

Now Available

POWER SECTOR IN INDIA 2015

Sector Trends, Market Outlook and Future Projections

- ❖ 303 Slide Presentation (PDF)
- ❖ 307 Report (PDF)

Table of Contents

SECTION A: MACRO ANALYSIS OF THE SECTOR

1. **Executive Summary**
2. **Overview**
 - ❖ Introduction
 - ❖ Power Demand and Supply
 - ❖ Generation Capacity Trends
 - ❖ Key Trends and Developments
 - ❖ Plans and Targets
 - ❖ Key Issues and Challenges
 - ❖ Future Outlook
3. **Recent Significant Developments**
 - ❖ Introduction
 - ❖ Policy Developments
 - ❖ New Government Initiatives
 - ❖ Key Regulatory Developments
 - ❖ Mergers & Acquisitions
 - ❖ Other Developments
 - ❖ Summing Up
4. **Power Demand and Supply**
 - ❖ Introduction
 - ❖ Macroeconomic Trends
 - ❖ Power Demand Trends
 - ❖ Power Supply Trends
 - ❖ Power Deficit
 - ❖ Challenges in Meeting Power Demand
 - ❖ Power Demand Outlook and Projections
 - ❖ Conclusion
5. **Fuel Trends**
 - ❖ Introduction
 - ❖ Demand
 - ❖ Supply
 - ❖ Imports
 - ❖ Prices
 - ❖ Outlook and Projections
 - ❖ Conclusion
6. **Key Policy Initiatives**
 - ❖ Introduction
 - ❖ Fuel Supply Issues
 - ❖ Proposed Amendments to Electricity Act, 2003
 - ❖ Recommendations by Advisory Group
 - ❖ Statutory Clearances
 - ❖ Pilot Smart Grid Projects
 - ❖ Renewable Energy Thrust
 - ❖ Other Initiatives
 - ❖ Conclusion
7. **Cost and Tariffs**
 - ❖ Introduction
 - ❖ Generation Cost Trend
 - ❖ Cost of Supply
 - ❖ Tariff Trends
 - ❖ Impact on Discom Finances
8. **Key Government Programmes**
 - ❖ Introduction
 - ❖ Deendayal Upadhyaya Gram Jyoti Yojana
 - ❖ Integrated Power Development Scheme

- ❖ Jawaharlal Nehru National Solar Mission
- ❖ National Smart Grid Mission
- ❖ National Mission for Enhanced Energy Efficiency
- ❖ Restructured Accelerated Power Development and Reforms Programme
- ❖ Rajiv Gandhi Grameen Vidyutikaran Yojana
- ❖ Conclusion

9. **Regulatory Outlook**
 - ❖ Introduction
 - ❖ Terms and Conditions of Tariff Regulations, 2014
 - ❖ Deviation Settlement Mechanism Regulations, 2014
 - ❖ Indian Electricity Grid Code Regulations, 2010
 - ❖ Grant of Connectivity, Long-term Access and Medium-term Open Access in ISTS Regulations, 2009
 - ❖ REC Regulations, 2010
 - ❖ The Way Forward

10. **Financing**
 - ❖ Introduction
 - ❖ Key Trends in Power Sector Financing
 - ❖ Investment Projections
 - ❖ Financial Closures
 - ❖ Mergers and Acquisitions
 - ❖ Financings Raised
 - ❖ Snapshot of Key Financing Entities
 - ❖ Conclusion

11. **Project Pipeline**
 - ❖ Introduction
 - ❖ Overall Project Pipeline
 - ❖ Pipeline by Project Stage
 - ❖ Conclusion

12. **Outlook and Projections**
 - ❖ Introduction
 - ❖ Power Demand Projections
 - ❖ Capacity Addition Projections
 - ❖ Fuel Outlook
 - ❖ Projections for Renewable Energy Capacity
 - ❖ Policy Outlook
 - ❖ Conclusion

SECTION B: SEGMENT ANALYSIS

13. **Generation**
 - ❖ Introduction
 - ❖ Size and Growth
 - ❖ Key Trends
 - ❖ Recent Significant Developments
 - ❖ Investment Requirements
 - ❖ Opportunities
 - ❖ Growth Drivers
 - ❖ Generation Outlook
 - ❖ Projections for Generation Capacity
 - ❖ Conclusion

14. **Power Transmission**
 - ❖ Introduction
 - ❖ Size and Growth
 - ❖ Interregional Capacity
 - ❖ Creation of a National Grid
 - ❖ Key Players
 - ❖ Private Sector Participation
 - ❖ High Capacity Power Transmission Corridors
 - ❖ Linkages with SAARC Countries
 - ❖ Transmission Infrastructure for Renewable Energy
 - ❖ Technology Trends
 - ❖ Technology Adoption by Powergrid
 - ❖ Twelfth Plan Targets and Progress
 - ❖ Thirteenth Plan Targets and Fund Requirement
 - ❖ Conclusion

15. **Distribution**
 - ❖ Introduction
 - ❖ Network Size and Growth
 - ❖ Key Trends
 - ❖ Recent Developments
 - ❖ Discom Finances
 - ❖ Investment Requirements
 - ❖ Opportunities
 - ❖ Growth Drivers
 - ❖ Future Outlook

16. **Renewable Energy**
 - ❖ Introduction
 - ❖ Size and Growth
 - ❖ Key Trends
 - ❖ Recent Significant Developments
 - ❖ State Policies and their Impact
 - ❖ Investment Requirements
 - ❖ Upcoming Opportunities
 - ❖ Growth Drivers
 - ❖ Outlook and Projections

17. **Power Trading**
 - ❖ Introduction
 - ❖ Size and Growth
 - ❖ Trends in Power Exchanges
 - ❖ Trends in Bilateral Trading
 - ❖ Bilateral Trading Directly Between Discoms
 - ❖ Trends in REC Market
 - ❖ Challenges
 - ❖ The Way Forward

18. **Appendix**



The report is available along with a presentation in PDF format.

Release Date: June 8, 2015
No. of page: 307

List of Tables and Figures

LIST OF TABLES

Twelfth Plan Targets for Generation Capacity
 Twelfth Plan Targets for Transmission
 Top M&A Deals in Power Sector over the Past Year (by value of deal)
 Consumer Category-wise Consumption 2008-09 v/s 2013-14 (MUs)
 Projections of Power Demand based on various Approaches (BUs)
 Raw Coal Off-take by Power Sector (mt)
 Gas Off-take by Power Sector
 Trend in Imports by Power Utilities in 2014-15 and 2013-14 (mt)
 Role of LNG Imports in Gas Consumption by Sector in 2013-14 (mmscmd)
 Pithead Run-of-Mine (RoM) Coal Prices Notified by CIL and SCCL (Rs per tonne)
 Trend in CIL's Coal Prices (Rs per tonne)
 Average Realisations from Auctions
 Change in APM Gas Prices from 2010 onwards
 Projected Coal Production till 2019-20 (mt)
 Projected Incremental Gas Supply (mmscmd)
 Results of E-auctions for Schedule II blocks
 Results of E-auctions for Schedule III blocks
 Status of Pilot Smart Grid Projects
 Snapshot of State-Specific Solar Policies across Select States
 Wind Power Tariff across Select States
 Landed Prices of Indonesian Coal vs Indian Coal (Rs per tonne)
 Trends in Case 1 Bidding
 Trends in Case 2 Bidding
 Range of Hydro Power Tariffs across Sectors
 Top 10 Utilities with the Highest and Lowest ACS for 2012-13
 Cross-Subsidisation Level across Key States
 Average Retail Supply Tariff Hikes by States for 2015-16 (as of April 2015)
 Funding Mechanism for DDUGJY
 Mechanism for Release of Grants for DDUGJY
 Status of DDUGJY (as of April 2015)
 Funding Mechanism for IPDS
 Mechanism for Release of Grants for IPDS
 Status of IPDS (as of May 2015)
 Review of JNNSM Phase-1
 State-wise Commissioning Status under JNNSM Phase I as of January 2015 (in MW)
 Future Targets under JNNSM
 Outlay under the NSGM (in Rs billion)
 Details of Cycle-1 of PAT
 Status of RGGVY (as of February 2015)
 Key CERC Regulations
 Key Changes in Tariff Regulations 2014-19
 Floor and Forbearance Prices of RECs
 Financing Trends in Power Sector (Rs billion)
 Exposure of Select Banks to Power Sector
 Investment Projections by Deepak Parekh Committee Report 2014
 Power Projects which have achieved Financial Closures from April 2012 to March 2015
 Recent M&A Deals in Power Sector
 PE Deals in Coal and Renewable Energy Sectors in 2014-15
 Multilateral Loans To Power and Renewable Energy Sectors in 2014-15
 Recent IPOs/Offer for Sale
 QIPs by Power Companies in 2013-14 and 2014-15
 Top 10 ECB/FCCB deals in Power & Renewable Energy Sectors in 2014-15
 PFC's Loan Quality
 PFC's Lending Operations (Rs billion)
 REC's Loan Quality
 Overview of REC's Lending Operations
 IREDA's Loan Quality

IREDA's Lending Operations by Segment
 IDFC Limited's Lending Operations
 IIFCL's Lending Operations (Rs billion)
 Details of Power Projects in Pipeline
 Capacity of Upcoming Projects by Stage of Development
 Capacity of Under-Construction Projects
 Capacity of Announced Projects
 Details of Awarded Projects
 Details of Projects Proposed for Bidding
 Power Demand Projections based on Energy Elasticity Approach
 Source-wise Power Generation (BUs)
 Investment Requirement for Power Generation
 Expected Conventional Capacity Addition
 Voltage-wise Growth in Transmission Network
 Voltage-wise Growth in Transformer Capacity
 Transmission Network Details of Key Transmission Players (as of March 2014)
 Status of Interstate Projects Awarded through TBCB
 Interstate Projects under Competitive Bidding Process
 Interstate Projects Identified for Competitive Bidding
 High Capacity Power Transmission Corridors
 India's Existing Cross-border Electricity Interconnections
 India's Planned Cross-border Electricity Interconnections
 Comparison of Performance Parameters at Various Voltage Levels
 Twelfth Plan Transmission Line Length and Capacity Addition Targets
 Thirteenth Plan Transmission Line Length and Capacity Addition Targets
 Proposed Infrastructure under DDUGJY
 Proposed Infrastructure under IPDS
 Trend in Income, Expenditure and Profitability of State Distribution Utilities (Rs billion)
 Top Ten Distribution Utilities with Highest Losses (subsidy-received basis) - 2012-13
 Trend in Subsidy
 Top Ten Utilities in Terms of Loans (in Rs billion) in 2012-13
 Investment Outlay of New Central Sector Schemes Targeting Distribution
 Funding Mechanism for Projects under DDUGJY and IPDS
 Funding Mechanism under NSGM
 Projected Capital Investment by Select Discoms for 2015-16
 Growth of Various Renewable Energy Technologies (MW)
 Key Solar State Policies and their Targets
 Key Policies and Regulations for Wind Power Projects
 Small Hydro Policies across States
 Interest Rates Offered to Renewable Energy Projects by Different Financing Institutions
 Tax and Regulatory Incentives Available to Renewable Energy Projects
 Capacity Projections for Different Sources of Renewable Energy based on MNRE Targets
 Total and average capacity addition of Renewable Energy in the given period (MW)
 Growth in Volume of Short-term Transactions of Electricity
 Major Buyers in 2013-14
 Major Sellers in 2013-14

LIST OF FIGURES

Energy Demand Vs Availability Trend
 Peak Demand Vs Peak Supply Trend
 Growth in Installed Generation Capacity
 Generation Capacity Addition Trend
 Year-wise GDP Growth from 2008-09 to 2013-14

Year-wise Growth in IIP from 2009-10 to 2013-14
 Trend in Average Energy Demand between 2008-19 and 2014-15
 Trend in Peak Energy Demand between 2008-19 and 2014-15
 Region-wise Average Energy Demand in 2014-15
 Region-wise Peak Energy Demand in 2014-15
 State-wise Average Energy Demand in 2014-15
 Consumer Category-wise Power Consumption in 2013-14
 Consumer Category-wise Power Consumption in 2008-09
 Average Energy Supply between 2008-09 and 2014-15
 Peak Energy Supply between 2008-09 and 2014-15
 Peak and Average Power Deficit Trend between 2008-09 and 2014-15
 Region-wise Power Deficit Trend between 2008-09 and 2014-15
 Trend in Coal Demand
 Trend in Coking and Non-coking Coal Demand
 Sector-wise Coal Demand
 Year-wise Trend in Coal Demand by Power Sector
 Trend in Gas Consumption
 Sector-wise Gas Consumption
 Company-wise Trend in Raw Coal Production
 Captive Coal Block Production Trend (mt)
 Trends in Gas Production
 Coal Demand-Supply Gap
 Trend in Coal Imports
 Coking vs. Non-Coking Coal Imports
 Thermal Coal Imports by Source
 Growth in India's LNG Imports from 2009-10 to 2014-15
 E-Auction Coal Volume and Premiums
 Trend in International Coal Price Indices from 2009-2015
 Prices at the JCC Index in last 12 months
 Prices at the Henry Hub Index in last 12 months
 Year-wise Projected Production by CIL under 1 billion tonne Production Plan till 2019-20
 NTPC's Average Tariff Trend
 NTPC's Average Coal-based Power Generation Cost Trend
 Generation Cost Trend of Major State Gencos
 Impact of Coal Blending on Generation Cost
 Average Hydro Power Tariffs with Year of Commissioning
 Trend in CERC-determined Benchmark Solar PV Tariffs
 Trends in CERC-determined Benchmark Wind Tariff and Capital Cost Estimates
 Trend in Cost of Power Supply
 Trend in Power Purchase Cost
 Trend of Average Revenue Realised
 Proposed Tariff Revision by Discoms in Key States for 2015-16
 Consumer Category-wise Average Tariff Trend
 Solar RECs - Indicative Demand vs Supply at IEX (April 2014-March 2015)
 Trend in CDR Cases received from Power Sector
 PE Deals (Share in Value of Transactions)
 ECB/FCCBs raised in 2014-15 vs 2013-14
 PFC's Borrower Mix (April-Dec 2015)
 REC's Borrower Mix (April-December 2015)
 Details of Power Projects in Pipeline
 Investments in Projects in Pipeline by Stage of Development (as of April 2015)
 Investments in Projects Under Construction
 Investments in Announced Projects
 Power Demand Projections as per CEA (MUs)
 Power Demand Projections based on

Consensus Estimates (BUs)
 Projected Capacity Addition in Coal, Hydro and Nuclear Segments
 Projected Coal Production (mt)
 Projected Capacity Addition in Renewable Energy Sector by Segment
 Year-wise Growth in Installed Power Capacity
 Fuel Mix in Power Generation in 2009-10
 Fuel mix in Power Generation in 2014-15
 Sector-wise Power Generation Installed Capacity in 2008-09
 Sector-wise Power Generation Installed Capacity in 2014-15
 Trend in Installed Thermal Power Generation Capacity
 Trend in Installed Hydro Power Generation Capacity
 Trend in Thermal PLF across Sectors
 Opportunities for Financiers and Equipment Providers in Power Generation (Rs billion)
 Growth in Transmission Network (ct. km)
 Growth in Transformer Capacity (MVA)
 Growth in Interregional Transfer Capacity
 Power Deficit for Southern Region
 Interregional Transfers and Approved STOAs
 Proposed High Capacity Transmission Corridors
 Year-wise Trend in Distribution Line Length
 Year-wise Trend in Transformer Capacity
 Sector-wise Electricity Consumption during 2013-14
 Trend in Energy Sales
 Trend in AT&C Losses
 Trend in Average Power Purchase Cost
 Trend in Average Tariff
 Aggregate Losses on Subsidy-Received Basis
 Year-wise ACS-ARR (without subsidy) Gap
 Accumulated Debt of Discoms
 Projected Line Length
 Projected Transformer Capacity
 Share of Different Technologies in Renewable Energy Installed Capacity
 Growth in Renewable Energy - Installed Capacity
 Year-wise Capacity Addition in Solar (MW)
 Year-wise Capacity Addition in Wind (MW)
 Year-wise Capacity Addition in Small-hydro
 Year-wise Capacity Addition in Biomass and Bagasse Cogeneration (MW)
 Solar REC Market (cleared volumes)
 Non-Solar REC Market (cleared volumes)
 Transaction Structure in Short-term Power Market in 2013-14
 Price Trends in Short-term Power Market
 Growth in Traded Volume of Power at IEX and PXIL (MUs)
 Monthly Price Trends in Electricity Traded at Power Exchanges (Rs/kWh)
 State-wise Participation of Open Access Consumers in Power Exchanges in 2013-14
 Open Access Consumers Purchase Volume in Day-Ahead Market of Power Exchanges in 2013-14
 Growth in Bilateral Transactions through Trading Licensees (MUs)
 Trends in Prices of Electricity Transacted through Trading Licensees (Rs/kWh)
 Share of Electricity Transacted by Traders (%)
 Growth in Bilateral Transactions directly between Distribution Companies (MUs)
 Volume of Solar RECs Traded at Power Exchanges (Buy Bids)
 Volume of Solar RECs Traded at Power Exchanges (Sell Bids)
 Volume of Non-Solar RECs Traded at Power Exchanges (Buy Bids)
 Volume of Non-Solar RECs Traded at Power Exchanges (Sell Bids)

Format (PDF)	Price	Service Tax (15%)	Total
Site Licence (Single Location)	Rs 60,000	Rs 9,000	<input type="checkbox"/> Rs 69,000
Enterprise Licence (Multiple Locations)	Rs 90,000	Rs 13,500	<input type="checkbox"/> Rs 103,500

I am enclosing a cheque/demand draft for Rs. _____, vide cheque/demand draft no. _____ drawn on _____ dated _____ in favour of “India Infrastructure Publishing Pvt. Ltd.”

Signature

.....

Name (BLOCK LETTERS) _____

Designation _____

Company _____

Mailing Address _____

Telephone _____ Mobile _____

Fax _____

E-mail _____

Wire transfer details:

Beneficiary : India Infrastructure Publishing Pvt. Ltd.
Bank Name : The Hongkong and Shanghai Banking Corporation Ltd
Bank Address : R-47, Greater Kailash –1, New Delhi 110048
Account No. : 094179587002
Swift Code : HSBCINBB
IFSC Code : HSBC0110006

Contact details:

Raktima Majumdar
 Manager-Information Products
 India Infrastructure Publishing Pvt. Ltd.
 B-17, Qutab Institutional Area. New Delhi - 110 016. India
 Tel: +91 11 46078365, 41034600, 41034601
 Mobile: +91 8826127521 Fax: +91 11 2653 1196
 raktima.majumdar@indiainfrastructure.com