

Power or electricity is one of the key enablers for the country's economic development. Therefore it is necessary that power sector needs to grow for sustainable 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. Besides, human developmental aspects like poverty reduction, employment generation, etc. are also considerably dependent on secure energy supply. Indian power sector is a major consumer of energy and it has a significant impact on economic developments and social welfare. For power generation the Indian power sector sources ranging from conventional sources such as coal, lignite, natural gas, oil, hydro and nuclear power to other viable non-conventional sources such as wind, solar, and agriculture and domestic waste.

## **Power Generation**

Power generation during January 2016 stood at 92128.73 Gigawatt Hours (GWH), showing a growth rate of 6.53% over the corresponding period previous year of 86479.52 GWH. The sector has achieved 94.73 percent of its total target of 97253.00 GWH for January 2016. A healthy performance by thermal power stations helped the country in reporting over six and a half percent growth in total power generation. Thermal power generation grew by 8.78 per cent year-on-year (y-o-y), generating 82834.93 GWH in January 2016. Thermal power stations, however, could not meet the monthly generation target of 86089.00 GWH. The plant load factor (PLF) of thermal power stations slipped to 63.23 percent from 64.79 percent a year ago.

Hydro power generation fell by 12.79 percent to 6159.08 GWH in January 2016. This was the fifth consecutive month of a y-o-y decline in generation. Hydro power stations managed to achieve 83.75 percent of the monthly generation target of 7354.00 GWH. Nuclear power generation decreased by 4.81 per cent y-o-y in during the month. As against the monthly generation target of 3654.00 GWH, atomic power stations generated 3056.56 GWH. The PLF of nuclear power stations also fell to 71.08 percent from 74.67 percent in January 2015.

Of total, Western region generated the maximum power of 34940.42 GWH, followed by Northern region (22440.68 GWH), Southern region (19699.58 GWH), Eastern region (14023.38 GWH) and North Eastern region (946.64 GWH).

## **Generation capacity addition**

The generation capacity addition during April-March 2015-16 was 298059.97 MW against 271722.17 MW in April-March 2014-15, up by 9.69%. Out of total generation capacity added during FY16, contribution of the thermal sector was significant i.e 210675.04 MW (70.68% of the total), followed by Hydro power with 42783.42 MW (14.35% of total) and RES with 38821.51 MW (13.02% of total) (RES include Small Hydro Project (SHP), Biomass Power (BP), Urban & Industrial Waste Power (U&I), Solar and Wind Energy).

During 2014-15, against the target of 17830.30 MW generation capacity of 22,566.30 MW was achieved. This was highest ever capacity addition in a single year, registering a growth of 26% over the capacity addition in 2013-14. Efforts have been made to increase the domestic coal production to meet the requirement of power plants.

The growth in domestic coal supplied to power plants during 2014-15 was 10.4%. Government of India has sanctioned a scheme for utilization of gas based power generation capacity for the years 2015-16 and 2016-17. The scheme envisages supply of imported spot Re-gasified liquefied natural gas (RLNG) to the stranded gas based plants as well as plants receiving domestic gas, selected through a reverse e-bidding process.

India's around 36 per cent of power capacity is in western region followed by 26 per cent in northern region, 25 per cent in southern region, 12 per cent in eastern region and only 1 per cent in north-eastern and island regions. Western region leads in thermal power and northern region in hydro with 82968.42 MW and 18246.77 MW respectively. Southern region leads in Renewable Energy Sources (RES), with around 42 per cent share in all-India aggregate, followed by western region (35.28 per cent) and northern region (21.04 per cent).

## Transmission

Consequent to various steps taken by the Government of expediting forest clearances and intensive monitoring of critical transmission lines, 28,114 circuit kilometers (ckm) of transmission lines have been commissioned during the period April-March 2016 against 22,101 ckm commissioned during the same period previous year, thus having a growth of 27.21%. This is 118.56% of the annual target of 23,712 ckm fixed for 2015-16. Of total, 14238 ckm of transmission lines have been commissioned by Central sector and 2402 ckm by State sector, while 2402 ckm by JV/Private sector.

## FDI in power sector

The investment climate is positive in the power sector. Due to policy of liberalization, the sector has witnessed higher investment flows than envisaged. The industry has attracted FDI worth Rs 1,902.26 crore or \$290.46 million during the October-December 2015 as compared to Rs 1,023.81 crore or \$166.23 million in corresponding quarter previous year.

## Recent developments

BRICS bank disburses \$250 million loan for renewable energy project

India was among the first four countries to get a loan from the newly established BRICS New Development Bank (NDB) which gave a \$250 million funding to Canara Bank for a renewable energy project. The China-based NDB has approved four green renewable energy projects from India, China, Brazil and South Africa entailing Bank financing of \$811 million. The project from India entails provisioning of a multi-tranche loan of \$250 million to Canara Bank for lending to

renewable energy ventures. The project will result in generation of 500 MWs of renewable energy and savings of about 800,000 tonnes of carbon emissions.

Government to raise solar power capacity to 48GW by 2019

Government intends to raise solar power generation capacity to 48GW by early 2019, out of 100 GW envisioned from the clean source by 2022 under the National Solar Mission. The Ministry of New and Renewable Energy in its latest projections, has set a target of having 48GW grid connected cumulative solar power generation capacity by 2018-19, after which the general election are to be held. The ministry has envisaged adding 12GW capacity from the renewable source in the current fiscal. It plans to add 15GW and 16GW in 2017-18 and 2018-19 respectively. The target for adding solar power generation capacity was 2 GW for the previous fiscal. India's solar power generation capacity was 5,775.57MW as on March 7, 2016. However, more than half of the 52GW grid connected solar power generation capacity addition target will be achieved in last three financial years, with 2021-22 as terminal year under the National Solar Mission. The ministry has planned adding 17 GW in 2019-20 and 17.5 GW each in 2020-21 and 2021-22 for achieving the overall target of adding 100 GW of solar power generation capacity by 2022. Government estimated a total investment of around Rs 6 lakh crore to achieve the target of 100 GW. Solar power projects are being installed by both, private and public sector companies.

Govt to set up over 5,000 MW of Grid-connected Solar PV Power Projects

The Cabinet Committee on Economic Affairs has given its approval for setting up over 5,000 MW of Grid-Connected Solar PV Power Projects on build, own and operate basis. The work will be implemented by Solar Power Developers (SPDs) with Viability Gap Funding (VGF) under Batch-IV of Phase-II of the Jawaharlal Nehru National Solar Mission (JNNSM). The total investment expected under this scheme is about Rs 30,000 crore. This would help in creating additional 5000 MW capacity of Grid-connected solar PV power generation projects in four trenches of each 1,250 MW capacity during four financial years viz. 2015-16, 2016-17, 2017-18 and 2018-19. This would also help in employment generation of about 30,000 people in rural and urban areas with reduction of about 8.525 million tonne of CO2 emissions into environment every year.

## Outlook

The sector has an investment potential of Rs 15 trillion in the next 4-5 years, providing immense opportunities in power generation, distribution, transmission, and equipment. However, the sector is facing multiple challenges like risk of high fuel supply, the limited capacity to pay on the part of financially weak distribution utilities and cost overruns at plants operated by independent power producers (IPPs). Nevertheless, the Indian Government is taking numerous steps and initiatives like setting up over 5,000 MW of Grid-connected Solar PV Power Projects and raising solar power generation capacity to 48GW by early 2019. Government's newly launched schemes like National Smart Grid Mission, Scheme for gas based power plants and Integrated Power Development Scheme will help power sector to perform well in coming time.



## Companies Financial Data In Industry

Sector Power

Company Name	CMP	MCAP	BOOK VALUE	DIV. YEILD %	TTM EPS	TTM PE
Reliance Infrastructure Ltd.	603.55	15872.76	809.49	1.41	75.51	7.99
CESC Ltd.	651.20	8632.11	595.60	1.54	53.34	12.21
Nava Bharat Ventures Ltd.	239.35	2137.10	295.91	1.25	13.99	17.11
Torrent Power Ltd.	182.45	8768.85	156.10	2.47	13.35	13.66
NTPC Ltd.	161.25	132958.11	110.55	2.08	12.71	12.69
Gujarat Ind Power Co Ltd.	90.45	1368.07	130.63	2.99	12.46	7.26
Power Grid Corp Of India Ltd.	182.45	95450.35	85.13	1.27	12.35	14.77
PTC India Ltd.	79.00	2338.47	96.16	3.16	8.18	9.66
NLC India Ltd.	78.40	13153.24	92.24	3.83	7.18	10.92
JSW Energy Ltd.	78.85	12931.83	51.28	2.54	6.22	12.69
SJVN Ltd.	28.40	11748.02	26.75	3.87	3.40	8.34
BF Utilities Ltd.	624.10	2350.84	21.28	0.00	2.62	238.30
Tata Power Company Ltd.	76.45	20676.89	58.93	1.70	2.50	30.58
NHPC Ltd.	27.55	30499.69	26.75	5.44	2.29	12.05
Veer Energy & Infra Ltd.	21.60	15.36	64.67	27.78	1.71	12.60
Reliance Power Ltd.	53.15	14909.25	58.28	1.88	1.44	37.02
Karma Energy Ltd.	22.00	25.45	37.15	0.00	1.26	17.43
Sinner Energy India Ltd.	41.00	8.32	16.20	0.00	1.09	37.66
Suryachakra Power Corp Ltd.	2.61	39.05	7.03	0.00	0.73	3.57
Adani Power Ltd.	28.00	9568.87	26.45	0.00	0.40	70.64
RattanIndia Power Ltd.	10.41	3074.00	18.58	0.00	0.40	26.35
Energy Development Co Ltd.	150.35	714.16	37.21	0.33	0.34	442.48
India Power Corporation Ltd.	28.50	2775.30	10.30	0.18	0.33	87.01
Ravindra Energy Ltd.	39.80	467.47	17.88	0.00	0.21	186.62
Indowind Energy Ltd.	4.20	37.69	19.27	0.00	0.11	38.70
Urja Global Ltd.	1.00	50.72	2.40	0.00	0.03	30.68
NEPC India Ltd.	1.46	10.11	5.80	0.00	-0.01	0.00
Entegra Ltd.	3.30	104.66	6.06	0.00	-0.15	0.00
Sun Source (India) Ltd.	1.56	2.25	7.40	0.00	-0.32	0.00
Adani Transmission Ltd.	39.25	4316.75	20.09	0.00	-0.50	0.00
SE Power Ltd.	7.10	28.83	9.86	0.00	-0.66	0.00
GVK Power & Infra Ltd.	6.16	972.79	14.05	0.00	-0.82	0.00
Orient Green Power Co Ltd.	10.18	753.12	12.86	0.00	-2.31	0.00

Source – Ace Equity

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