



**POWER GRID CORPORATION OF INDIA LIMITED**

**Q3 FY 2015-16**

**Press & Analysts' Meet**

**Mumbai**

**January 28, 2016**

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## Highlights – Q3FY16

### POWERGRID Today

### Performance during FY16 (9 months)

- Financial
- Physical
- Operations
- Grid Management
- Other Businesses – Consultancy & Telecom

### Renewable & SAARC

### Investment & Funding Programme

# Highlights - Q3FY16

## NER - Agra HVDC Interconnection Pole I

-

**Commercial Operation from Nov.1, 2015**

- **World's longest (1750km) multi-terminal  $\pm 800$ kV HVDC**
- **Passes through 4 States: Assam, WB, Bihar, UP**
- **Crossing more than 40 rivers**
- **Ultimate Capacity: 6000 MW – Planned to facilitate harnessing hydro-potential in NER & Bhutan**

## 1<sup>st</sup> Line under TBCB Successfully Charged

### 400kV D/C Khammam – Nagarjunasagar

**On Time**

**Within Cost**

- ✓ Traverses ~150km through Telangana & Andhra Pradesh
- ✓ Part of TS for '*System Strengthening in Southern Region for import of Power from Eastern Region*'
- ✓ To facilitate inter-State exchange of power in SR

## India - Bangladesh

- 2<sup>nd</sup> Interconnection completed

**₹ 17,207  
crore**

- Worth works capitalized in Q3
- Highest-ever Quarterly Capitalization

**₹ 26,802  
crore**

- Total Capitalization during FY16 (till Dec-15)



**23%**

- Increase in Income in Q3 w.r.t. Q3FY15

**31%**

- Increase in Profit After Tax in Q3 w.r.t. Q3FY15

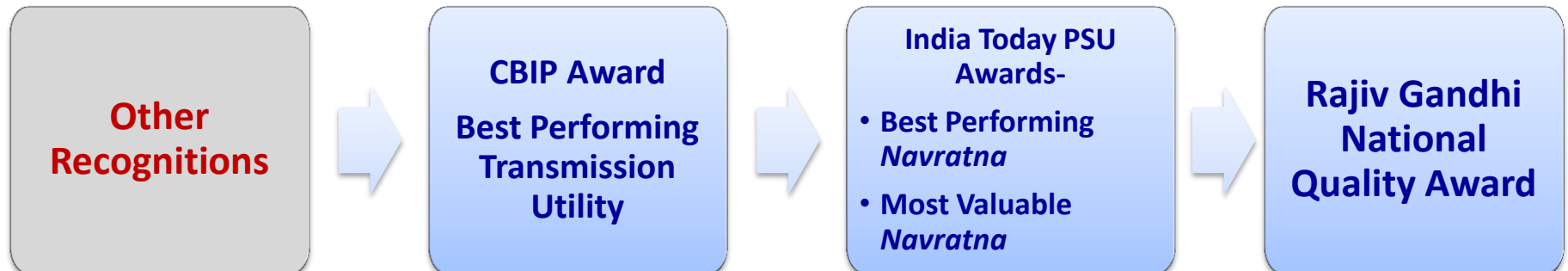
## Global Recognition

As per Platts Top 250 Global Energy Company Rankings 2015 & 2014



### Fastest Growing Electric Utility in Asia for second successive year

Only Indian CPSE among World's Fastest Growing Energy Companies in 2015



# Highlights – Q3FY16

**ONE** Nation Grid Frequency

**ONE Price**



Daily prices are simple average of non-zero prices in (24\*4) no of 15 minutes time block of respective day.

**Dec. 29, 2015**

Date: 26-12-2015 To 30-12-2015

Date	A1	A2	E1	E2	N1	N2	N3	S1	S2	W1	W2	W3	MCP
26-12-2015	2400.66	2400.66	2400.66	2400.66	2400.66	2400.66	2400.66	3606.12	3606.12	2400.66	2400.66	2400.66	2610.86
27-12-2015	2116.29	2116.29	2116.29	2116.29	2116.29	2116.29	2116.29	3004.03	3004.03	2116.29	2116.29	2116.29	2209.99
28-12-2015	2322.31	2322.31	2322.31	2322.31	2322.31	2322.31	2322.31	2964.77	2964.77	2322.31	2322.31	2322.31	2380.63
29-12-2015	2300.04	2300.04	2300.04	2300.04	2300.04	2300.04	2300.04	2300.04	2300.04	2300.04	2300.04	2300.04	2300.04
30-12-2015	2300.23	2300.23	2300.23	2300.23	2300.23	2300.23	2300.23	2912.73	2912.73	2300.23	2300.23	2300.23	2301.84

→ Avg. Market Clearing Price in ₹ /MWh: ₹ 2.30

Source: India Energy Exchange

## Providing Support during Natural Calamities



### Floods in Chennai (Nov-Dec, 2015)

- Support to Tamil Nadu to restore EHV lines

- Support extended for restoration of:
  - 400kV line (1 No.) & 230kV lines (2 Nos.) including evacuation lines from Kalpakkam Nuclear Power Plant & North Chennai TPS
- 20mbps dedicate bandwidth extended to MLDC



### Earthquake in Manipur (4-Jan, 2016)

- Support to Manipur to restore Power Supply

- Power situation turned critical
- Support extended for restoration works
- Local grid restored within few hours

# POWERGRID Today

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A 'NAVRATNA' ENTERPRISE

CENTRAL TRANSMISSION UTILITY

LISTED COMPANY since 2007

GOVT. SHAREHOLDING 57.90%

PAYING DIVIDEND SINCE 1993-94

Market Capitalization ₹ 73,870 crore<sup>1</sup>

- ✓ **>90% ISTS Transmission Network owned by POWERGRID**
  - ✓ **Trans. Lines: 1014 Nos. - 127,539 ckm**
  - ✓ **Sub-stations: 205 Nos. - 248,164 MVA**
- } 400kV & above: >90%
- ✓ **State-of-the-art technologies like HVDC, SVC, FACTS etc.**
  - ✓ **>40% power generated in India transmitted through POWERGRID**

## CREDIT RATINGS



# Performance in FY16 (9 months)

# Performance- Financial



(₹ in crore)					
	Quarter ended		Nine months ended		FY 2014-15
	31.12.2015	31.12.2014	31.12.2015	31.12.2014	
<b>Revenue</b>					
- Transmission Charges	5190	4183	14452	12054	16521
- Consultancy Income: Services	114	102	302	224	381
- Telecom	103	69	288	196	275
- Other Income	98	132	278	396	603
<b>Total Income</b>	<b>5505</b>	<b>4486</b>	<b>15320</b>	<b>12870</b>	<b>17780</b>
- Operating Expenses(including prior period adjustment)	611	613*	1790	1781*	2426
<b>EBITDA-Gross Margin</b>	<b>4894</b>	<b>3873</b>	<b>13530</b>	<b>11089</b>	<b>15354</b>
Depreciation	1580	1301	4398	3667	5085
Interest	1288	1025	3546	2942	3979
Tax	413	318	1158	913	1311
<b>Profit after Tax</b>	<b>1613</b>	<b>1229</b>	<b>4428</b>	<b>3567</b>	<b>4979</b>

\* Operating Expenses for the quarter and nine months ending 31-12-2014 includes prior period expenses of ₹ 30 crore and ₹ 72 crore respectively



# Performance - Financial

	(₹ in crore)			
	As on 31.03.2015	As on 30.06.2015	As on 30.09.2015	As on 31.12.2015
<b>Gross Fixed Assets</b>	118,264	122,811	127,860	145,067
Capital Work-in-Progress	56,292	56,878	58,094	46,000
<b>Debt</b>	93,845	99,412	104,164	105,387
<b>Net Worth</b>	38,037	39,404	40,852	42,465
<b>Earning Per Share (₹)</b>	9.52	2.61#	5.38#	8.46#
<b>Book Value per Share (₹)</b>	72.71	75.32	78.09	81.17
<b>Key Financial Ratios</b>				
<b>Debt : Equity</b>	71:29	72:28	72:28	72:28**
<b>Return on Net Worth</b>	13.09%	3.47%#	6.89%#	10.43%#

# Not Annualized

\*\* Considering Interim Dividend Payment

# Performance - Financial (Billing & Realization)

As on 31.12.2015

**Total Outstanding**

~ ₹ 2,356 crore  
(45 days billing<sup>#</sup>)

**Transmission Outstanding  
(beyond 60 days)**

~ ₹ 393 crore  
(7 days billing<sup>#</sup>)

**Billed but not outstanding  
(<60 days allowed as per CERC)**

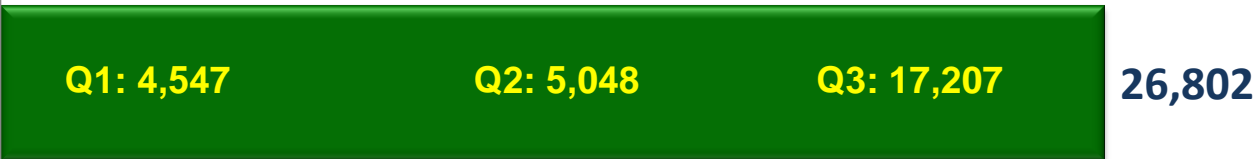
~ ₹ 1,726 crore  
(33 days billing<sup>#</sup>)

# Avg. Monthly Billing: ₹ 1,577 => 2 months 60 days) billing = ₹ 3,154 crore

# Performance - Financial

## Period: 9 months FY16

**Capitalisation**  
(₹ in crore)

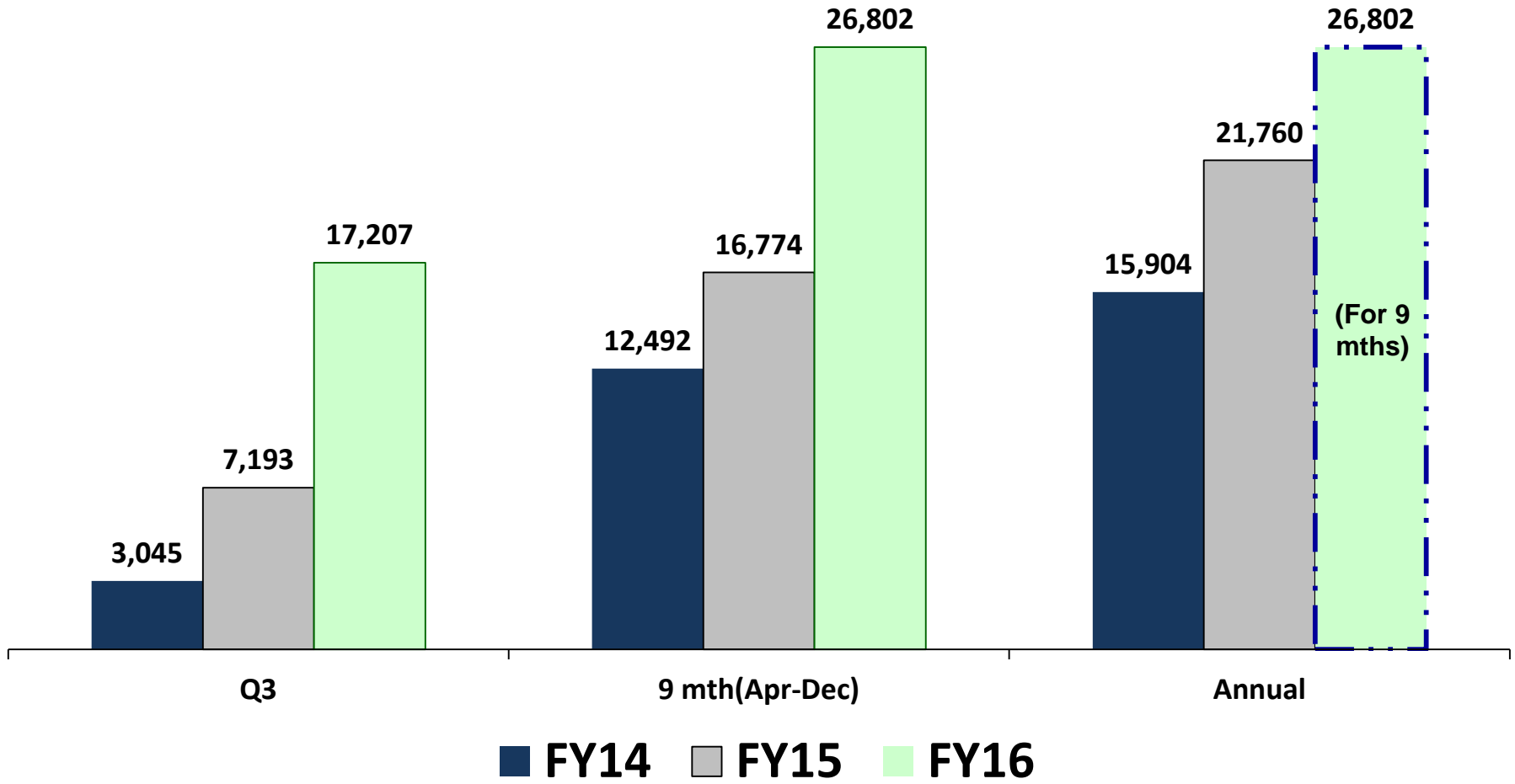


**Capex**  
(₹ in crore)



# Performance – Physical (3 years)

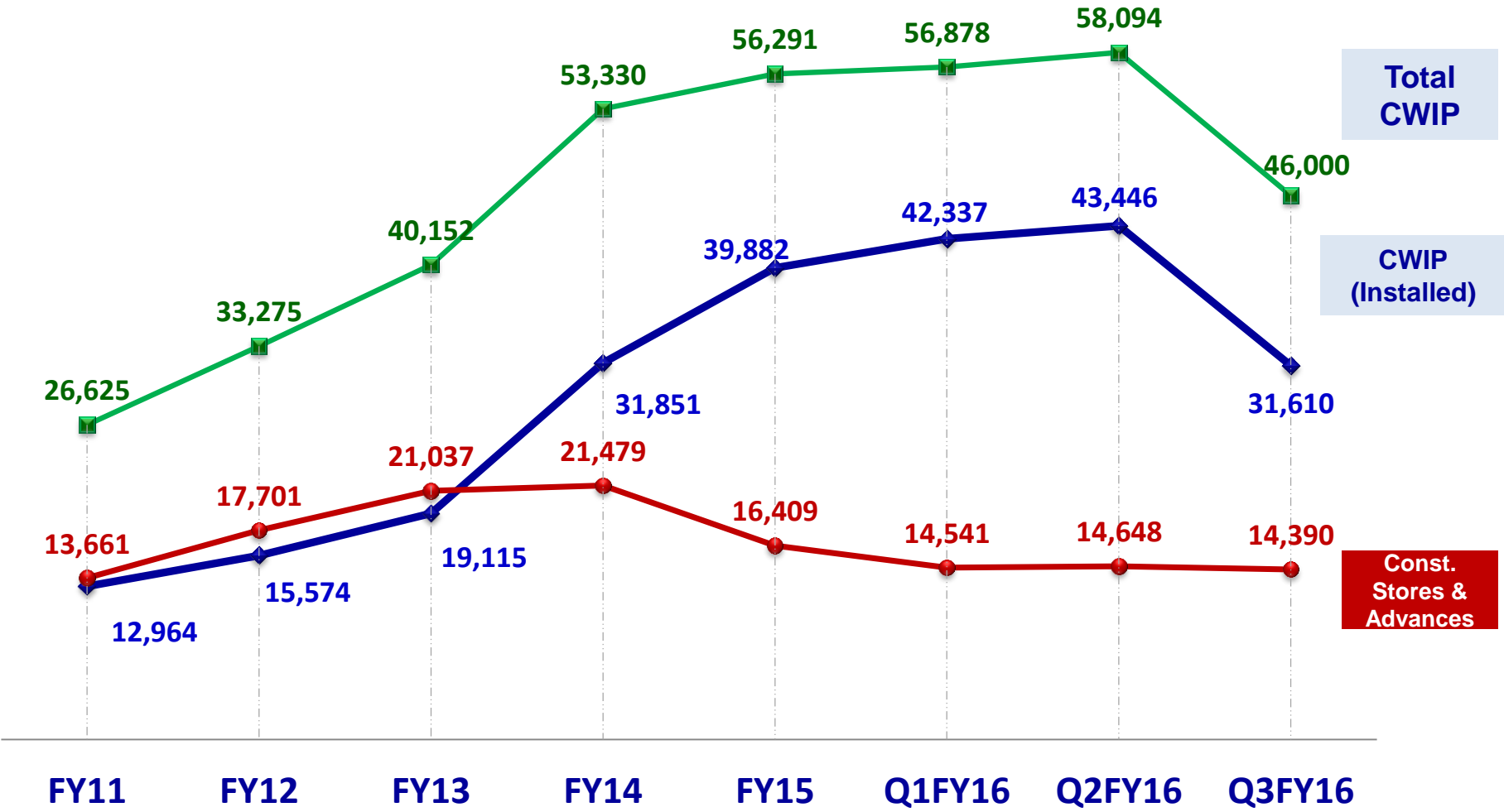
## Capitalization



(₹ in crore)

# Performance – Physical (CWIP)

(₹ in crore)



# Performance - Physical

Period: 9 months FY16

**Transmission  
Line**

- **11,629 ckm**
- **13,109 GW-ckm**

**Sub-stations**

- **13 Nos.**
- **14,295 MVA**

**Inter-Regional  
Capacity**

- **11,000 MW**

# Projects in FY16

## Transmission Lines

20,500 GW-ckm



### Major Lines

- Bareilly-Kashipur, Kashipur-Roorkee
- V'chal – Satna, V'chal-Satna (2<sup>nd</sup> line)
- Meerut – Moga, Kanpur – Jhatikara
- Barh-Gorakhpur
- Raigarh - Champa
- Silchar – Purba Kanchan Bari
- Vijayawada – Nellore
- Gwalior – Jaipur, Jaipur-Bhiwani(2<sup>nd</sup> line)
- Biswanath Chariyali – Agra (NE-NR/WR Interconnector) & associated AC system
- Mysore-Kozhikode
- Kudgi-Kolhapur
- Gooty – Madhugiri
- Ranchi-Dharamjaygarh; Dharamjaygarh–Jabalpur
- Kurnool-Raichur
- Aurangabad-Boisar
- Angul – Jharsuguda (2<sup>nd</sup> line)
- Raipur PS - Wardha(2<sup>nd</sup> line), Wardha-Aurangabad
- Dehradun-Baghat, Roorkee-Saharanpur
- Pasighat – Roing – Tezu
- Balia – Varanasi, Gaya-Varanasi, Varanasi-Kanpur
- Kishanganj-Patna
- LILOs- Meerut-Kaithal; **Baripada-Mendhasal**;
- 800kV Champa-Kurukshetra HVDC (Pole-I)

## Sub-Stations

20 Nos.



### Sub-stations

- Vindhyachal PS
- New Melli (GIS)
- Champa PS
- Vadodara (GIS)
- Mokokchung (GIS)
- Biswanath Chariyali AC#
- Biswanath Chariyali HVDC
- Agra HVDC
- Kozhikode
- Kudgi (GIS)
- Kolhapur (GIS)
- Madhugiri (GIS)
- Kurukshetra (GIS)#
- Salem (Dharmapuri)
- Navi Mumbai (GIS)
- Kanpur
- Kishanganj
- Varanasi
- Pandiabil (GIS)
- Saharanpur
- Bagpat (GIS)
- Dehradun
- Roing
- Tezu
- Champa HVDC
- Kurukshetra HVDC

# Initially envisaged as part of HVDC

## Inter-Regional Capacity

16,700 MW



### Inter-Regional

- Barh – Gorakhpur
- Gwalior-Jaipur
- Biswanath Chariyali – Agra (NE-NR/WR Interconnector) – Pole I
- Ranchi-Dharamjaygarh
- Kudgi-Kolhapur
- Gaya-Varanasi
- Champa-Kurukshetra Pole-I



Transnational Interconnections

- **India-Bangladesh** (Surjyamaninagar-Comilla)
- **India-Nepal** (Muzzafarpur-Dhalkebar)

Completed.  
Ready for power flow

Green font indicates assets commissioned in FY16

# Operations - FY16 (till Dec-15)

- **Assets as on Dec-15:**
  - ✓ **Trans. Lines : 1013 Nos. - 127,266 ckm**
  - ✓ **Sub-stations : 205 Nos. - 246,004 MVA**  
(104 sub-stations remotely operated)
  
- **Performance during FY16 (till Dec-15)**
  - ✓ **Availability : 99.78%**
  - ✓ **Reliability : 0.54 Trippings/ line**

## New Initiatives in Asset Management

- ✓ **Aerial Patrolling (using helicopters) of 17,000 km of transmission lines to commence from March, 2016**
- ✓ **Maintenance of transmission lines using helicopters – Bids under evaluation**
- ✓ **Use of Unmanned Aerial System (UAS)/ Drones**



# Grid Management<sup>1</sup> - FY16 (till Dec-15)

Period: 9 months FY16

**83 BU**

- **Inter-Regional Power Transfer**

**75 BU**

- **Energy Transacted through Short Term Open Access**

**33,852**

- **No. of STOA Transactions**

**Orders recd.:**

**21**



**Project Cost of Orders  
recd.: ₹ 600 crore**

**Assignments under  
execution:**

**117**



**Project Cost: ₹ 18,700 cr.  
(Balance cost)**

## ✓ Major Ongoing Assignments

- ✓ NER Power System Improvement Project (6 NE States)
- ✓ Strengthening of T&D System in Arunachal & Sikkim
- ✓ 220kV TS to Leh-Kargil (J&K)
- ✓ Evacuation System for Lalitpur TPP (UP)
- ✓ Implementation of IPDS at Old Kashi area

## Footprints in 18 countries

**14 Nos. -** Assignments under execution (as on Dec-15)

### Major Ongoing assignments

- 2<sup>nd</sup> Block of 1x500MW HVDC B2B Stn. at Bheramara
- CASA-1000 Project
- Assignments from ADB & World Bank in Nepal
- Trans. Infrastructure works in Kenya

**Management Contract in Ethiopia – Successfully completed**

**41 New Clients  
added**

**[(Pvt. (26), Govt(15))]**

**Total Order Book  
> ₹ 2100 crore**

## ➤ Infrastructure:

- **Fiber Optic Network** : ~ 36,500km
- **Points of Presence** : 595
- **Backbone Availability** : 100%

## ➤ Major Projects:

- **National Knowledge Network (NKN):** Project completed & Under Operation
- **National Optic Fiber Network (NOFN):** Work for 6,900 Gram Panchayats under progress - 3,222 Gram Panchayats connected

# Renewables & SAARC

## Green Energy Corridors (ISTS ₹ 13,000 crore)

<b>Part A</b>	<b>Works commenced</b>
<b>Part B</b>	<b>Works commenced</b>
<b>Part C</b>	<b>Ready for Award</b>
<b>Part D</b>	<b>Projects under Bidding</b>

## TS for Ultra Mega Solar Parks

<p><b>Andhra Pradesh</b></p> <p><b>NP Kunta (1500MW)</b></p>	<p><b>Madhya Pradesh</b></p> <p><b>Rewa (750MW)</b></p>	<p><b>Karnataka</b></p> <p><b>Pavagada (Tumkur) (2000MW)</b></p>	<p><b>Rajasthan</b></p> <p><b>Bhadla (1700MW)</b></p>	<p><b>Uttar Pradesh</b></p> <p><b>Jalaun (370MW)</b></p>	<p><b>Gujarat</b></p> <p><b>Banaskantha (750MW)</b></p>
<p><b>Implementation commenced</b></p>		<p><b>Tendering activities under progress</b></p>		<p><b>Scheme under finalization by CEA</b></p>	

# SAARC Interconnections

## Bhutan

400kV Alipurduar –  
Punatsangchu-I HEP  
line under  
implementation

400kV Jigmeling-  
Alipurduar line under  
implementation

## Bangladesh

400kV Surjyanagar-  
Comilla South link  
completed.

2<sup>nd</sup> Block of 1x500MW  
HVDC B2B firmed up

## Nepal

400kV Muzaffarpur-  
Dhalkebar line to be  
completed shortly



# Investment & Funding Programme

# Investment & Funding Programme

XII Plan Capital Outlay\*

## Annual Capex Plan

₹110,000 crore

**FY13:**  
₹20,037 cr.  
(Achieved)

**FY14:**  
₹23,158 cr.  
(Achieved)

**FY15:**  
₹ 22,456 cr.  
(Achieved)

**FY16:**  
₹ 22,500 cr.  
(₹16,891 cr. till Dec-15)

**FY17:**  
₹22,550 cr.

### \*Projects

Ongoing Projects; Tariff Based Bidding Projects; Projects assigned by GoI; Green Energy Corridors; Intra-State Projects; Transnational Interconnections

## FY16 (till Dec-15)

Investments Approved

₹ 9,471 crore  
(13 Projects)

(till date ₹ 11,982 cr./ 20 Projects)

Contracts  
Awarded

₹ 13,465 crore

Bids opened

~ ₹ 23,301 crore

NITs issued/ Bids  
yet to be opened

~ ₹ 9,034 crore

*Thank You*