



Power Industry Update

Power Industry in India

Power is one of the most critical components of infrastructure crucial for the economic growth and welfare of nations. The existence and development of adequate infrastructure is essential for sustained growth of the Indian economy.

India's power sector is one of the most diversified in the world. Sources of power generation range from conventional sources such as coal, lignite, natural gas, oil, hydro and nuclear power to viable non-conventional sources such as wind, solar, and agricultural and domestic waste. Electricity demand in

Electricity production in India (BU)



Source: BP Statistical Review, Ministry of Power, TechSci Research; Notes: FY - Indian Financial Year (April-March), BU - Billion Unit, CAGR- Compound Annual Growth Rate

the country has increased rapidly and is expected to rise further in the years to come. In order to meet the increasing demand for electricity in the country, massive addition to the installed generating capacity is required.

India ranks third among 40 countries in EY's

Renewable Energy Country Attractiveness Index, on back of strong focus by the government on promoting renewable energy and implementation of projects in a time bound manner.

Source: IBEF

Power Industry—Road ahead

The Indian power sector has an investment potential of Rs 15 trillion (US\$ 223.67 billion) in the next 4-5 years, thereby providing immense opportunities in power generation, distribution, transmission, and equipment, according to Union Minister Mr

Source: IBEF

Piyush Goyal.

The government's immediate goal is to generate two trillion units (kilowatt hours) of energy by 2019. This means doubling the current production capacity to provide 24x7 elec-

tricity for residential, industrial, commercial and agriculture use.

Inside this issue:

Industry Tends—Whitepapers	2
Crisil Opinion	2
Top Power Companies in India	3
Power Industry IBEF Report	3
Power Industry News & Deals	3
Info-graphics	4

Special points of interest:

- Power Industry IBEF Report
- Top Power Companies in India
- How Batteries and Solar Power Are Disrupting Electricity Markets
- Crisil Opinion: Power cos stare at ~65 paise/unit variable cost deficit

Industry Trends—Whitepapers

Title	Source	Abstract	Link
How Batteries and Solar Power Are Disrupting Electricity Markets	Boston Consulting Group	Solar power produces plenty of electricity on sunny days, but not during peak usage in the evening or when the sky is cloudy. Storage systems such as lithium-ion (Li-ion) batteries, combined with photovoltaic (PV) generation, can address the intermittency of renewables without the expense of expanding the power grid. Batteries reduce the short-term disparity between supply and demand by storing excess electricity during sunny periods (such as at midday) and then delivering it at times of high demand but little or no sunlight (such as at night).	Click here
Optimizing Grids to Meet New Demands on Power Systems	Boston Consulting Group	A confluence of forces is placing new, complex demands on the world's power systems. Principal among these forces is the world's growing focus on mitigating climate change. This, in turn, has led to rising emphasis on renewable energy and distributed generation, supported by regulation that is fostering their development and deployment, and a higher premium attached to energy efficiency. In concert, technological advances are both enabling new possibilities for the way electricity is delivered and consumed and driving down the	Click here
How analytics can improve asset management in electric-power networks	McKinsey	Electric utilities face regulatory and public pressure to achieve two opposing goals: making overdue upgrades while holding down costs and rates to customers. Following an investment wave during the 1970s and 1980s, transmission and distribution (T&D) companies put far less money into improving their networks over the next few decades.	Click here
Energy 2050: Insights from the ground up	McKinsey	When it comes to energy, there is one matter everyone agrees on. For the near future, at least, the world will need more of it—and how it is produced and used will be a critical factor in the future of the global economy, geopolitics, and the environment. With that in mind, McKinsey took a hard look at the data, modeling energy demand from the bottom up, by country, sector, and fuel mix, with an analysis of	Click here
Power and Utilities Industry Outlook 2017	Deloitte	The incoming US Administration and Congress will likely bring change to the power and utilities sector, though it may be more limited than some expect. And it won't change the fact the utility industry is still in a period of transformation. Rising costs have become the norm for utility planners—and that's likely to persist as long as requirements and expectations from regulators, customers, and other stakeholders continue to mount.	Click here

Crisil Opinion

Slower demand growth to hit power generation capacity additions

February 2014

CRISIL Research estimates power demand growth to be tepid at 5.3 per cent CAGR over 2014-2018 as compared to 6.2 per cent CAGR over the last 5 years. Demand growth, particularly from the industrial and commercial segments, is expected to be subdued at 4-4.5 per cent due to muted GDP growth.

Power cos stare at ~65 paise/unit variable cost deficit

March 2015

Private power producers, with a capacity of ~10 GW, who bid the highest at the recently concluded coal block auctions, are staring at ~65 paise per unit under-recovery in variable cost because of aggressive bidding.

Top Power Companies in India (Figures Rs. Million)

Company	Listed/Unlisted	Total Assets	Total Liabilities	Total Operating Revenue	Fiscal Year
Adani Enterprises Ltd.	Listed	162,152.70	195,468.20	452,705.00	2016
Bangalore Electricity Supply Company Lim-	Unlisted	172,004.90	147,134.70	148,574.10	2016
Dakshin Haryana Bijli Vitran Nigam Ltd.	Unlisted	90,594.50	192,238.50	134,008.70	2015
Summit Online Trade Solutions Private Lim-	Unlisted	5,036.64	2,855.38	114,918.36	2015
Jaipur Vidyut Vitran Nigam Ltd.	Unlisted	174,483.60	406,519.30	109,543.90	2015
Uttar Haryana Bijli Vitran Nigam Limited	Unlisted	101,555.10	243,288.20	108,311.70	2015
Nuclear Power Corporation Of India Limited	Unlisted	605,521.80	280,931.00	100,646.20	2016
NHPC Ltd.	Listed	417,911.80	228,906.50	95,777.90	2016
Rajasthan Rajya Vidyut Utpadan Nigam Ltd.	Unlisted	308,897.40	266,198.10	91,103.60	2015

Source: EMIS

Power Industry Report—India Brand Equity Foundation

Control generation costs	<ul style="list-style-type: none"> Companies are developing captive coal fields to reduce price volatility and ensure uninterrupted supply of fuel to control generation cost Most of the power companies are now located near energy source. This helps minimise costs of fuel transport
Acquiring sources of fuel supply	<ul style="list-style-type: none"> Power companies are now looking at securing adequate supplies of fuel by targeting not only domestic but also overseas resources Reliance Power already has coal reserves in Indonesia Essar Power have captive coal mines in Indonesia from which it extracts coal for power plants in India Government has enabled the power utilities for swapping their coal supplies with the nearest sources so as to save miscellaneous costs and decongest the rail network
Diversifying generation technologies	<ul style="list-style-type: none"> Companies are using multiple-generation technologies based on a project's requirement Companies such as NTPC and Reliance Power already have coal-fired, gas-fired and hydroelectric capacity This helps them diversify, reduces dependence on a single source
Additional revenue streams	<ul style="list-style-type: none"> Most of the companies are now looking to sell their carbon credits to generate additional revenue by employing supercritical technology
Digital India	<ul style="list-style-type: none"> Launch of smart grid mission with 14 DISCOMS as a pilot Smart metering for high – end users of electricity In 2015, Companies like Uttar Gujarat Viji Company, Tata Power and Essel have installed machine-to-machine (M2M) based smart metering systems in India

To get the entire report [click here](#)

Power Industry —News & Deals

News

- [Rooftop solar power generation is up, but future uncertain](#)
- [NEXTracker to set up manufacturing unit in India to push solar power generation](#)

Deals

- [India's Renewable Investment Goal Seems Misguided](#)
- [Kudankulam Nuclear Power Plant Unit 2 touches 870MW generation](#)

◆ **LRC Memberships:**

**PRN. L N WELINGKAR INSTITUTE OF
MANAGEMENT DEVELOPMENT & RESEARCH**

Primary Business Address:
Prin. L. N. Welingkar Institute of Management Development &
Research (AUTONOMOUS)
L Napoo Road | Matunga (CR) | Mumbai- 400 019.

Dr. Sandeep Bhavsar, Librarian
Email: sandeep.bhavsar@welingkar.org

Alumni Network

**Alumni Membership (annual) - Rs. 3500/-
(Fee Rs. 1500 and Deposit Rs. 2000)**

**Corporate Membership (annual) - Rs. 25000/-
(Fee Rs. 20000/- and Deposit Rs. 5000/-)**

Important Link:

Library OPAC : <http://libcatwelmum-koha.informindia.co.in/>



Power Industry Info-graphics—Click to view the larger image

