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- Annual Accounts for FY2015-16 have been approved by the shareholders.
Recent Highlights

Power Transmission Opportunities in India

POWERGRID Today

Performance (Q3FY17)  - Transmission

Performance (Q3FY17)  - Consultancy
- Telecom

XII Plan Performance

Investment Outlook
Recent Highlights
±800kV HVDC Champa-Kurukshetra Pole-I

Power Flow Test Charged – Commissioning targeted in Feb’17

- **Power Transfer: 3000MW**
  - Between Champa in WR and Kurukshetra in NR

- **Being implemented in Phases**
  - Phase-I, Pole-I: 1500 MW (~₹ 6,000 crore)
  - Phase-I, Pole-II: 1500 MW (~₹ 3,200 crore)

- **Line Length:** ~ 1,300 km.

- **Upgrade to 6000MW in Phase-II**

- **Largest 400/200 kV GIS in India:** 51 bays
-400/+600MVAr SVC - Commissioned at Ludhiana

- One of the Largest Range Swing SVCs in the World
- Envisaged to improves Power Quality & Grid Stability
- Project included a high degree of local engineering & local production (Make-in-India)
  ✓ Thyristor Valves, Protection & Control Systems manufactured and tested locally in India
Project Execution

Major Elements Completed since Oct’16

- **ER-SR Interconnection**
  - Angul-Srikakulam-Vemagiri

- **Strengthening in SR**
  - Nagapattinam PS – Salem – Dharmapuri; Tuticorin-Dharmapuri

- **Strengthening in Western UP**
  - Dehradun-Baghpat-Saharanpur; Dehradun-Roorkee
Commissioning/ Capitalization

Completed/ Commissioned in FY17 (Apr’16-Jan’17)

✓ ~ ₹ 26,700 crore:
  ▪ Completed (including Champa-Kurukshetra HVDC & TBCB)

✓ ~ ₹ 20,700 crore:
  ▪ Commissioned/ Capitalized (incl. TBCB)
Special Highlight

POWERGRID Market Capitalization crosses ₹ 1 lakh crore

POWERGRID Stock crosses ₹ 200 mark

Snapshot: BSE 01.02.17
Power Transmission Opportunities in India
Glimpse of Indian Power System

**Total Installed Capacity**
~ 310 GW
CAGR (Mar12-Dec16): 9.7%

**Annual Consumption**
1200 BU
Growth: 5.64% (y-o-y)

**Peak Demand Met**
157 GW

**Power Market**
9-10%

**Capacity (GW): Source-wise Segmentation (%)**

- **Coal, 189, 61%**
- **Hydro, 43, 14%**
- **Gas, 25, 8%**
- **Nuclear, 6, 2%**
- **Wind, 28, 9%**
- **RES, 46, 15%**
- **Solar, 9, 3%**
- **Biomass, 5, 2%**
- **Small Hyd, 4, 1%**

As on Dec 2016, CEA Reports
Indian Power System - Changing Paradigm

Renewable: 46 GW  CAGR (Mar12-Dec16): 14.1%

### RE Installed Capacity (GW)

- **Wind**
  - Mar'12: 17.4
  - Mar'13: 19.2
  - Mar'14: 21.1
  - Mar'15: 22.8
  - Mar'16: 26.9
  - FY22: 60.0

- **Solar**
  - Mar'12: 0.9
  - Mar'13: 1.7
  - Mar'14: 2.6
  - Mar'15: 3.4
  - Mar'16: 6.8
  - FY22: 100.0

- **Total RE**
  - Mar'12: 25.0
  - Mar'13: 28.1
  - Mar'14: 31.7
  - Mar'15: 34.2
  - Mar'16: 42.6
  - FY22: 175.0

### RE/Total Installed Capacity (%)

- **Wind**
  - Mar'12: 12.5%
  - Mar'13: 12.6%
  - Mar'14: 12.9%
  - Mar'15: 12.6%
  - Mar'16: 14.1%
  - FY22: 32.7%

- **Solar**
  - Mar'12: 8.7%
  - Mar'13: 8.5%
  - Mar'14: 8.6%
  - Mar'15: 8.3%
  - Mar'16: 8.9%
  - FY22: 18.7%

- **Total RE**
  - Mar'12: 11.2%
  - Mar'13: 12.5%
  - Mar'14: 12.6%
  - Mar'15: 12.9%
  - Mar'16: 14.1%
  - FY22: 11.2%
Indian Power Sector - Outlook

- 24x7 Affordable Power for All by 2019

- Renewable Integration: 175 GW by 2022

- Per Capita Consumption: about 4000 units by 2030; CAGR: 10%

- Seamless SAARC Power Grid
Towards 24x7 Power For All by 2019

One Nation – One Grid – One Price

Vidyut PRAVAH

Snapshot

Power Market
Bringing Efficiency Into the Sector

Movement of Weighted Average Prices

Through Traders
Power Exchange (IXE)
Deviation Price

National Grid Synchronized from Jan'14

Source: CERC BBIC Data

20 Dec'16 at 9:45 pm
National Grid Augmentation

- Creation of Energy Highways based on envisaged load growth
  - 11 high capacity corridors - each capacity of about 4000 MW
  - 3 high capacity HVDC system (6000 MW each)

- Wide Area Measurement System (WAMS)
  - Making Smart Grid

11 nos. High Capacity Transmission Corridors
Renewable Integration

**Challenges**
- Intermittency
- Variability
- Matching Transmission Development
- Load- Generation balance

**Remedial Measures**
- Green Energy Corridors
- Green Energy Corridors-II (Solar Park Integration)
- Dynamic Compensation
- Renewable Energy Management Centres
- Storage

Renewables involves Integration i.e. bringing together separate elements to create a whole unit.
Development of Green Energy Corridors

Green Energy Corridors for Renewables (Inter-State Transmission Systems)
Green Energy Corridors-II: Solar Parks Integration

34 Solar Parks   20 GW

- **Inter-State transmission**
  - 13 solar parks
  - ~ 9,220 MW capacity

- **Intra-State transmission**
  - 21 solar parks
  - ~ 10,780 MW capacity
Dynamic Compensation

• Maintaining Grid Parameters

• Hybrid STATCOMs
  - 14 Nos.
  - 400 – 600 MVAR

• SVCs
  - 4 Nos.
  - 500 - 1000 MVAR
Renewable Energy Management Center

11 no. of REMC: 7 States + 3 Regions + 1 National level

- Co-located with RLDC/SLDC
- RE Forecasting & Scheduling
- Real Time tracking of RE Generation
SAARC Interconnections

- Geographically widely spread Indian Grid can facilitate interconnections with Neighboring countries
- India can provide a good demand market to harness energy resources of other countries
- Optimal utilization of energy resources
Investment Envisaged:

- ~ ₹ 2,60,000 cr.
  (includes ₹ 30,000 crore for investments in Trans. Systems below 220kV levels)

Physical Additions Planned:

- 106,000 ckm of Transmission lines
- 292,000 MVA Transformation Capacity
- 14,000 MW HVDC Bipole line

POWERGRID Today
>90% ISTS Transmission Network owned by POWERGRID

POWERGRID’s Transmission Assets:
- Trans. Lines: 134,750 ckm
- Sub-stations: 217 Nos. - 280,362 MVA
- Availability: 99.76% (Apr16-Dec16)

>45% power generated in India transmitted through POWERGRID

POSOCO, POWERGRID’s wholly owned subsidiary, hived off into a separate independent company, as per Govt. directives

Market Capitalization\(^1\): ₹ 1,08,059 crore

Physical parameters as on 31st January, 2017

1- Based on BSE Closing Price of ₹ 206.55 per share on 31.01.2017
Performance in FY17 (Q3 & 9 months) - Transmission
# Performance - Financial (Q3 & 9mths FY17)

## Description

<table>
<thead>
<tr>
<th>Description</th>
<th>Quarter ended</th>
<th></th>
<th>Nine Months ended</th>
<th></th>
<th>% change</th>
<th>% change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Transmission Charges</td>
<td>5,153</td>
<td>6,336</td>
<td>23%</td>
<td>14,335</td>
<td>18,196</td>
<td>27%</td>
</tr>
<tr>
<td>- Consultancy Income: Services</td>
<td>114</td>
<td>164</td>
<td>44%</td>
<td>302</td>
<td>438</td>
<td>45%</td>
</tr>
<tr>
<td>- Telecom</td>
<td>103</td>
<td>130</td>
<td>26%</td>
<td>288</td>
<td>371</td>
<td>29%</td>
</tr>
<tr>
<td>- Other Income</td>
<td>107</td>
<td>158</td>
<td></td>
<td>334</td>
<td>522</td>
<td></td>
</tr>
<tr>
<td><strong>Total Income</strong></td>
<td><strong>5,477</strong></td>
<td><strong>6,788</strong></td>
<td><strong>24%</strong></td>
<td><strong>15,259</strong></td>
<td><strong>19,527</strong></td>
<td><strong>28%</strong></td>
</tr>
<tr>
<td>Operating Expenses</td>
<td>583</td>
<td>679</td>
<td></td>
<td>1,696</td>
<td>2,035</td>
<td></td>
</tr>
<tr>
<td>EBITDA-Gross Margin</td>
<td>4,894</td>
<td>6,109</td>
<td></td>
<td>13,563</td>
<td>17,492</td>
<td></td>
</tr>
<tr>
<td>Depreciation</td>
<td>1,585</td>
<td>1,965</td>
<td></td>
<td>4,411</td>
<td>5,599</td>
<td></td>
</tr>
<tr>
<td>Finance Cost</td>
<td>1,288</td>
<td>1,643</td>
<td></td>
<td>3,615</td>
<td>4,748</td>
<td></td>
</tr>
<tr>
<td>Tax</td>
<td>415</td>
<td>571</td>
<td></td>
<td>1157</td>
<td>1541</td>
<td></td>
</tr>
<tr>
<td><strong>Profit after Tax</strong></td>
<td>1,606</td>
<td>1,930</td>
<td><strong>20%</strong></td>
<td>4,380</td>
<td>5,604</td>
<td><strong>28%</strong></td>
</tr>
<tr>
<td>Other Comprehensive Income/ (Exp) – net of Tax</td>
<td>10</td>
<td>(30)</td>
<td>(12)</td>
<td>(14)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total Comprehensive Income</strong></td>
<td><strong>1,616</strong></td>
<td><strong>1,900</strong></td>
<td><strong>28%</strong></td>
<td><strong>4,368</strong></td>
<td><strong>5,590</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>As on 30.09.2016 As per Ind AS</td>
<td>As on 31.12.2016 As per Ind AS</td>
<td>As on 31.12.2015 As per Ind AS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>--------------------------------</td>
<td>--------------------------------</td>
<td>--------------------------------</td>
<td>--------------------------------</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gross Fixed Assets</td>
<td>1,58,937</td>
<td>1,65,757</td>
<td>1,44,795</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Capital Work-in-Progress</td>
<td>46,335</td>
<td>45,991</td>
<td>46,000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Debt</td>
<td>1,12,284</td>
<td>1,15,924</td>
<td>1,05,387</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Net Worth</td>
<td>46,391</td>
<td>48,290</td>
<td>42,598</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Earning Per Share (₹)</td>
<td>7.02#</td>
<td>10.71#</td>
<td>8.37#</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Book Value per Share (₹)</td>
<td>88.67</td>
<td>92.31</td>
<td>81.43</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Key Financial Ratios</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Debt : Equity</td>
<td>71:29</td>
<td>71:29</td>
<td>71:29</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Return on Net Worth</td>
<td>7.92%#</td>
<td>11.60%#</td>
<td>10.28%#</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

# Not Annualized
Performance - Financial (Billing & Realization)

As on 31.12.2016

Total Outstanding

~ ₹ 3,749 crore
(53 days billing#)

Transmission Outstanding
(beyond 60 days)

~ ₹ 792 crore
(11 days billing#)

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

~ ₹ 2,958 crore
(42 days billing#)

# Avg. Monthly Billing: ₹ 2,126  => 2 months 60 days) billing = ₹ 4,252 crore

Tripartite Agreement signed by 12 States; Others in Progress
Performance: Projects - Q3 & 9mths FY17

Investment Approvals

<table>
<thead>
<tr>
<th></th>
<th>FY16 (Apr-Dec)</th>
<th>FY17 (Apr-Dec)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Approvals</td>
<td>9,490</td>
<td>28,133</td>
</tr>
<tr>
<td>Contracts Awarded</td>
<td>13,465</td>
<td>21,942</td>
</tr>
</tbody>
</table>

Capitalization

<table>
<thead>
<tr>
<th></th>
<th>Q1FY17</th>
<th>Q2FY17</th>
<th>Q3FY17</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,462</td>
<td>6,688</td>
<td>6,820</td>
<td>15,970</td>
<td></td>
</tr>
</tbody>
</table>

Capex

<table>
<thead>
<tr>
<th></th>
<th>Q1FY17</th>
<th>Q2FY17</th>
<th>Q3FY17</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>5,585</td>
<td>5,291</td>
<td>5,170</td>
<td>16,046</td>
<td></td>
</tr>
</tbody>
</table>

Till Jan’17

~ ₹ 20,700 cr. (*) (Commissioning)
~ ₹ 17,908 cr.

(*) excluding Champa-Kurukshetra ±800kV HVDC

Investment Approval in FY17 till date: ₹ 34,809 crore
Performance - Physical

**Apr-Dec16 (9mths)**

- **Tr. Line:** ~ 4,650 ckm
- **S/S:** 7 Nos.; ~24,000 MVA
- **Inter-Regional Capacity:** 3,600MW

**Targeted for Q4FY17**

- **Tr. Line:** ~ 4,750 ckm
- **S/S:** 7 Nos.; 14,000 MVA
- **Inter-Regional Capacity:** 11,400MW
### Performance- Operations: FY17 (till Dec-16)

<table>
<thead>
<tr>
<th>Assets (Dec’16)</th>
<th>Trans. Lines:</th>
<th>Sub-stations:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1062 Nos.</td>
<td>214 Nos.</td>
</tr>
<tr>
<td></td>
<td>~ 134,000 ckm</td>
<td>~ 278,860 MVA</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Performance (Apr-Dec’16)</th>
<th>Availability: 99.76%</th>
<th>Reliability: 0.57*</th>
</tr>
</thead>
</table>

* Trippings per line
Performance (Q3FY17) - Consultancy & Telecom
Consultancy – Q3FY17

Overall Consultancy Income ↑ 44% (over Q3FY16)

New Orders in Q3FY17

- Domestic: 8 Nos. (Project Cost: ~ ₹ 1300 crore)
- International: 3 Nos. (Project Cost: ~USD 3.3 mn)

Assignments in Hand (Dec’16)

- Domestic: 105 Nos. (~₹ 16,700 crore)
- International: 17 Nos.
Telecom – Q3FY17

Increase in Income
26% w.r.t Q3FY16

- **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 Backbone (NOFN):** Work in progress
    - Scope of work enhanced to connect 9,372 Gram Panchayats - 5,447 Gram Panchayats connected
XII Plan Performance
**XII Plan Performance**

**Planned Capital Outlay**
- ₹ 110,000 crore

**Annual Capex Plan**
- 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. [Achieved ₹ 17,908 cr.]

~ ₹ 106,143 crore achieved in XII Plan (Apr12 till Jan17)

**Physical Parameters (Apr12-Jan17)**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Target</th>
<th>Achievement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transmission Lines</td>
<td>40,000 ckm</td>
<td>41,769 ckm (104%)</td>
</tr>
<tr>
<td>Sub-stations</td>
<td>60 Nos.</td>
<td>67 Nos. (112%)</td>
</tr>
<tr>
<td>X-formation Capacity</td>
<td>100,000 MVA</td>
<td>155,837 MVA (155%)</td>
</tr>
</tbody>
</table>
Investment Outlook
## POWERGRID Outlook (as on Dec’16)

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ongoing Projects</td>
<td>₹ 1,10,000 crore</td>
</tr>
<tr>
<td>New Projects</td>
<td>₹ 13,000 crore</td>
</tr>
<tr>
<td>TBCB Projects</td>
<td>₹ 16,000 crore</td>
</tr>
</tbody>
</table>

(as per Empowered Committee Estimate)

**Total Works in Hand**: ₹ 1,39,000 crore
## Investment Potential

**Transmission (TBCB)** - under various stages of bidding

<table>
<thead>
<tr>
<th></th>
<th>Inter-State: ₹ 8,697 crore - 7 projects</th>
<th>Intra-State: ₹ 5,265 crore - 10 projects in 4 States</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>₹ 14,000 crore</td>
<td></td>
</tr>
</tbody>
</table>

### Thrust of Railways on upgradation and modernisation:

- **Railways’ Target to achieve electrification of 90% tracks in next 5 years from current levels (<50%)**
  - 24,000 rkm to electrified by 2021
    - (Target: 2000 in FY17; 4000 in FY18, 6000 annually during FY19-FY21)
- **POWERGRID already implementing a pilot for 761 rkm**
Thank You