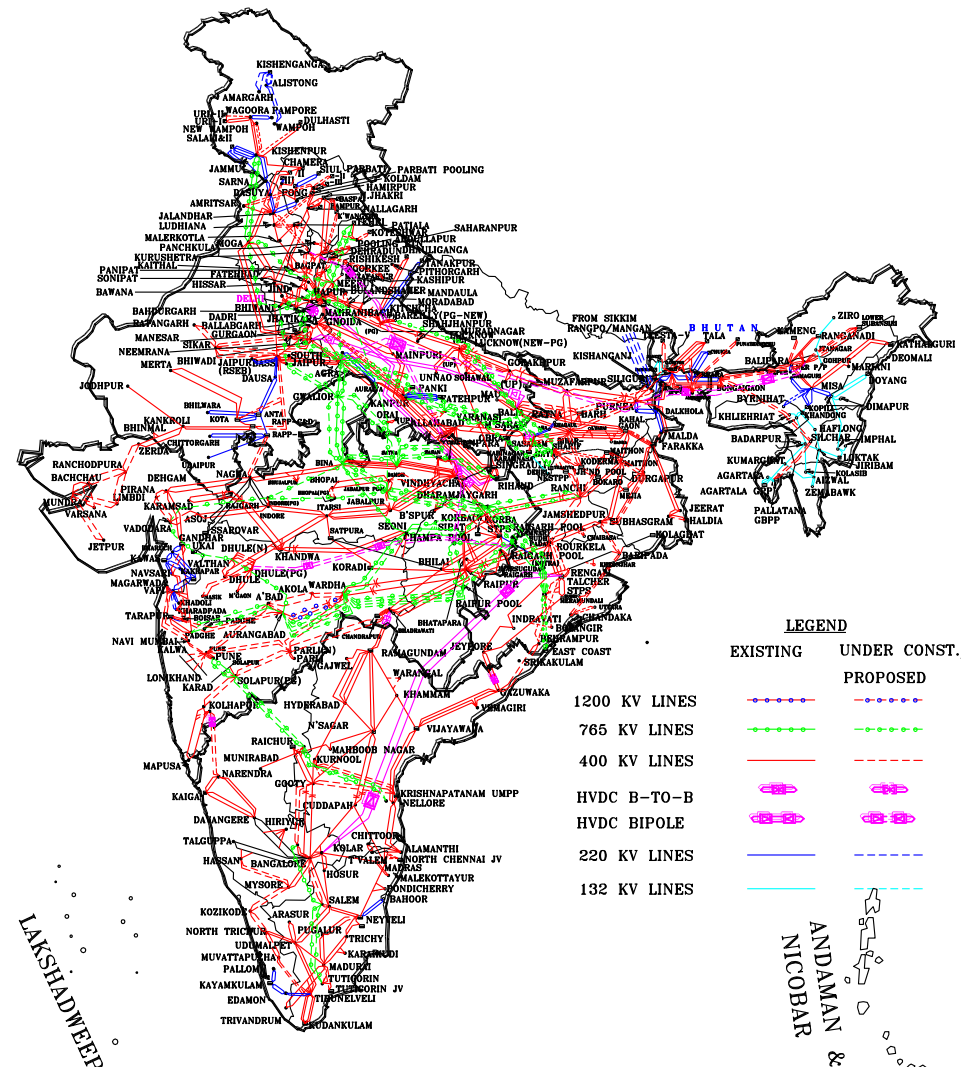
# Financial Growth over past two decades



- Turnover 16x
- Profit 13x
- Asset Growth 17x
- Manpower 0.6x



# POWERGRID Network



The Central Transmission Utility and National/ Regional Grid Operator<sup>1</sup>

1. Through Power System Operation Corporation Limited (POSOCO), a fully owned subsidiary of POWERGRID

Company Overview

**Key Highlights**

Investment Programme

New Initiatives

# Key Highlights

- 1 Established execution track record
- 2 Proven Growth Track Record
- 3 Conservative Capital Structure
- 4 High Operational Efficiency
- 5 Attractive and Visible Growth Prospects in Consulting and Telecom Business

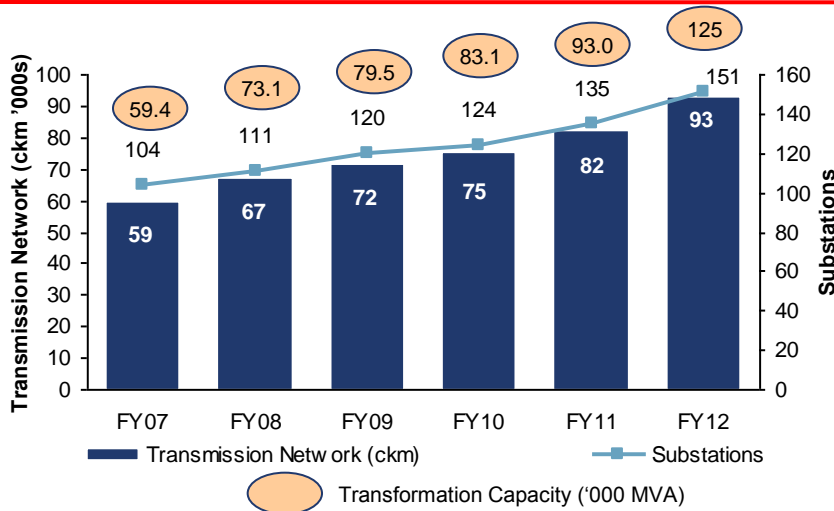
## Execution Track Record

- Consistent successful execution of projects
  - 95,800 ckm of transmission lines carrying ~50% of total power generated in the country
  - 157 substations with transformation capacity of 144,000 MVA
  - 25,000 km of Telecom network

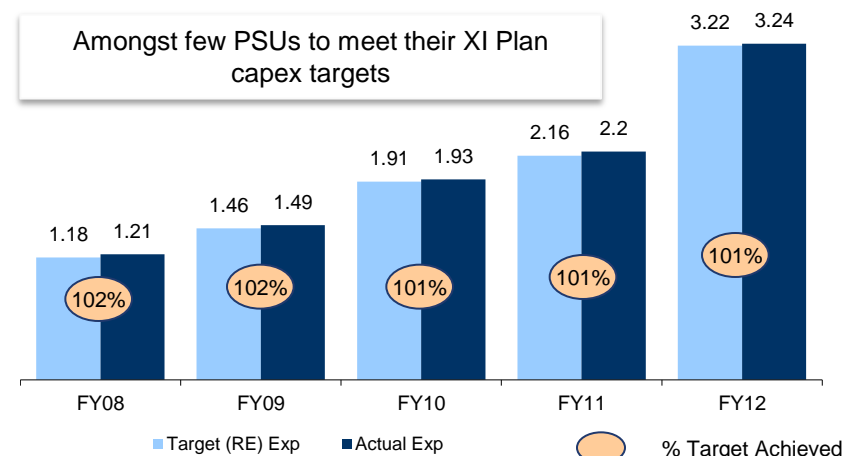
## Accolades and Awards

- Rated consistently "EXCELLENT" against Govt MOUs since FY1994
- Consistent recipient of 'National Awards for Meritorious Performance' instituted by Govt
- Recognized by Platts, as 8<sup>th</sup> Fastest Growing Asian Energy Co. and 18<sup>th</sup> Fastest Growing Global Energy Company during 2010

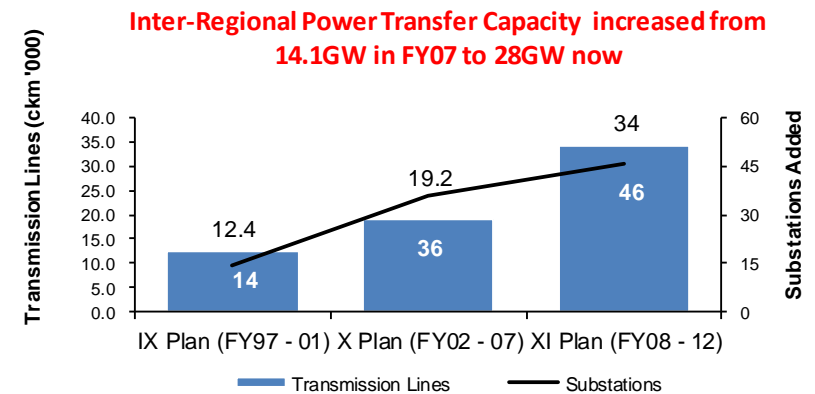
## ...Delivering Transmission Network Growth



## Capex Targets Achieved... (US\$ bn)

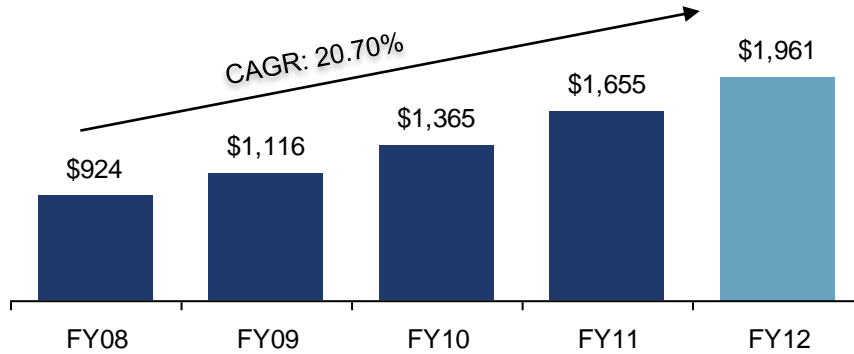


## ... leading to consistent Transmission Network Growth over years



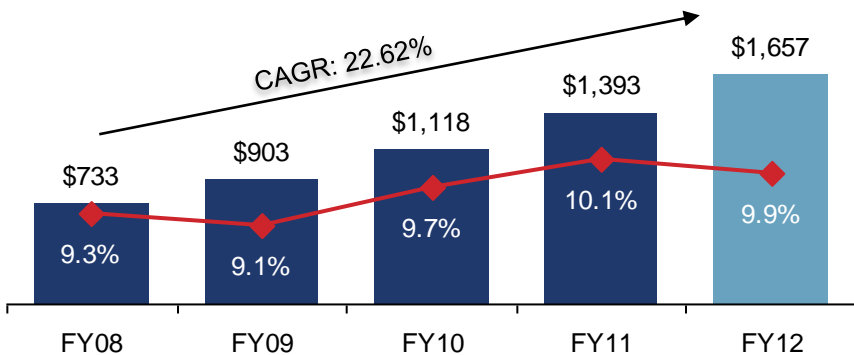
## 2 Proven Growth Track Record

### Revenues (US\$ mn)



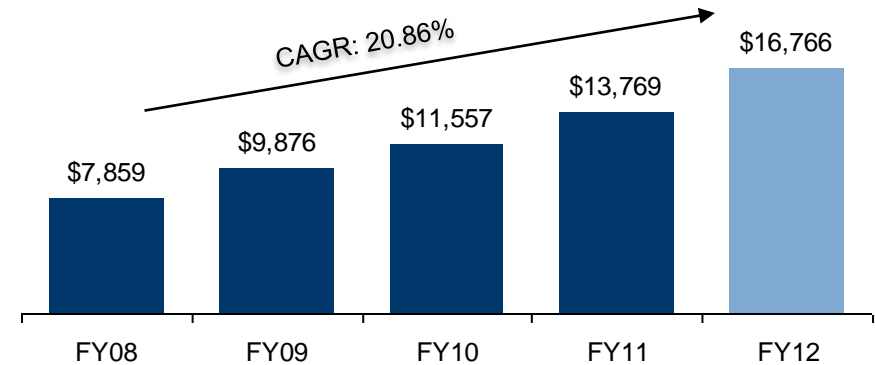
### EBITDA and ROA<sup>2</sup> (US\$ mn)

2 - Due to expansion plans, WIP is not fetching any EBITDA

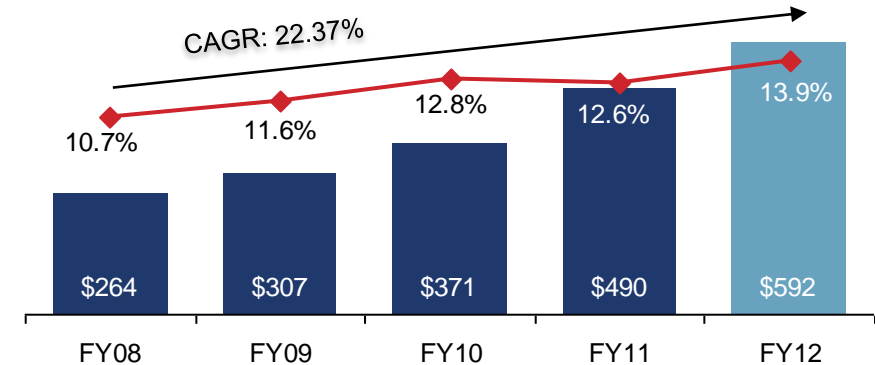


### Total Assets<sup>1</sup> (US\$ mn)

1 - Total Assets = Net Block + WIP + Investments + Current Assets



### Net Income and ROE (US\$ mn)



- Listed on Indian Stock Exchanges, BSE and NSE with oversubscribed public offers in last 5 years - IPO in 2007 and FPO in 2010
- Highest Domestic Credit Rating
- Amongst the biggest beneficiaries of The World Bank & ADB

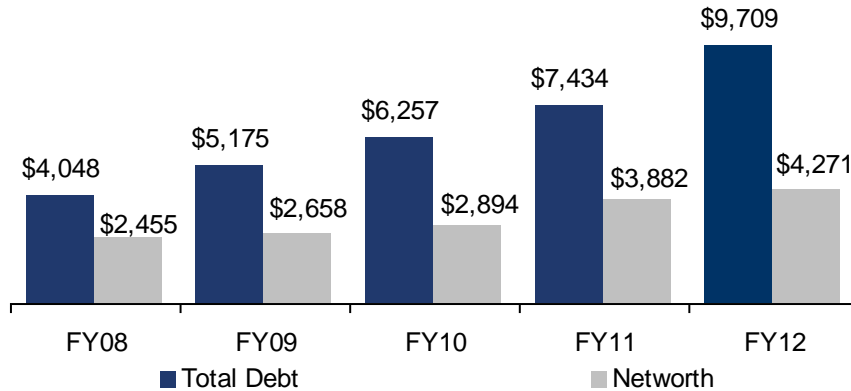
.... has led to confidence of investors & lenders

Note: Exchange rate of INR/US\$: 55 for all fiscal years and items.

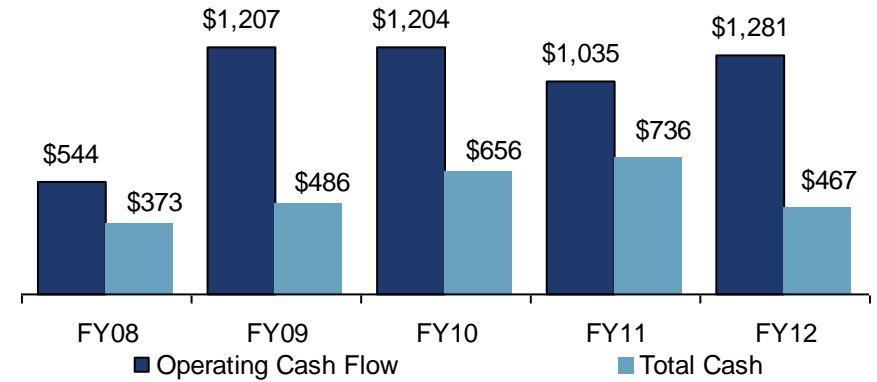
# 3 Conservative Capital Structure



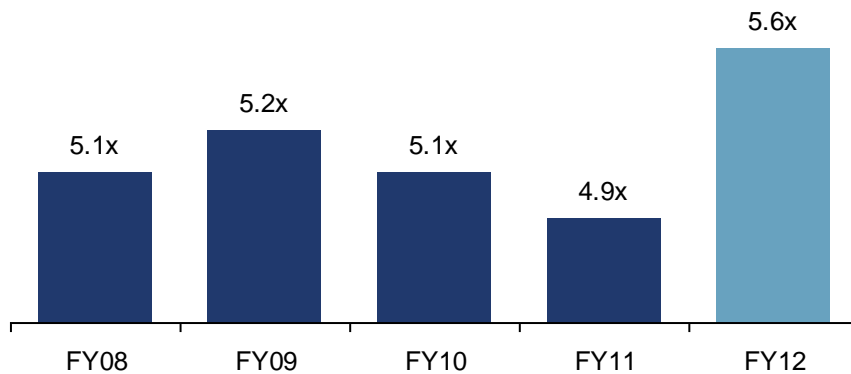
Total Debt and Network (US\$ mn)



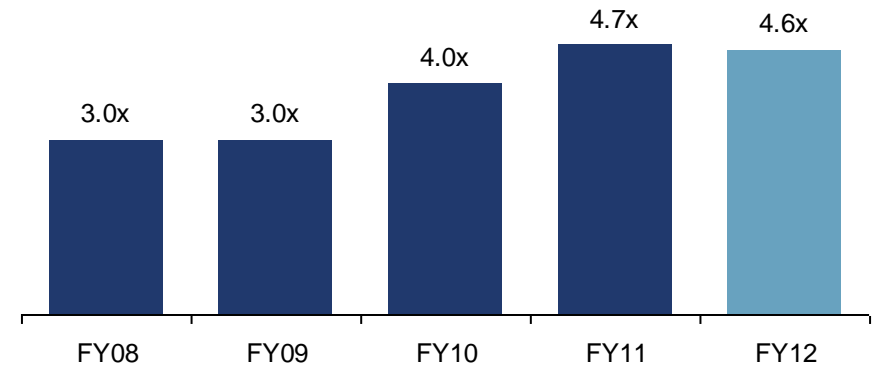
Operating Cash Flow and Total Cash (US\$ mn)



Net Debt / EBITDA



EBITDA / Interest



Note: Exchange rate of INR/US\$: 55 for all fiscal years and items.

## Asset Management

**Lines** 747 Nos.  
95,850 ckm

**Sub-  
Stations** 157 Nos.  
144,300 MVA

**42**

Sub-stations operated remotely including 10 unmanned sub-stations

FY11-12

**Availability** 99.94%  
**Reliability** 0.59 trippings/ line

### NTAMC

- Implementation started
- Maintenance Service Hubs established

## New Initiatives



### **Aerial Patrolling of Transmission Lines**

- 800km stretch being undertaken
- Tender in process for another 15,000 km

### **Developed Repair Capabilities**

- In-House repair facility for Transformer & Reactor established at Hyderabad
- On-Site Repair capability developed

## 5 Growth Potential in Consulting Business



116 Assignments for Projects worth USD 2.32 billion (balance cost) under execution



### ❖ Major Projects

- Jharkhand Sub-transmission
- Smart Grid in Haryana & Chattisgarh
- OPGW network in J&K

### Major Clients include:

- Utilities in States/ UTs
- Central PSUs
- Central Govt. Organizations (Indian Navy, Railways)
- Private Utilities
- Companies in Private Sector



## 5 Growth Potential in Consulting Business

19 Assignments for Projects worth USD 500 mn (balance cost) under execution



### Focus Geographies

- SAARC
- Africa
- Gulf countries

### Focus Businesses

- Consultancy
- Asset Management
- EPC
- JV/ Acquisition

5

# Growth Potential in Telecom Business

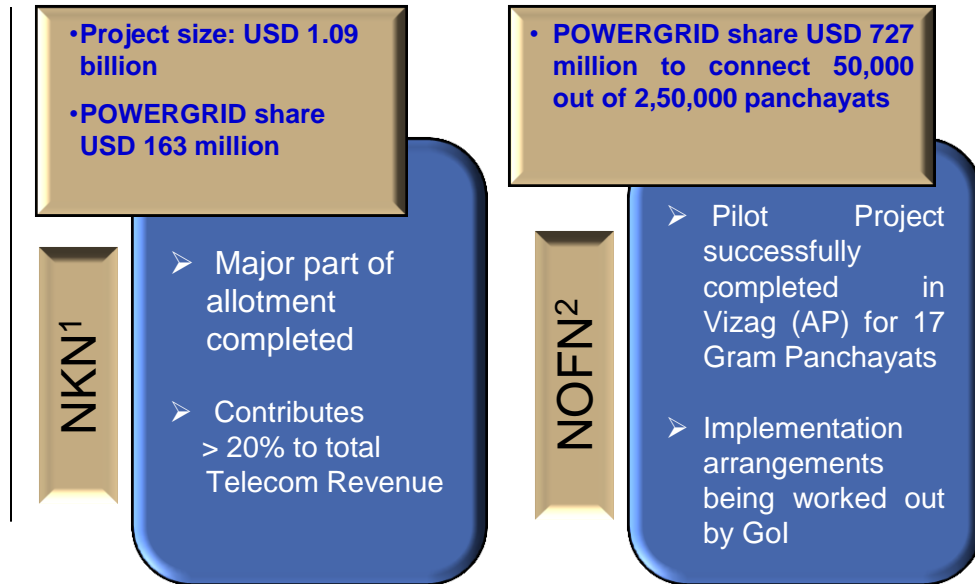
■ **Network Coverage:**

- About 25,000 km

■ **Network Reach:** All India; covering more than 200 cities (including remote Areas of North Eastern Region and Jammu & Kashmir)

■ **Customer base:** Major Telecoms, MNCs, BPOs, Govt, Corporate & Media

■ Backbone availability 99.97%



MPLS

## Multi Protocol Label Switch (MPLS)-Virtual Private Network(VPN)

- Pan India Implementation in progress:
- To enhance customer base
- Shall provide High Speed Communication links for NTAMC<sup>3</sup>/ ERP etc. (covering ~ 400 locations of POWERGRID across India)

1. National Knowledge Network 2. National Optic Fiber Backbone 3. National Transmission Asset Management Center

Company Overview

Key Highlights

**Investment Programme**

New Initiatives

# Power Sector Overview – XII Plan



## Generation

- Peak Demand 198GW
- Capacity Addition 88 GW
- Capacity Addition RE 30 GW



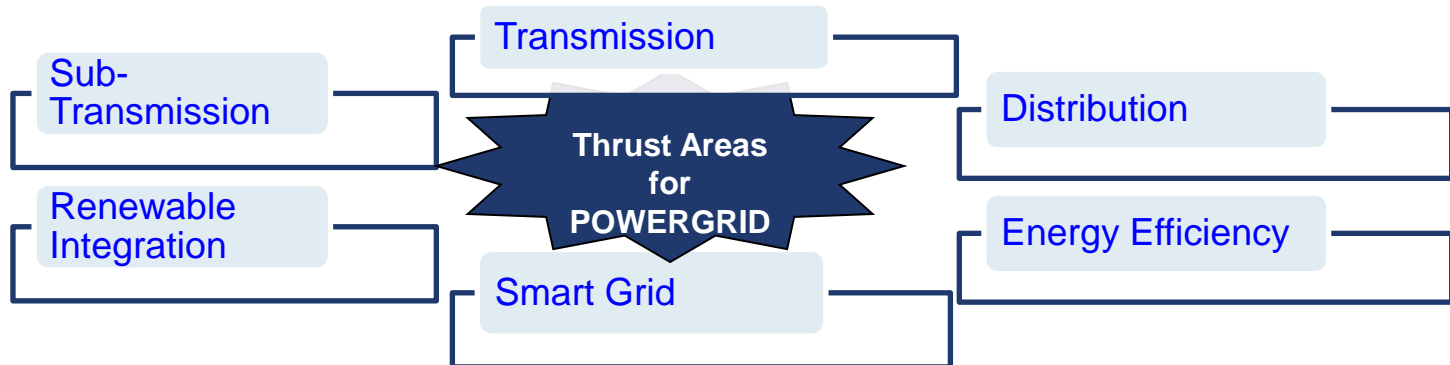
## Transmission

- Fund Reqt. (\$ 32,727 million)
  - inter-State (incl. Pvt) \$22,728 million
  - intra-State \$ 10,000 million
- ckm addition 109,440
- MVA addition 270,000



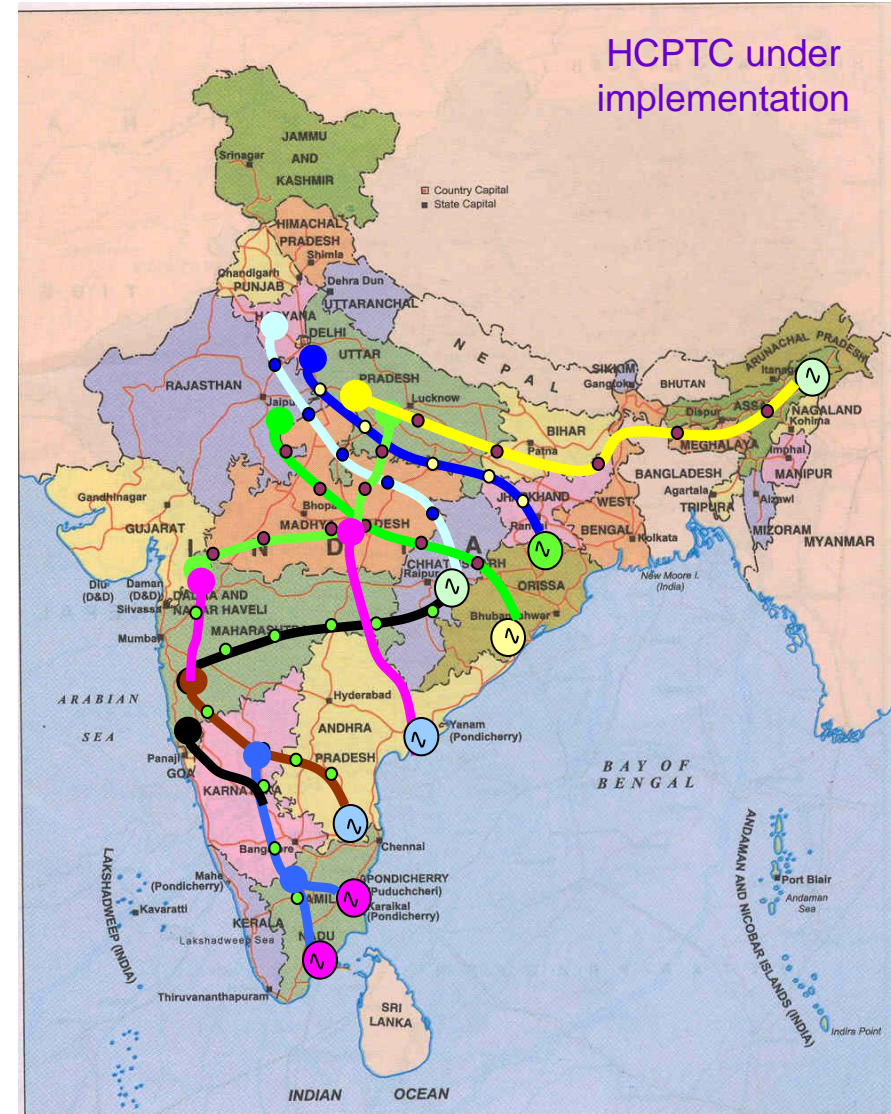
## Distribution

- Fund Reqt. \$ 55,679 million
  - incl. \$ 1,727 million for Smart Grid
- ckm addn. (< 33kV) 13,05,000
- MVA addn. (33/11kV) 138,000 MVA



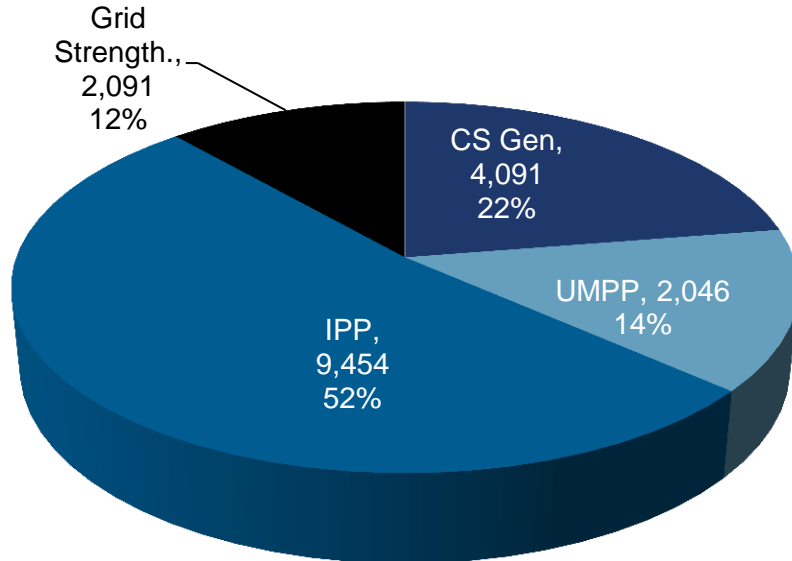
# Road Ahead..... POWERGRID

- ❖ Total Projects in hand worth US\$ 22 billion
- ❖ Ongoing Projects: US\$16 billion
  - Projects include
    - Development of 11 High Capacity Power Transmission Corridors (HCPTC) - US\$ 13.5 billion
- ❖ Transmission capacity addition by 2017
  - 24,000 ckm of 400 kV transmission lines
  - 13,000 ckm of 765kV transmission lines
  - +/- 800kV HVDC Bipoles
  - 90,000 MVA at 765kV
  - 30,000 MVA at 400kV

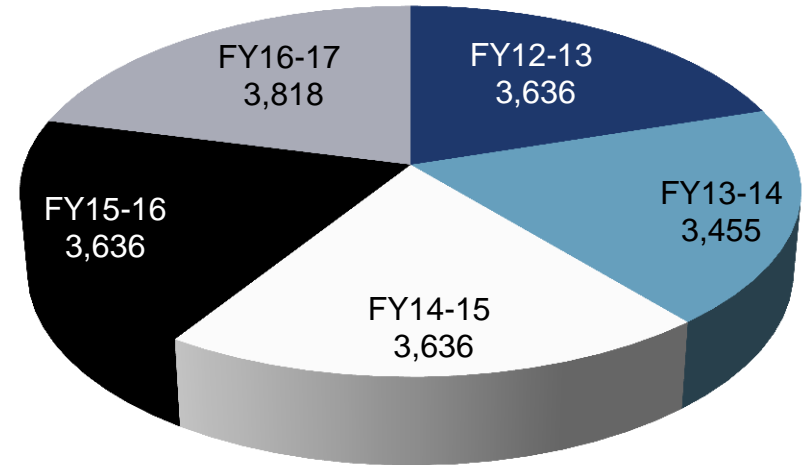


# Investment for XII Plan

(US\$ in million)



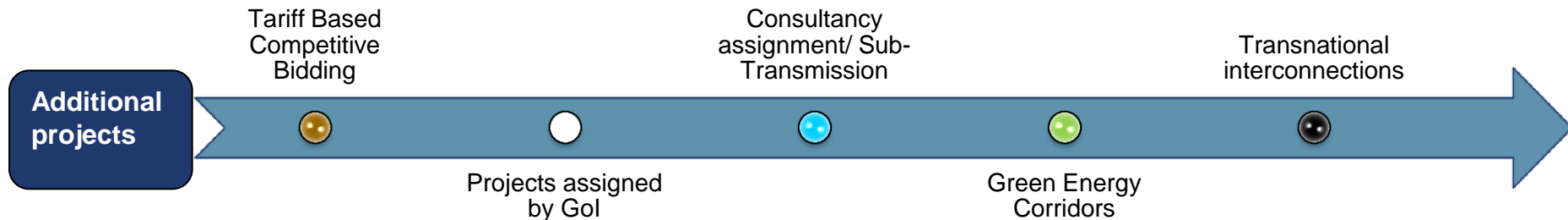
**Projects/ Schemes**



**Capital Outlay**

**Investment Approved - \$ 15,273 million**

**Contracts awarded for Project Cost: \$ 12,727 million**



# Funding for XII Plan

**Investment planned in Debt-Equity ratio of 70:30**

## Requirement

**Equity**  
 \$5,091 - \$5,454mn  
 through  
 Internal  
 Accruals



**Total  
 Investment  
 Programme of  
 \$ 18,182  
 million**

**Debt**  
 \$4,273 mn tied  
 up.  
 \$8,454 -  
 \$8,818 mn to  
 be raised

## Sources

**Domestic Market**

- Bonds
- Line of Credit from SBI

**Foreign Currency**

- Govt. guaranteed funds from IFIs like World Bank & ADB
- ECB including loans from ADB, IFC, Supplier's Credit

## Mobilised during the year

- Bonds from Domestic Market: \$ 727 million - coupon 9.3%
- Foreign Currency Commercial Loan from IFC: US\$ 270 million

## XII Plan Investment Programme (Year-wise)

(US\$ in million)

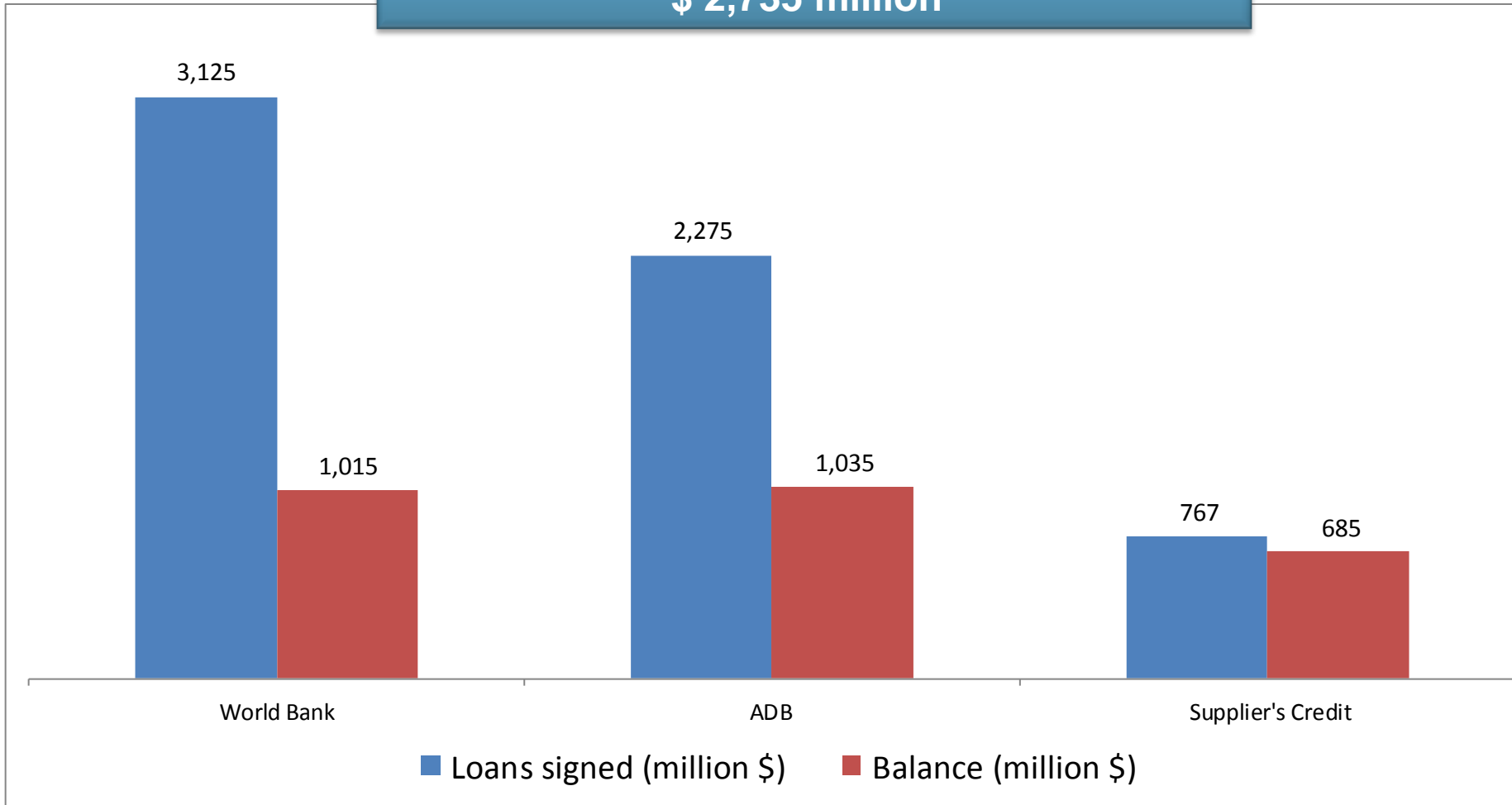
Investment	FY13	FY14	FY15	FY16	FY17	Total
Capex	3,636	3,455	3,636	3,636	3,818	18,182
Debt Requirement	2,546	2,418	2,546	2,546	2,673	12,727
<b>Already Tied Up</b>	<b>1,454</b>	<b>946</b>	<b>654</b>	<b>509</b>	<b>436</b>	<b>4,000</b>
Domestic	909	182	182	182		1,454
Foreign	545	764	472	328	436	2,546
<b>Balance to be tied up through Domestic/ ECB (*)</b>	<b>1,091</b>	<b>1,473</b>	<b>1,891</b>	<b>2,036</b>	<b>2,236</b>	<b>8,727</b>

(\*) The above figures are indicative and will depend on project execution, company's strategy for funding and market conditions.



# Foreign Currency Borrowings

Balance Loans to be utilized during XII Plan  
\$ 2,735 million<sup>1</sup>



1- Balance Loans as on 31<sup>st</sup> Mar, 2012

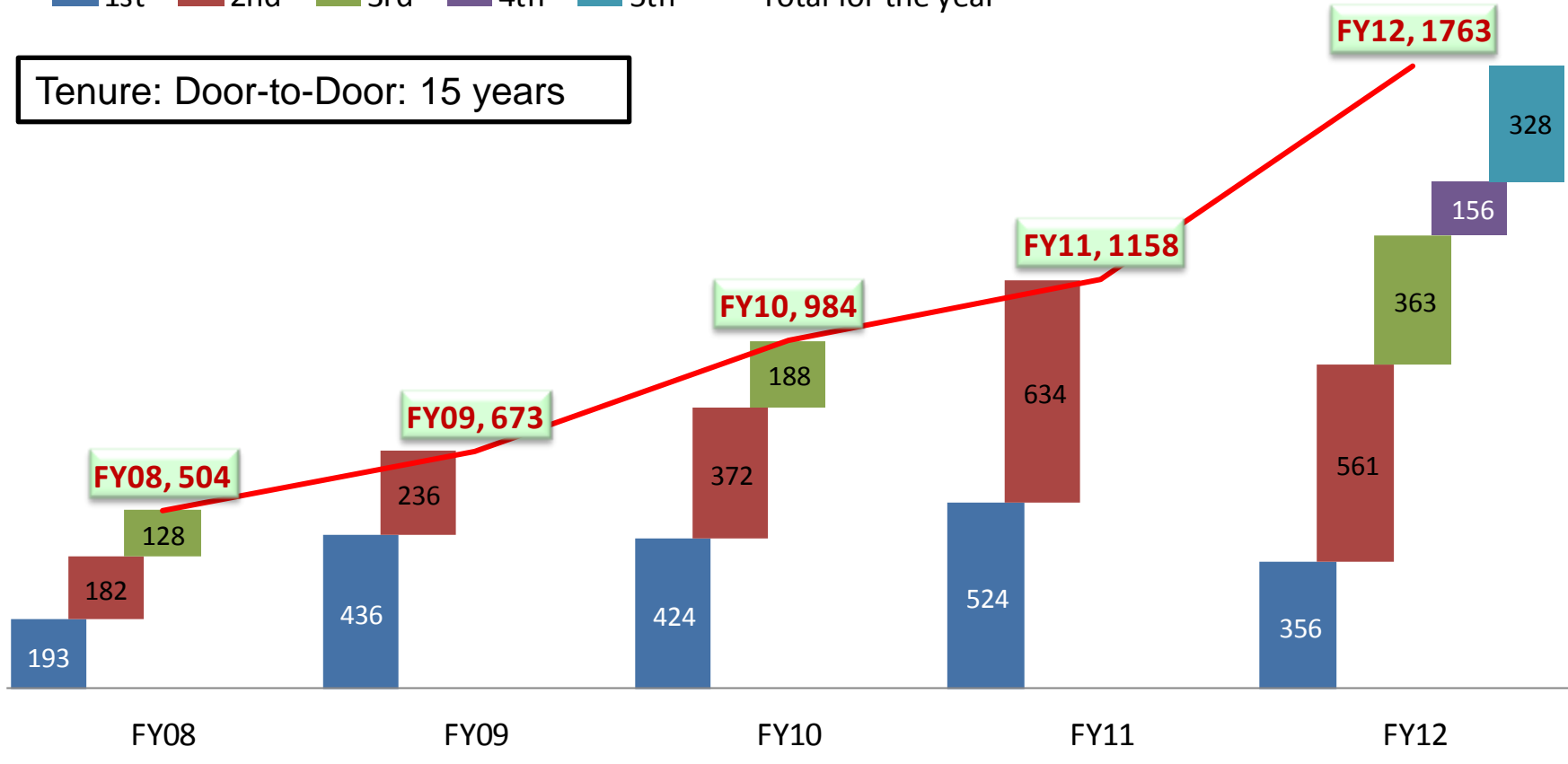
# Domestic Borrowings – Bonds

## Bonds issued during last 5 years

Amounts in equivalent million USD

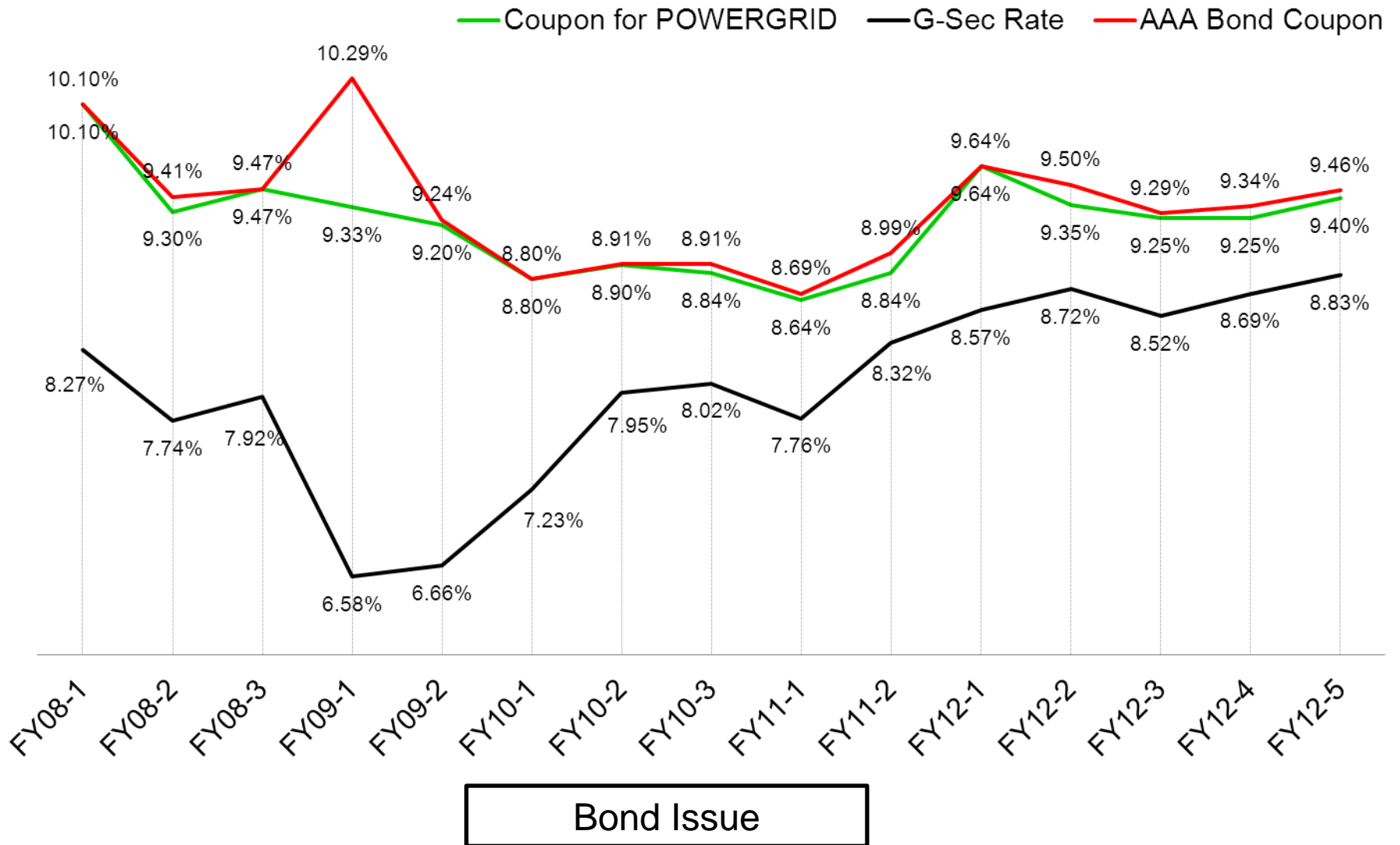
1st 2nd 3rd 4th 5th Total for the year

Tenure: Door-to-Door: 15 years



- **FY13: 1<sup>st</sup> Bond Issue in June 2012: \$ 727 million @ 9.30%**
- **SBI Line of Credit for \$ 909 million tied up**

# Domestic Borrowings – Bonds (Coupon)



Company Overview

Key Highlights

Investment Programme

**New Initiatives**

# Smart Grid/ City

## Smart City (Puducherry)

- Work to commence in Aug'12 (interim arrangement)
- Phase-I expected by Sep'12 to demonstrate in limited area:
  - ✓ Advance Metering Infrastructure
  - ✓ Peak Load Management
  - ✓ Outage Management System

## DPRs submitted

Firozabad (UP)/ Katra (J&K)

## Pre-Feasibility Studies

Chitradurga (Karnataka)/ Tuticorin (TN)/ Gandhinagar (Jammu)/ Charar-e-Sharif , Gulmarg, Pahalgaoon (J&K)/ Bidhuna & Shikohabad (UP)/ Puri (Odisha)/ District/cities of Tripura, Chhatisgarh, Haryana, Punjab

CPSUs

**CPSUs in Steel & Coal Sector** have evinced interest for converting their establishments into **Smart establishments**



## Smart Grid

- Unified Real Time Dynamic State Measurement (URTDMS) Techniques for efficient Grid Operation and Management integrating State Grid, ISTS, IPPs system

# Green Energy Corridors- Grid Integration of Renewable Energy

## GREEN ENERGY CORRIDORS Transmission Plan for Envisaged Renewable Capacity

**\$ 7,636 million investment in transmission for 40 GW**

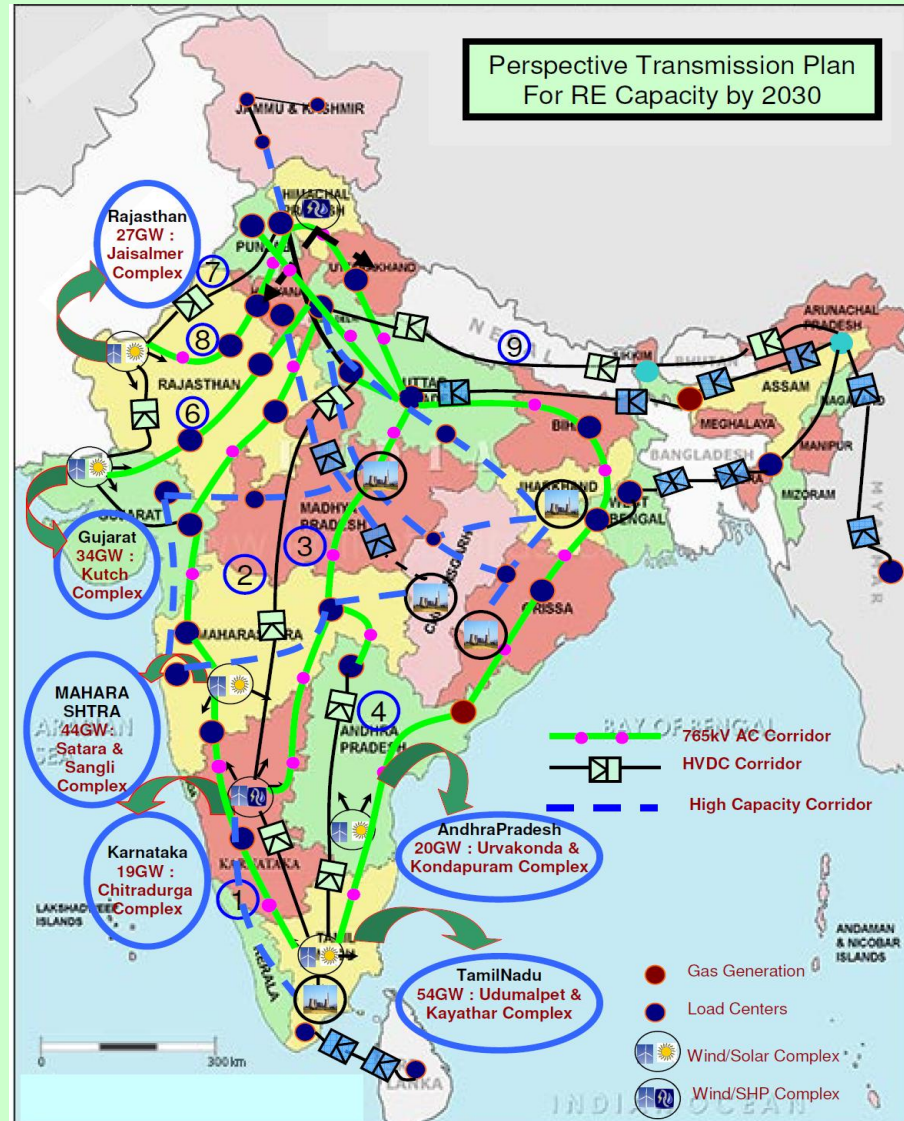
<ul style="list-style-type: none"> <li>❖ <b>Planning of intra-State/inter-State Transmission requirements</b></li> <li>❖ <b>Provide Mechanism to address Wind/Solar generation uncertainty</b> <ul style="list-style-type: none"> <li>• <b>Forecasting of generation</b></li> <li>• <b>Provision of flexible generations, reserves</b></li> <li>• <b>Demand side Management</b></li> <li>• <b>Energy Storage</b></li> <li>• <b>Policy and Regulatory Framework</b></li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>❖ <b>Study Report on Green Energy Corridors</b> <ul style="list-style-type: none"> <li>❑ <b>Submitted to MNRE/ CERC/ CEA/ Planning Commission/ MoP/ MoF</b></li> <li>❑ <b>Inputs from- MNRE, Forum of Regulators, State Nodal Agencies, State Transmission Utilities and CERC</b></li> <li>❑ <b>Transmission System classified into:</b> <ul style="list-style-type: none"> <li>• <b>Connectivity Transmission System</b></li> <li>• <b>Intra-State Strengthening</b></li> <li>• <b>Inter-State Transmission System</b></li> </ul> </li> </ul> </li> </ul>
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**Intra-State TS Strengthening: \$ 3,636 million**  
**Inter-State TS Strengthening: \$ 4,000 million**

includes

- **Other associated works like Energy Storage, Real Time Monitoring System etc.**
- **Establishment of Renewable Energy Management Center**

# Green Energy Corridors- Grid Integration of Renewable Energy



# Business Opportunities



## Backward Integration

- Joint venture companies contemplated for manufacturing of material and equipment

## JVs with States for intra-State Transmission

- Discussions under way with Bihar, Odisha, Jharkhand, Chhatisgarh, Manipur, UP, MP, Tamil Nadu, Karantaka

## Distribution

- RGGVY and APDRP projects under XII Plan
- Management Control of DISCOMs



## Energy Efficiency

- To tap Energy Efficiency Scheme spearheaded by BEE

## R&M of T&D activities of CPSUs

- T&D activities : a non-core area for most CPSUs
- Dialogue initiated with CPSUs in Coal/Steel/Mining Sector
- Future Opportunities in Fertilizer & Petroleum Sectors, both for R&M and Project Consultancy for Sub-Stations





*Thank You*