

Power Grid Corporation of India Limited



POWER GRID

Fastest Growing Electric Utility in Asia

**Press & Analysts' Meets
Mumbai
May 27, 2016**

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Major Highlights

POWERGRID Overview

Sector Overview & Performance

Performance (FY16)

- Financial
 - Operational
-

Journey - Last 5 years

Performance (FY16) – Consultancy, Telecom, CSR & Sustainability

Projects Targeted in FY17 & Status of TBCB Projects

Outlook, Investment Programme & Way Forward

Major Recognitions

Major Highlights



POWERGRID Stock getting included¹



Thank You

*for your continued faith
& confidence*

1- w.e.f. 20-Jun-2016; Source: BSE Notice dated 20-5-16

**₹ 31,788
crore**

- Highest ever yearly Capitalization

13,717 ckm

- Highest ever TL ckm addition (Annual)

**Financials scale
new peaks**

- Gross Fixed Assets surpassed ₹ 1.5 lakh cr.
- Annual Income surpassed ₹ 20,000 crore
- Profit After Tax surpassed ₹ 6,000 crore

NER-Agra HVDC (Pole-I)

World's longest multi-terminal ± 800 kV HVDC Tr. Line commissioned

SAARC Interconnections

Additional Link(s) with Nepal & Bangladesh completed & operationalised

Projects acquired through TBCB

1st line* successfully charged in time
* 400kV D/C Khammam – Nagarjunasagar

Support in Natural Calamities

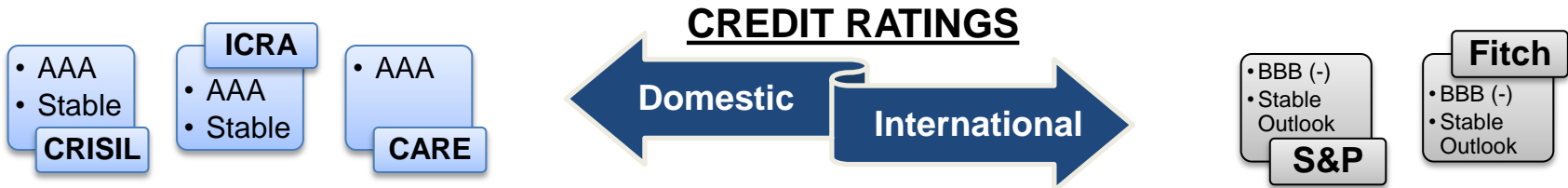
- Nepal Earthquake (Apr-15)
- Chennai floods (Dec-15)
- Manipur Earthquake (Jan-16)

POWERGRID Overview

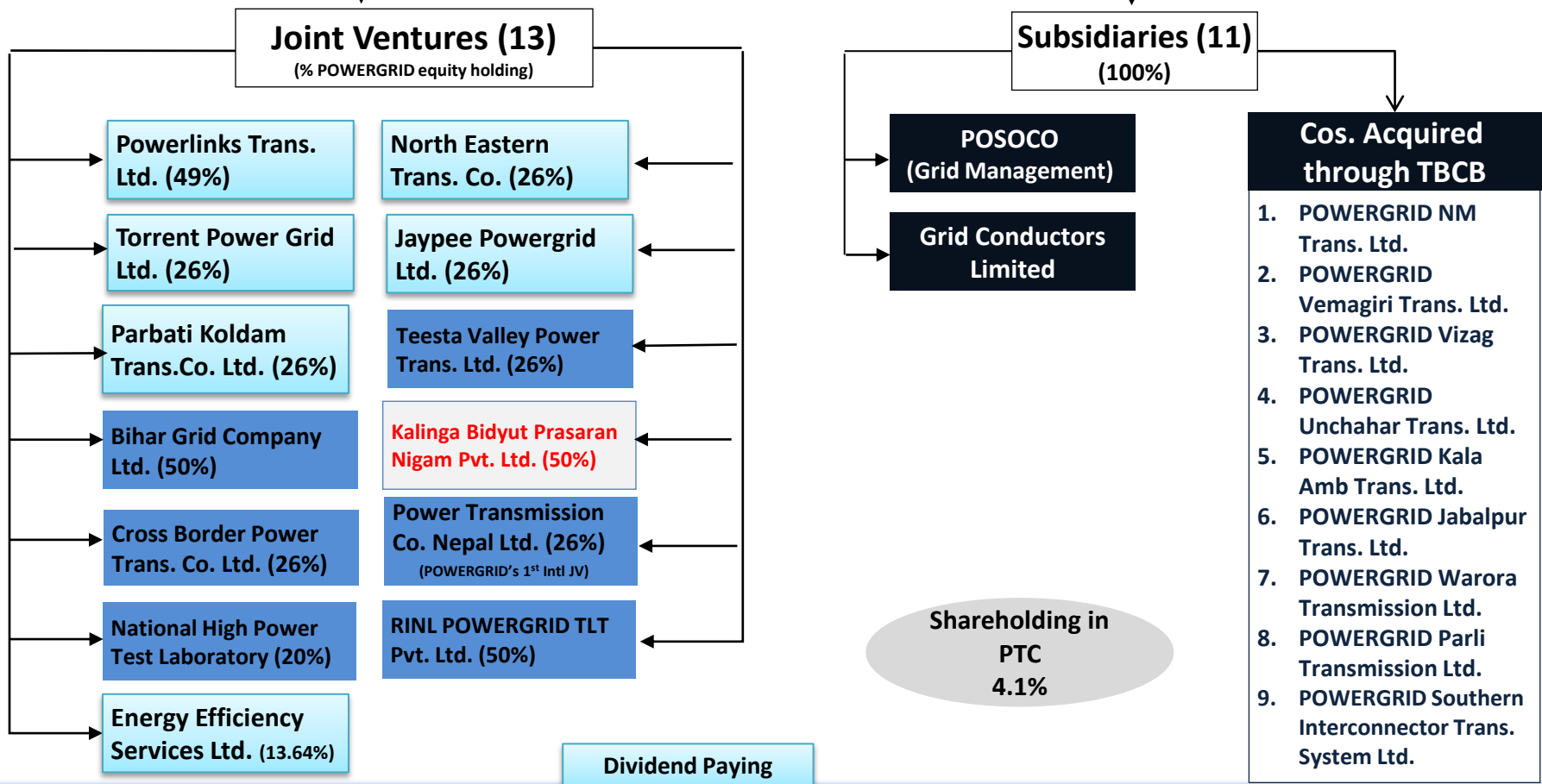
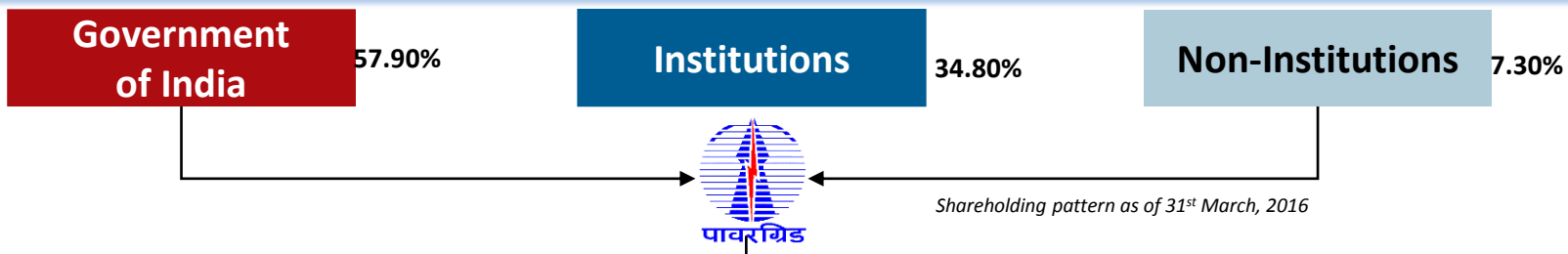
POWERGRID Today

A 'NAVRATNA' ENTERPRISE	CENTRAL TRANSMISSION UTILITY	LISTED COMPANY since 2007	GOVT. SHAREHOLDING 57.90%	PAYING DIVIDEND SINCE 1993-94	Market Capitalization ₹ 72,771 crore ¹
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- ✓ >90% ISTS Transmission Network owned by POWERGRID
 - ✓ Trans. Lines: 1037 Nos. - ~ 129,600 ckm
 - ✓ Sub-stations: 208 Nos. - ~ 255,000 MVA
- } 400kV & above: >90%
- ✓ State-of-the-art technologies like HVDC, SVC, FACTS etc.
 - ✓ >45% power generated in India transmitted through POWERGRID



POWERGRID Group



Sector

-

Overview & Performance

Power Sector Overview & Performance

Generation & Power Supply

	Installed Capacity incl. RE (GW)	RE Capacity (GW)
At the end of FY12 (Mar-12)	200	24.5
At the end of FY16 (Mar-16)	302	42.8
Addn. in 4 years (Apr12-Mar16)	102	18.3
Addn. in FY16	30	7.1

Per Capita Consumption: 1075 kWh (2015-16 Prov.)

Energy Generated in FY16

- 1,107 BU (5.6% ↑)
- RE Generation: 60.5 BU (Apr15-Feb16)

Power Supply Position in FY16

- Energy Deficit: 2.1% (23.5 BU)
- Peak Deficit: 3.2% (5 GW)

Source: CEA website / Gol

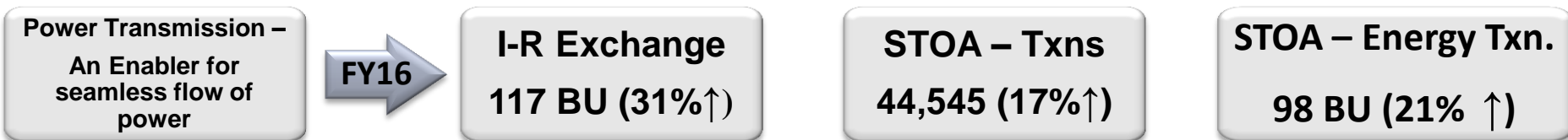
Power Sector Overview & Performance (contd.)

Transmission Infrastructure

	Transmission (ckm)	X-formation Capacity (MVA)	I-R Capacity (MW)
At the end of FY12 (Mar-12)	257,481	409,551	27,750 [#]
At the end of FY16 (Mar-16)	341,551	658,949	58,850 [#]
Addn. in 4 years (Apr12-Mar16)	84,070	249,398	31,100
Addn. by POWERGRID	36,123	130,823	24,900
Addn. in FY16 by POWERGRID only	13,717	23,578	12,400

including 600MW I-R Capacity pertaining to 132kV lines

For voltage levels 220kV & above



Source: CEA website/ POWERGRID/ POSOCO

Transmission Lines
13,717 ckm



Major Lines

- Bareilly-Kashipur,
- V'chal – Satna, V'chal-Satna (2nd line)
- Meerut – Moga
- Barh-Gorakhpur
- Raigarh - Champa
- Silchar – Purba Kanchan Bari
- Vijayawada – Nellore
- Gwalior – Jaipur, Jaipur-Bhiwani(2nd line)
- Biswanath Chariyali – Agra (NE-NR/WR Interconnector) & associated AC system
- Mysore-Kozhikode
- Kudgi-Kolhapur
- Gooty – Madhugiri
- Ranchi-Dharamjaygarh; Dharamjaygarh– Jabalpur
- Kurnool-Raichur
- Angul – Jharsuguda (2nd line)
- Balia – Varanasi,
- Kishenganj-Patna
- LILOs- Meerut-Kaithal

Sub-Stations
15 Nos.
23,578 MVA



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)[#]
- Kishenganj (GIS)
- Varanasi (GIS)

[#] Initially envisaged as part of HVDC

Inter-Regional Capacity
12,400 MW



Inter-Regional

- Barh – Gorakhpur
- Gwalior-Jaipur
- Biswanath Chariyali – Agra (NE-NR/WR Interconnector) – Pole I
- Ranchi-Dharamjaygarh
- Kudgi-Kolhapur
- Extn. of Biharsharif-Sasaram to Varanasi



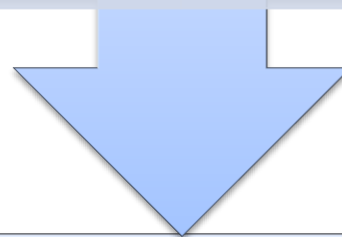
Transnational Interconnections

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

Enhancement of Capacity in last 2 years (FY15, FY16)

WR to NR:
Capacity enhanced from 3,700 MW to
7,600 MW (105% ↑)

NEW Grid to SR:
Capacity enhanced from 3,450 MW to
5,900 MW (71% ↑)



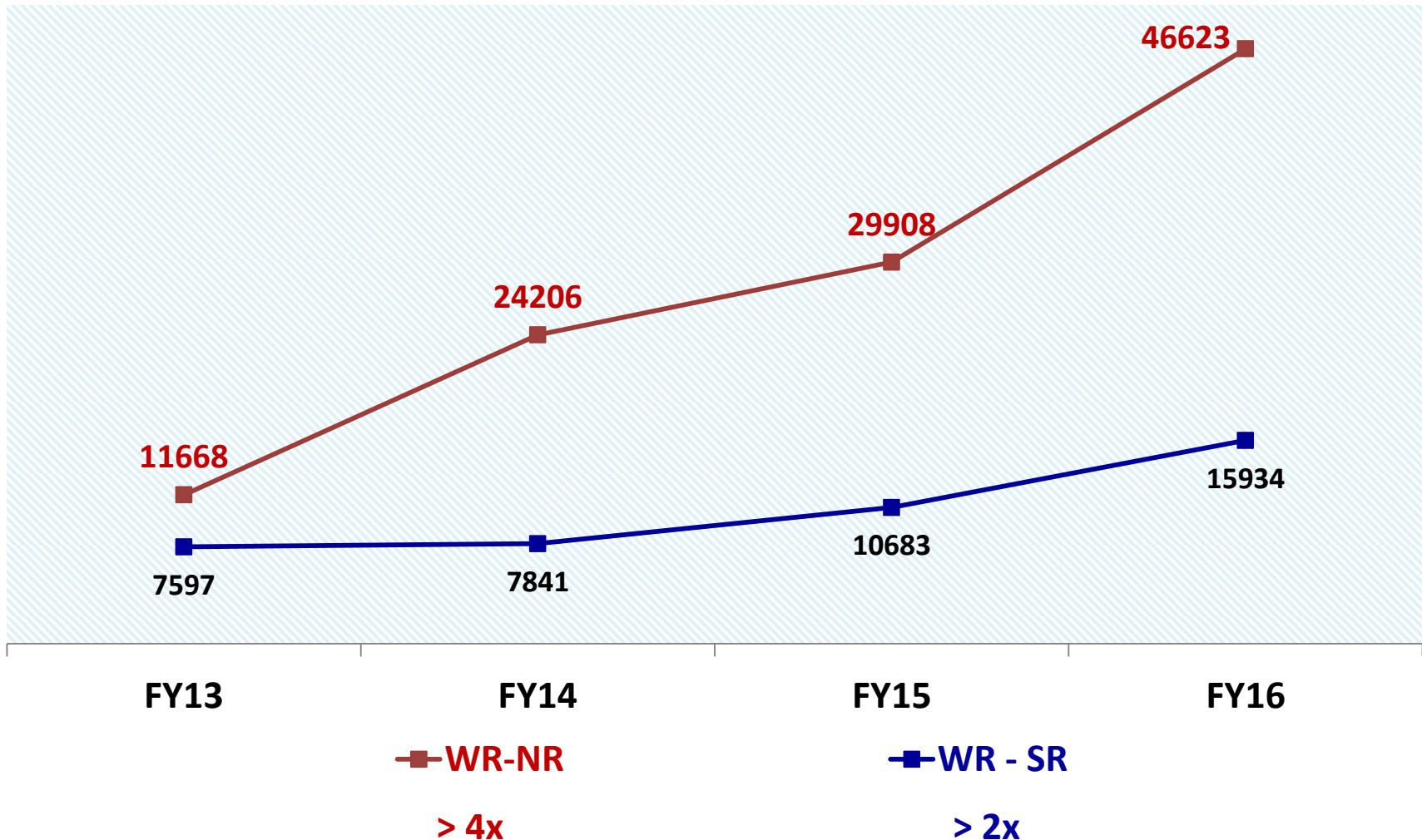
Targeted increase in Capacity in next 2 years (FY17, FY18)

WR to NR:
Envisaged Capacity: 17,000MW
(Addn. envisaged in 2 yrs: 9,400 MW)

NEW Grid to SR:
Envisaged Capacity: 9,900 MW
(Addn. envisaged in 2 yrs: 4,000 MW)

Transmission- Congestion Management

I-R Power flow from WR to NR & WR to SR (MUs)



Transmission- Positives Steps towards Project Execution



Improvement in Forest Clearance Process

Permission to start work after Stage-I/ In-principle approval

Enhancement in delegation of powers of Regional Offices of MoEFCC

Easing Compensatory Afforestation (CA) conditions in TBCB projects

Right of Way (RoW) Compensation (Reviewed)

New guidelines (in Oct, 2015) for compensation issued:

- Compensation of land cost below tower base (85% of cost of land)
- Compensation towards diminution of land value under RoW (15% of land cost)

This is in addition to compensation provision prevalent earlier

Recognition to early completion

In the case of actual date of commissioning (COD) prior to Scheduled COD for Transmission Lines under System Strengthening Schemes

- Developer entitled to claim Tr. charges from actual COD

Performance (FY16)

Performance (FY16)- Financial



Description	(₹ in crore)			
	Quarter ended		Year ended	
	Standalone		Standalone	
	31.03.2016	31.03.2015	31.03.2016	31.03.2015
Income				
- Transmission Charges	5,492	4,468	19,945	16,521
- Consultancy – Services	163	157	465	381
- Telecom	105	79	392	275
- Other Income	201	206	479	603
Total Income	5,961	4,910	21,281	17,780
Operating Expenses (including prior period adjustment)	666	645	2,456	2,426
EBITDA-Gross Margin	5,295	4,265	18,825	15,354
Depreciation	1,785	1,418	6,183	5,085
Interest	1,477	1,038	5,023	3,979
Extraordinary Items (Net of Tax exp.)		-		0
Tax	434	397	1,592	1,311
Profit after Tax	1,599	1,412	6,027	4,979

Growth in Income : 20%

Growth in Profit After Tax: 21%

Performance (FY16) - Financial

	(₹ in crore)	
Description	As on 31.03.2016	As on 31.03.2015
Gross Fixed Assets	1,50,052	118,264
Capital Work-in-Progress	46,830	56,292
Debt	1,06,321	93,845
Net Worth	42,598	38,037
Earning Per Share (₹)	11.52	9.52
Book Value per Share (₹)	81.43	72.71
Key Financial Ratios		
Debt : Equity	71:29	71:29
Return on Net Worth	14.15%	13.09%

Performance (FY16) - Financial

Billing & Realization

Billing

₹ 19,178 crore

Realization

₹ 18,668 crore

%age realization

97.34%

As on 31.03.2016

Total Outstanding

~ ₹ 2,596 crore
(50 days billing#)

**Transmission Outstanding
(beyond 60 days)**

~ ₹ 367 crore
(7 days billing#)

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

~ ₹ 2,229 crore
(43 days billing#)

Avg. Monthly Billing: ₹ 1598 cr. => 2 months 60 days) billing = ₹ 3,196 cr.

Performance(FY16) - Operational

■ Performance during FY16

- ✓ **Availability** : 99.72%
- ✓ **Reliability** : 0.66 Trippings/ line

■ Assets as on Mar-16:

- ✓ **Trans. Lines** : 1031 Nos. - 129,354 ckm
- ✓ **Sub-stations** : 207 Nos. (incl. 24 GIS) - 255,348 MVA
(104 sub-stations remotely operated)

**Voltage Landscape
migrating to 765kV
(Mar'16 vs Mar'11)**

- **TL (765kV & above): 17% vs <1%**
- **S/S (765kV & above): 19% vs <1%**

**New
Initiatives in
Asset
Management**

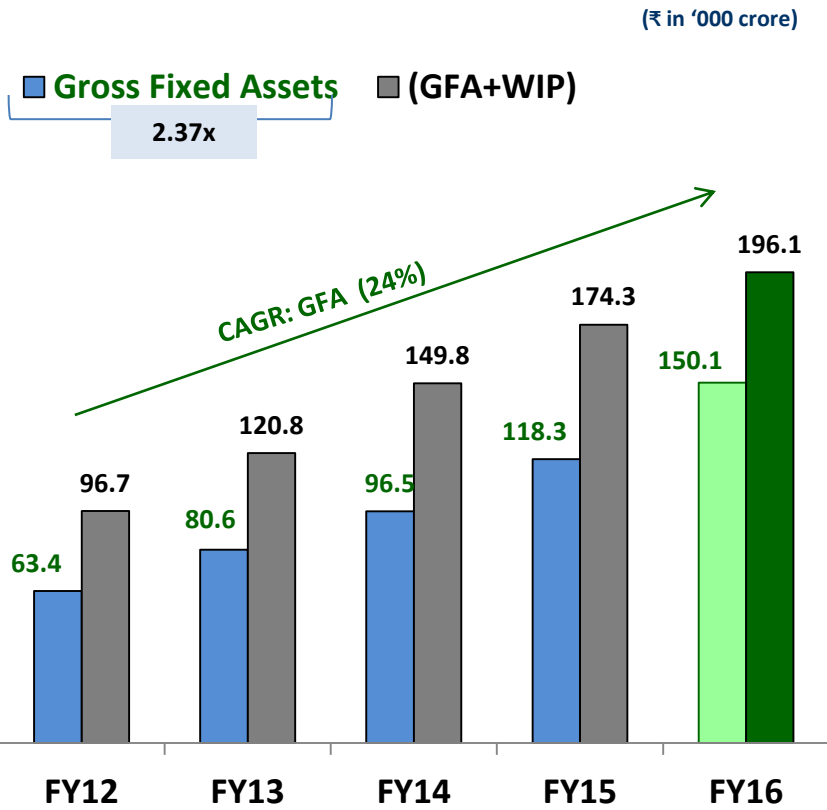
- **Aerial Patrolling (using helicopters) of 17,000 km of TL to commence shortly**
- **Use of Unmanned Aerial Vehicles (UAVs/ Drones) commences w.e.f Apr-16**

Journey (Last 5 years)

Journey (Last 5 years): Asset Creation

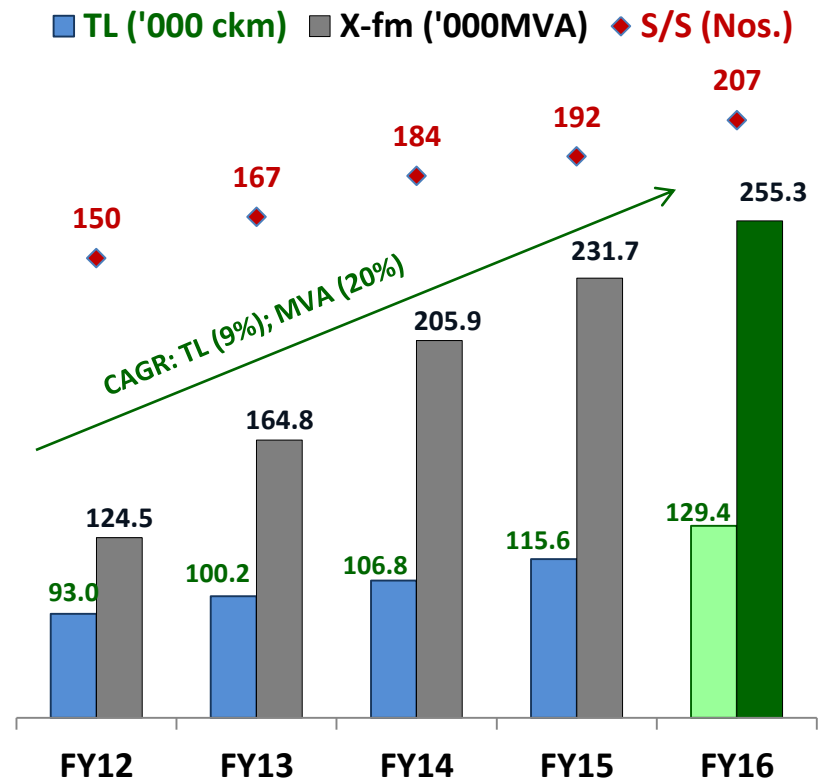
Consistent Asset Growth

Investment-led Asset Growth...



Poised to become 3rd Largest CPSE in the Country

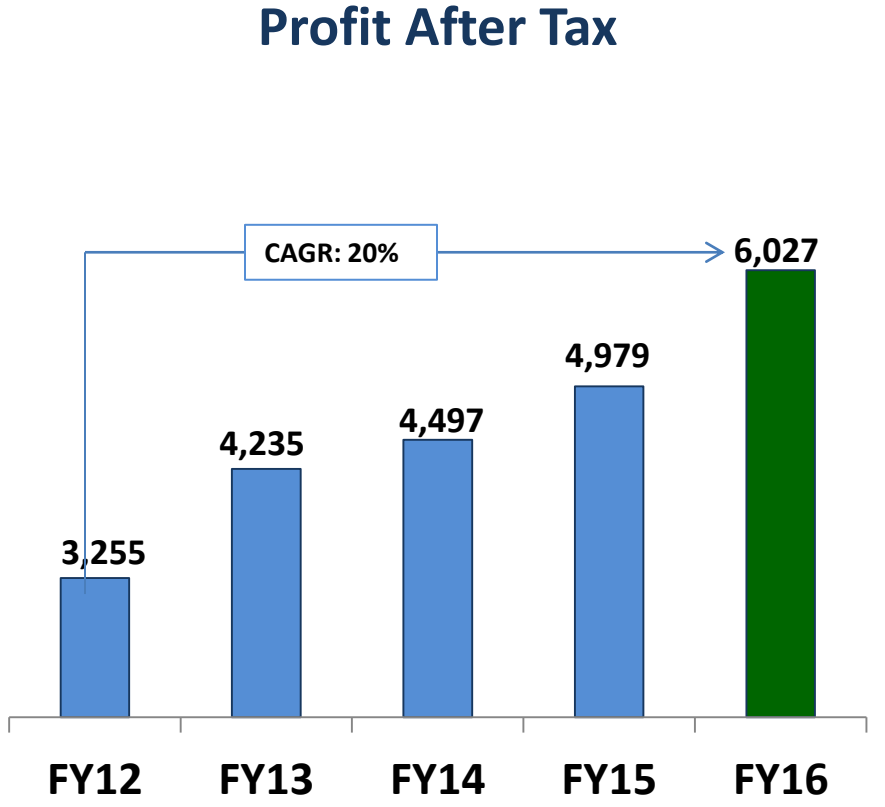
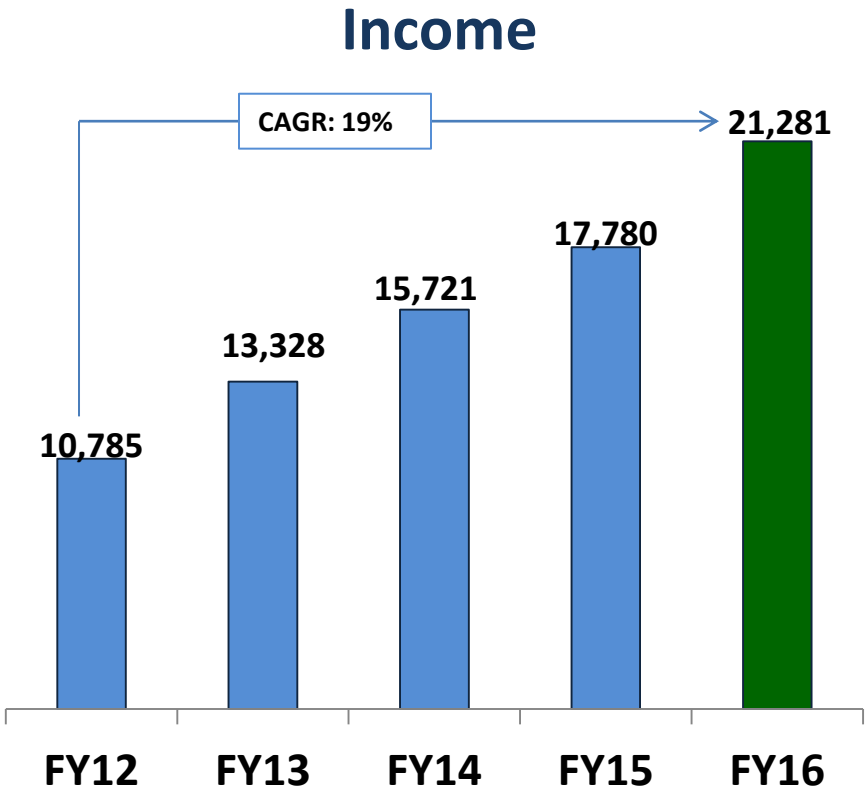
... Consistent increase in ISTS Infrastructure



One of the Largest Trans. Companies Globally

Journey (Last 5 years): Profitability

Asset Based Returns & Sustained Profitability....



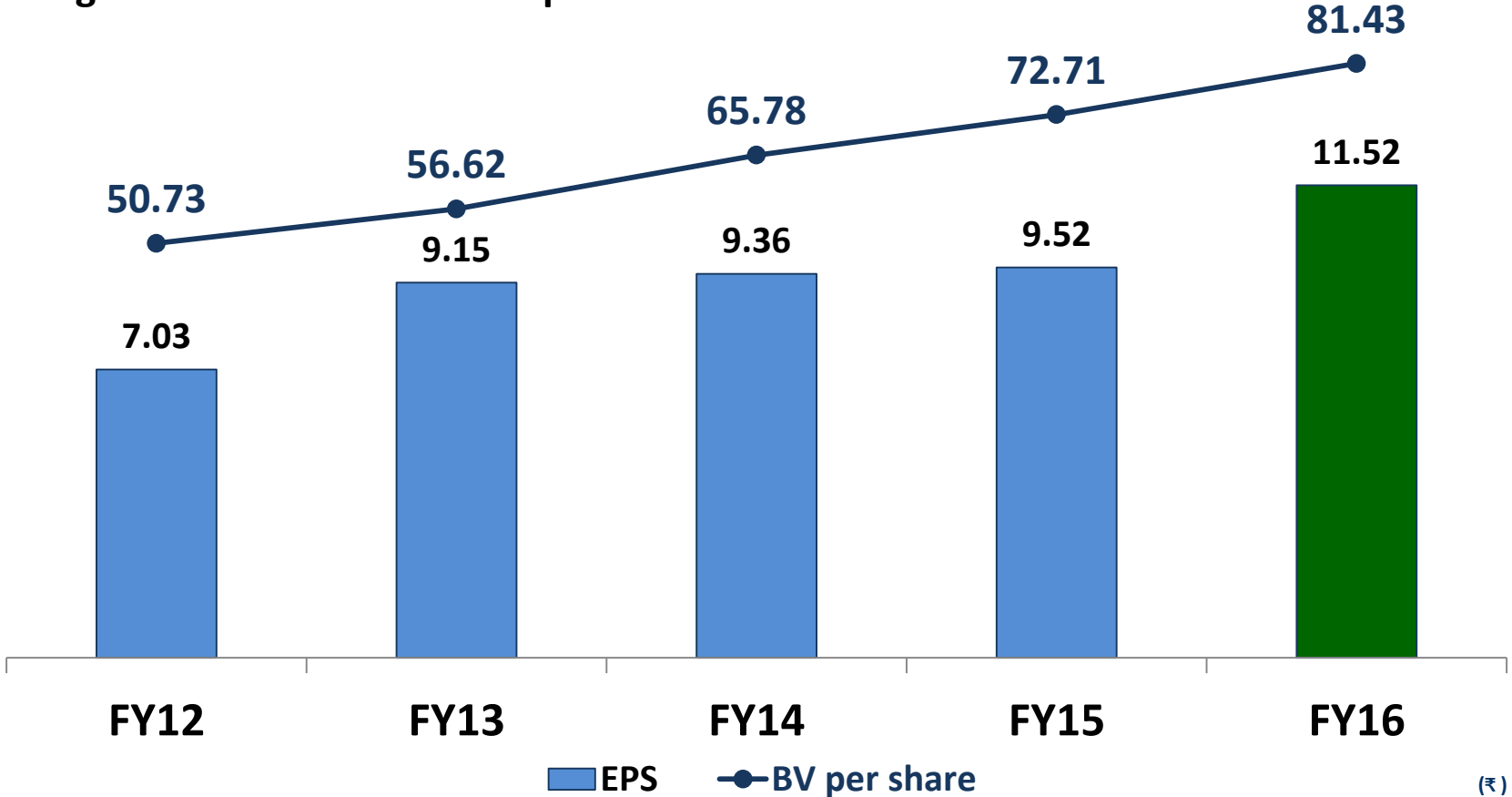
(₹ in crore)

■ FY12 ■ FY13 ■ FY14 ■ FY15 ■ FY16

Journey (Last 5 years): Returns to Stakeholders

.... and enhanced Shareholder returns....

Earning Per Share & Book Value per Share

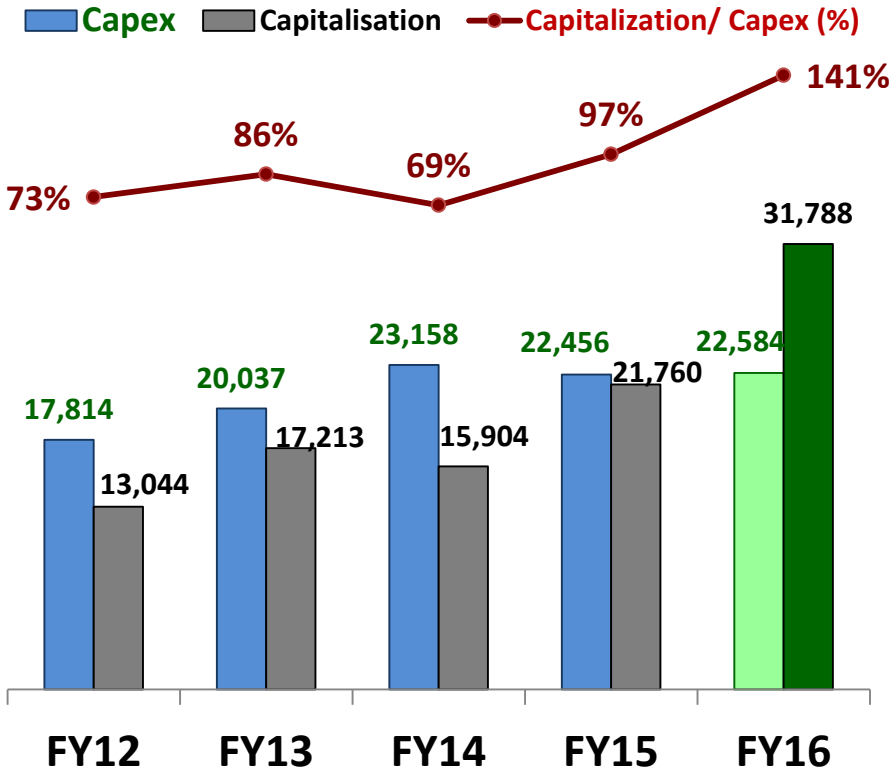


Dividend for FY16: ₹ 2.31 per share (including ₹ 1.51 proposed)

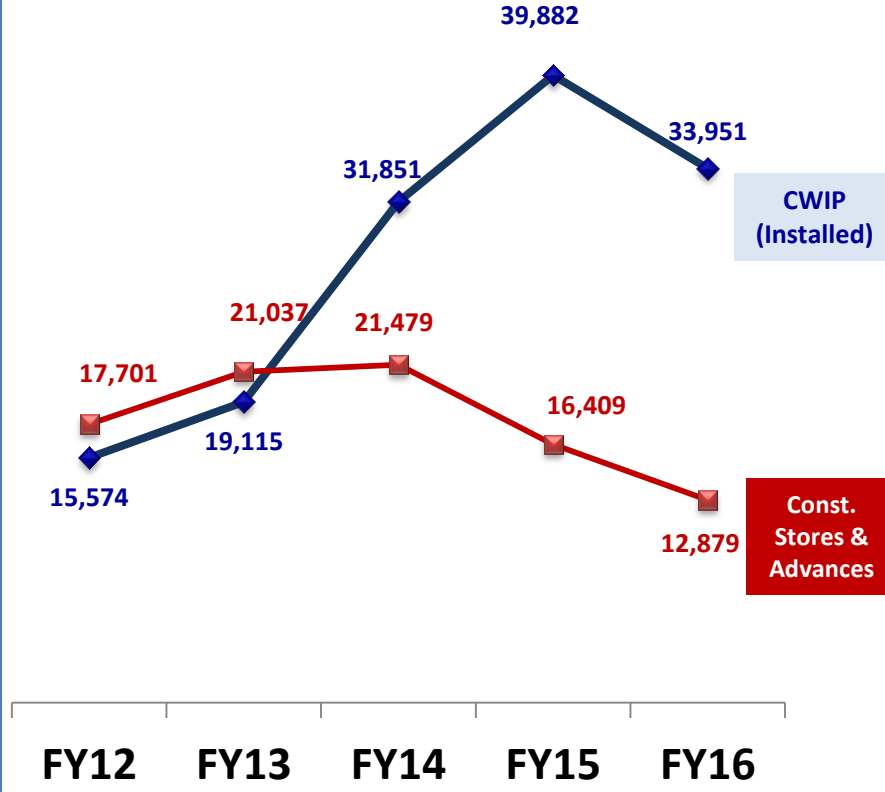
Journey (Last 5 years): Project Efficiency

Increasing Capitalization & Efficient Project Mgmt.

Thrust on Capitalization



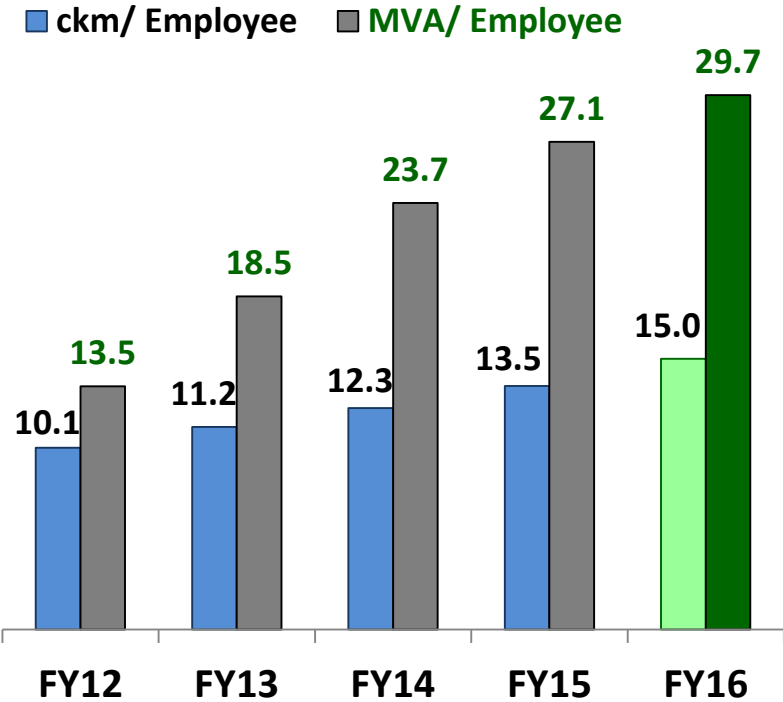
...and CWIP Management



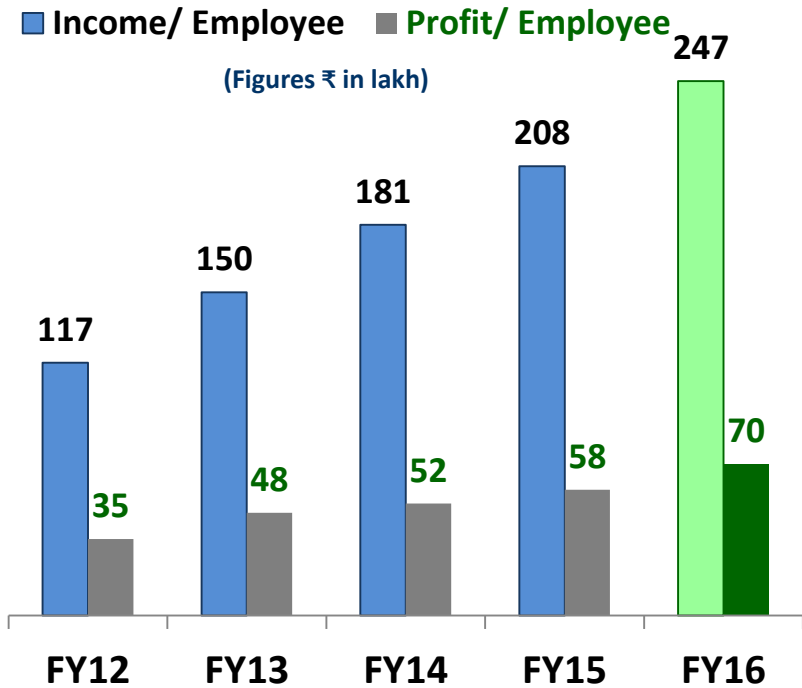
(Figures ₹ in crore)

Journey (Last 5 years): Employee Efficiency

Increased Employee Productivity....



...and Employee Efficiency



Setting new benchmarks, year after year

Performance (FY16)

—

Consultancy Telecom CSR & Sustainability

Income (incl. Intl. Business)
₹ 465 crore (22%↑)

Orders recd.: 27 Nos.
Project Cost of Orders.: ₹ 810 crore

**Major
Orders**

TS for Eastern DFCI;
IPDS Implementation
Line & S/S for East Central Railways

Ongoing Assignments: 115; Project Cost ₹ 14,826 crore (Balance Cost)

Major 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: 18 countries

Orders recd.: 4

Comml. Proposals submitted: 15

EOIs submitted: 19

New countries approached

Major Highlights

- ✓ New Interconnections with Nepal & Bangladesh - accomplished
- ✓ Doshi & Charikar Sub-stations & associated lines in Afghanistan - completed
- ✓ Management Contract in Ethiopia - successfully completed

Major Ongoing Assignments

Ongoing Assignments: 13 Nos.

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

Performance (FY16): Telecom

Income:
₹ 392 crore (43%↑)

79 New Clients added
[[Pvt. (42), Govt(37)]]

Total Order Book
> ₹ 2100 crore

- Services provided: Dedicated Leased Lines, Internet, MPLS-VPN, Dark Fiber
- Clientele: Telcos, Govt. Deptts., PSUs & Private Cos. , IT Cos.

➤ Infrastructure:

- **Fiber Optic Network** : ~ 36,500km (~3,300 km added in FY16)
- **Points of Presence** : 595 (233 Nos. added in FY16)
- **Backbone Availability** : 100%

➤ Major Projects:

- **National Knowledge Network (NKN):** Project completed & Under Operation
- **National Optic Fiber Network (NOFN):** Work for 7,175 Gram Panchayats under progress - 4,120 Gram Panchayats connected

Performance (FY16): CSR & Sustainability

Major Thrust Areas for CSR

Rural
Development

Skill
Development

Education

Health

Environment

Major CSR Projects undertaken in FY16

- Construction of ~9,500 toilets in ~4,250 schools in 7 States under 'Swachh Bharat Mission' of GoI
- Skill Development to more than 2000 youth
- Installation of Hand Pumps, Borewells & Solar Street Lights in villages
- Supply of Solar lanterns to 10,000 students in villages
- Scholarships to ~ 5,500 Students
- Supply of Aids and appliances to ~ 2000 persons with disabilities

Sustainability

- 50kWp Solar PV System commissioned at POWERGRID Corporate Center, Gurgaon
- POWERGRID Regional Hq. at Bengaluru – Green Building award from HUDCO
- Solar Plants & LED lights in new S/S Control Rooms
- Rain Water Harvesting in S/S
- 3rd Sustainability Report (A⁺ Rating) - Released

Projects Targeted for FY17 & Status of TBCB Projects

Projects in FY17

Transmission Lines

15,000 GW-ckm



Major Lines

- **Gaya-Varanasi**, Varanasi-Kanpur-Jhatikara
- Pachkula-Patiala; Sikar-Jaipur
- Aurangabad-Boisar; Navsari-Boisar; Kala-Kudus
- Raipur PS - Wardha(2nd line), Wardha-Aurangabad
- Dehradun-Baghat, Roorkee-Saharanpur, Dehradun-Abdullapur
- Pasighat – Roing – Tezu - Namsai
- 800kV Champa-Kurukshetra HVDC
- Aurangabad-Padghe
- Mauda-Betul-Khandwa-Indore
- Wardha-Aurangabad (1200kV tower)
- Ranchi-Chandwa-Gaya
- Tiurnelveli-Tuticorin; Tuticorin-Salem-Madhugiri; Salem-Somnahalli; Madhugiri-Yelhanka
- Jabalpur-Orai-Aligarh
- Wardha-Nizamabad-Hyderabad
- Angul-Srikakulam;
- Dulhasti-Kishenpur-New Wanpoh
- Rajarhat-Purnea
- Singrauli-Allahabad-Kanpur; Lucknow-Kanpur
- LILOs- Pandiabil (Baripada-Mendhasal); Navi Mumbai (Lonikhand-Kalwa); NP Kunta (Kadapa-Kolar; Kadapa-Hindupur)

Sub-Stations

20 Nos.



Sub-stations

- **NP Kunta**
- Salem (Dharmapuri)
- Navi Mumbai (GIS)
- Kanpur (GIS)
- Pandiabil (GIS)
- Rajarhat (GIS)
- Saharanpur
- Bagpat (GIS)
- Dehradun
- Betul (GIS)
- Chandwa (GIS)
- Vemagiri (GIS)
- Srikakulam (GIS)
- Nizamabad
- Roing
- Tezu
- Namsai
- Alipurduar HVDC
- Champa HVDC
- Kurukshetra HVDC

Initially envisaged as part of HVDC

Inter-Regional Capacity

12,300 MW



Inter-Regional

- **Gaya-Varanasi**
- Champa-Kurukshetra
- Angul-Srikakulam
- Wardha-Nizamabad
- Biswanath-Chariyali - Agra Pole-II
- Alipurduar – Agra

Green font indicates assets commissioned in FY17

Status of TBCB Projects (upto Mar'16)

Participation
23 Projects



Success
9 (39%)



Cost-wise
[Annual Levelised Tr. Charges]
₹ 1643 crore (47%)

SPV & Date of Incorporation	Completion	ALTC (₹ in cr.)	Current Status
POWERGRID NM Trans. Ltd. (Mar-12)	Oct-16	99	Construction under Progress
POWERGRID Vizag Trans. Ltd. (Aug-13)	Aug-16	231	1st element commissioned in Dec-15. Construction under Progress
POWERGRID Unchahar Trans. Ltd. (Mar-14)	Sep-16	17	Construction under Progress
POWERGRID Kala Amb Trans. Ltd. (May-14)	Jul-17	59	Construction under Progress
POWERGRID Jabalpur Trans. Ltd. (Feb-15)	Jul-18	211	Construction under Progress
POWERGRID Warora Trans. Ltd. (Apr-15)	Nov-17	290	Construction under Progress
POWERGRID Parli Trans. Ltd. (Apr-15)	Jan-18	257	Construction under Progress
POWERGRID Southern I/C Trans. Ltd. (Dec-15)	Apr-19	359	Construction under Progress
POWERGRID Vemagiri Trans. Ltd. (Apr-12)	---	120	Project discontinued

[ALTC: Annual Levelised Trans. Charges]

Outlook, Investment Programme & Way Forward

Capacity addition for Apr17-Mar22 period

- **Generation initially envisaged for the period 'Apr17 to Mar22' (i.e. FY18-FY22)**
 - 86 GW (conventional)
 - 30 GW (Renewables)
- **Reworking of Generation & Trans. Plan – under process by GoI**

Power Sector Outlook (contd.)

For Renewables: Revised Target 175GW by 2022

Solar- 100 GW

Wind- 60 GW

Others- 15 GW

Solar: 100 GW

- Ultra Mega Solar Parks: 20 GW
- Rooftop: 40 GW
- Distributed: 40 GW

Solar Capacity Addn.- Year wise Targets

- Upto FY16: 6.7 GW (Actual as on 31.3.16)
- FY17: 12 GW
- FY18: 15 GW
- FY19: 16 GW
- FY20: 17 GW
- FY21& FY22: 17.5 GW each

Driving Forces

Thrust on Renewables

24x7 Power for All

Sector Reforms like UDAY

Ongoing Projects	approx. ₹ 94,000 crore
New Projects	approx. ₹ 34,000 crore
TBCB Projects	approx. ₹ 16,000 crore (as per Empowered Committee Estimate)

Total Works in Hand: ₹ 1,44,000 crore
(approx.)

Planned Investment (Apr12-Mar17)

Planned Capital
Outlay*

₹110,000
crore

Annual Capex Plan

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

FY12-13:
₹20,037 cr.
(Achieved)

FY13-14:
₹23,158 cr.
(Achieved)

FY14-15:
₹ 22,456 cr.
(Achieved)

FY15-16:
₹ 22,584 cr.
(Achieved)

FY16-17:
₹22,550 cr.

More than ₹ 88,200 crore achieved in first 4 years of XII Plan

Contracts
awarded

- Cumulative since Apr'12 to Mar'16: ~ ₹ 71,500 crore including
✓ ~ ₹ 22,600 crore in FY16

Investments
Approved

- Cumulative since Apr'12 to Mar'16: ~ ₹ 58,850 crore including
✓ Projects worth ~ ₹ 13,200 crore in FY16

Way Forward

Strengthening the Core Transmission Business through

- ✓ Capital Efficiency
- ✓ Operational Efficiency
- ✓ Process Innovation

Tapping Opportunities in International Transmission Business through

- ✓ Consultancy
- ✓ EPC
- ✓ Asset Ownership (subsequently)

Increasing Telecom Business by

- ✓ Leveraging tower infrastructure
- ✓ Deploying 100G technology for future

Major Recognitions

Fastest Growing Electric Utility in Asia for 2nd successive year

Only Indian PSU in the Platts Top50 Fastest Growing Energy Companies 2015

- *Source: Platts Top 250 Energy Company Rankings 2014 & 2015*

POWERGRID – Only Indian Company among ‘One of the Best Three Asian Companies which host most constructive Analyst Days that professionals find most beneficial’

- *Source: Institutional Investor Award: The 2015 All-Asia Best Analyst Day*

4th Largest CPSE in terms of Gross Block for 2014-15

(An improvement to previous year)

- *Source: PSE Survey for 2014-15 released by DPE, GoI*

Thank You

Presentation available at www.powergridindia.com