

## Government initiatives to make Indian Power infrastructure cost effective

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Power or electricity is one of the key enablers for the country's economic development and wellbeing of the people at large. Thus, growth of power sector becomes necessity for sustainable economic growth. India is the fifth largest producer of electricity in the world. At an electricity-GDP elasticity ratio of 0.8, electricity will continue to remain a key input for India's economic growth. Moreover, the economy is bound to propagate and the demand for energy will certainly rise, with the help of certainty in policy-level interventions.

### Industry

FY16 turned out to be a very decent year for the power sector where India garnered 6.53% year-on-year (y-o-y) growth in power generation at 92128.73 Gigawatt Hours (GWH), supported by a healthy growth in thermal power stations. The thermal power generation stood at 82834.93 GWH in January 2016 and the plant load factor (PLF) of thermal power stations slipped to 63.23 percent from 64.79 percent a year ago.

### Power generation

Actual power generation during April-June 2016 stood at 296574.20 GWH, showing a growth of 9.03% over the corresponding period previous year of 272004.36 GWH. The sector has achieved 102.49 percent of its total target of 289370.00 GWH for April-June 2016, supported by a healthy performance by thermal power, whose generation grew by 13.38 per cent y-o-y, generating 255674.99 GWH in Q1 FY17 and surpassing the quarterly generation target of 245667.00 GWH. The PLF of thermal power stations increased to 63.56 percent from 62.18 percent a year ago. Hydro power generation fell by 11.36 percent to 30831.29 GWH in first quarter of FY17 as compared to 34785.45 GWH in corresponding quarter previous year. Hydro power stations managed to achieve 95.38 percent of the quarterly generation target of 32326.00 GWH. Nuclear power generation decreased by 12.60 per cent y-o-y in during Q1. As against the monthly generation target of 10364.00 GWH, atomic power stations generated 9100.79 GWH. The PLF of nuclear power stations also fell to 72.09 per cent from 82.48 per cent in April-June 2016.

Of total, Western region generated the maximum power of 105715.96 GWH, followed by Northern region (78689.79 GWH), Southern region (59779.07 GWH), Eastern region (47746.66 GWH) and North Eastern region (3675.59 GWH).

### Generation capacity addition

The generation capacity addition during April-June FY17 was 304505.75 MW against 274817.94 MW in corresponding quarter previous year, up by 10.80%. Out of total generation capacity added April-June FY17, contribution of the thermal sector was significant i.e 211640.40 MW (69.50% of the total), followed by RES with 44236.92 MW (14.53% of total) (RES include Small Hydro Project (SHP), Biomass Power (BP), Urban & Industrial Waste Power (U&I), Solar and Wind Energy) and Hydro power with 42848.43 MW (14.07% of total). Of total, private companies added the maximum generated capacity with 126383.06 MW, followed by state government (101825.93 MW) and Central government (76296.76 MW). Region-wise, the maximum generation capacity were added in Western region i.e. 108088.91 MW, followed by

79912.58 MW in Northern region and 77281.71 MW in Southern region. Moreover, capacity of 35621.38 MW and 3550.02 MW were added in Eastern and North Eastern regions respectively.

India's 35.50 per cent of power capacity is in western region followed by 26.24 per cent in northern region, 25.38 per cent in southern region, 11.70 per cent in eastern region and only 1.19 per cent in north-eastern and island regions. Western region leads in thermal power and northern region in hydro with 83188.42 MW and 18311.78 MW respectively. Southern region leads in Renewable Energy Sources (RES), with over 43 per cent share in all-India aggregate, followed by western region (35.29 per cent) and northern region (19.86 per cent).

### **Transmission**

Consequent to various steps taken by the Government of expediting forest clearances and intensive monitoring of critical transmission lines, 5743 circuit kilometers (ckm) of transmission lines have been commissioned during the period April-June 2016 against 4985 ckm commissioned during the same period previous year, a growth of 15.21%. This is 24.56% of the annual target of 23384 ckm fixed for 2016-17. Of total, 2325 ckm of transmission lines have been commissioned by Central sector and 2327 ckm by State sector, while 1091 ckm by JV/Private sector.

### **Power deficit levels continue to decline**

The energy deficit at all India level is declining year-on-year, owing to improved energy availability. In FY16, power requirement increased 4.24 per cent to 1114235 million units (MU) from 1068923 MU in FY15. Similarly, availability of power increased by 5.81 per cent to 1090713 MU in FY16 as compared to 1030785 MU in previous year resulting to a power deficit of 23,522 MU. Comparing the present scenario with FY10, the power deficit has declined significantly from 10.1% or a shortage of 83,950 MU to 23,522 MU currently.

Moreover, India for the first time in history is likely to not have a power deficit in FY17. The country will have a surplus of 3.1% during peak hours and 1.1% during non-peak hours during 2016-17. Half of the states will be surplus, while others may face shortage in varying degrees. States in southern India will have surplus power to the tune of 3.3% after being power starved for almost a decade. It suggests that new plants of nearly 2,000 MW are likely to get commissioned in the southern region. Western India will have surplus electricity at 6.9%. Eastern region will have the maximum shortage of 10.3% and northeastern region at 8.3%. The northern states will have a deficit of 1.8% during the year.

### **Higher coal production to benefit thermal power generation**

Coal is the primary fuel for thermal electricity generation and its usage is continuously increasing to meet the energy demands of the country. The constant increase in coal production has helped in increasing thermal power generation since last several years and if the coal output continues to rise in future it will put significant positive impact of thermal power generation. The production of coal has increased by 9 percent to 538.75 million tonnes (MT) in FY16 as compared to 494.24 MT in FY15. This helps thermal power generation to increase 7.52% at 9.44 lakh GWH from 8.78 lakh GWH in FY15. In April-June FY17, the coal production increased 3.5

per cent to 125.65 MT y-o-y, while thermal power generation increased by 13.27 per cent to 2.56 lakh GWH in Q1FY17 as compared to 2.26 lakh GWH in same quarter previous year.

### **FDI in power sector**

The sector attracts almost 4 per cent of the country's total foreign inflows. The industry has attracted foreign direct investment (FDI) worth Rs 1,467.70 crore or \$218.47 million during the January- March 2016, which was way higher than Rs 504.42 crore or \$81.14 million in corresponding quarter previous year, backed by positive investment climate on the back of policy liberalization.

### **Government initiatives**

#### Government launches Smart Grid Projects

Government of India (GOI) has launched National Smart Grid Mission (NSGM), to plan and monitor implementation of policies and programmes related to Smart Grid activities in India. The government incurred an expenditure of Rs 21.73 crore for development of four Smart Grid pilot projects and one Smart City Pilot project during 2015-16. NSGM envisages implementation of Smart Grid projects in the country to make Indian Power infrastructure cost effective, responsive, reliable and self healing. Two smart grid projects for Amravati and Chandigarh have been approved under NSGM, at a cost of Rs 118.63 crore with 30% funding from GoI under NSGM.

#### World's largest renewable energy expansion programme

India is running the world's largest renewable energy expansion programme with a target to increase overall renewable capacity by more than 5 times from 32,000 MW in 2014 to 1,75,000 MW in 2022. By taking a leadership role in the International Solar Alliance of 121 countries and organising RE-Invest 2015, the world's largest renewable financing meet, Indian government has laid the foundations for massive growth in this sector.

### **Recent developments**

#### Power costs may reduce by 50p/unit on coastal movement of coal

Government under its ambitious Sagarmala project has said that Coastal movement of coal could cut power costs by 50 paise per unit for power plants besides saving Rs 17,000 crore annually. Sagarmala is an ambitious port-led infrastructure development programme of the government to harness India's 7,500-km coastline and its perspective plan was launched in April. Using the right infrastructure and institutional support, India can coastally move 190 to 200 million tonne per annum (MTPA) of coal, and save around Rs 17,000 crore per annum, by 2025. In 2013-14, nearly 740 MTPA of coal moved through the country predominantly through rail and of this barely 23 MTPA moved through coastal shipping even though this mode costs one-sixth that of rail cost at about 20 paise per tonne against about Rs 1.2 per tonne.

### Indian, US ink pact to enhance cooperation on energy security

Indian has signed Memorandum of Understanding (MoU) with Government of the United States of America to enhance cooperation on energy security, clean energy and climate change. The objective of the MoU is to enhance cooperation on energy security, clean energy and climate change through increased bilateral engagement and further joint initiatives for promoting sustainable growth. These activities are intended to increase incentives for innovation including research and development, and voluntary and mutually-agreed technology transfer, as well as the deployment of clean energy technologies in both countries; contributing to a global effort to curb the rise in greenhouse gas emissions; and enhance resilience to the impacts of climate change.

### Outlook

India is expected to generate more electricity than required from second half of FY17 and it will become energy surplus country from steady power shortage. Of total, half of the states are expected to generate surplus power, while others may face power shortage at different levels. The country has recorded a significant capacity addition during April-June 2016 quarter as compared to corresponding quarter previous year. Moreover, the energy deficit has declined to lowest ever of 2.1% in FY16 on the back of highest-ever surge in transmission lines. Increasing foreign investment in the sector, on the back of policy liberalization, too will help the sector in meeting soaring demand. Government initiatives like smart grid projects will also help in making the Indian Power infrastructure cost effective and responsive

### Companies Financial Data In Industry

Company Name	CMP	MCAP (Rs Crore)	BOOK VALUE	DIV. YEILD %	TTM EPS	TTM PE
Reliance Infrastructure Ltd.	614.15	16151.53	809.49	1.38	75.51	8.13
CESC Ltd.	674.35	8938.98	595.60	1.48	53.34	12.64
Torrent Power Ltd.	182.05	8749.63	156.10	2.47	13.35	13.63
NTPC Ltd.	159.75	131721.29	110.55	2.10	12.71	12.57
Gujarat Industries Power Company Ltd.	85.90	1299.25	134.92	3.14	12.50	6.87
Power Grid Corp Of India Ltd.	183.40	95947.35	85.13	1.26	12.35	14.85
PTC India Ltd.	84.60	2504.23	96.15	2.96	8.18	10.34
NLC India Ltd.	77.00	12918.36	92.24	3.90	7.18	10.73
Nava Bharat Ventures Ltd.	114.05	2036.65	148.95	1.32	7.00	16.30
JSW Energy Ltd.	76.45	12538.22	51.28	2.62	6.22	12.30
SJVN Ltd.	27.90	11541.19	26.75	3.94	3.40	8.19
BF Utilities Ltd.	612.45	2306.95	21.28	0.00	2.62	233.85
Tata Power Company Ltd.	78.65	21271.91	58.93	1.65	2.50	31.46
NHPC Ltd.	27.95	30942.52	26.75	5.37	2.29	12.23
Veer Energy & Infrastructure Ltd.	21.30	15.15	64.67	28.17	1.71	12.43
Reliance Power Ltd.	51.80	14530.56	58.28	1.93	1.44	36.08
Karma Energy Ltd.	23.50	27.19	37.15	0.00	1.26	18.62
Sinner Energy India Ltd.	40.60	8.24	16.20	0.00	1.09	37.29
Suryachakra Power Corp Ltd.	2.54	38.01	7.03	0.00	0.73	3.48
Adani Power Ltd.	27.20	9295.48	26.45	0.00	0.40	68.62



## Sector Outlook - Power

RattanIndia Power Ltd.	9.65	2849.58	18.58	0.00	0.40	24.42
India Power Corporation Ltd.	34.15	3325.49	10.30	0.15	0.33	104.26
Energy Development Co Ltd.	179.70	853.58	36.56	0.28	0.14	0.00
Indowind Energy Ltd.	4.07	36.52	19.27	0.00	0.11	37.50
Urja Global Ltd.	0.92	46.66	2.40	0.00	0.03	28.23
NEPC India Ltd.	1.44	9.97	5.80	0.00	-0.01	0.00
Entegra Ltd.	3.29	104.34	6.06	0.00	-0.15	0.00
Sun Source (India) Ltd.	1.84	2.65	7.40	0.00	-0.32	0.00
Adani Transmission Ltd.	39.15	4305.76	20.09	0.00	-0.50	0.00
SE Power Ltd.	6.75	27.41	9.86	0.00	-0.66	0.00
Gita Renewable Energy Ltd.	15.15	6.23	60.29	0.00	-0.99	0.00
GVK Power & Infrastructure Ltd.	6.36	1004.38	13.73	0.00	-1.10	0.00
KSK Energy Ventures Ltd.	29.95	1269.84	71.02	0.00	-1.31	0.00
Jaiprakash Power Ventures Ltd.	4.87	1430.81	25.09	0.00	-1.38	0.00
Orient Green Power Co Ltd.	9.86	729.44	12.86	0.00	-2.31	0.00

Sorted with TTM EPS (High to Low)

Source – Ace Equity

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