POWER

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Contents

PROFILE OF INDIAN POWER SECTOR

The Indian Power Sector has a >100 year history

- 1880s – First electrification – small hydel in Darjeeling
- 1889 – Commercial production & Distribution starts in Calcutta
- Indian Electricity Act, 1910.
- 1947 – Power generating capacity only 1,362 MW
- The Electricity (Supply) Act, 1948 – SEB formation
- Creation of central generation companies
- CEA constituted
- 1956 – Industrial Policy Resolution reserves production of power for public sector
- 1960s and 70s – Impetus for expansion of rural electrification
- 1975 – NTPC and NHPC set up
- 1989 – NPTC set up. Renamed POWER GRID in 1992.

The Indian Power Sector has a >100 year history

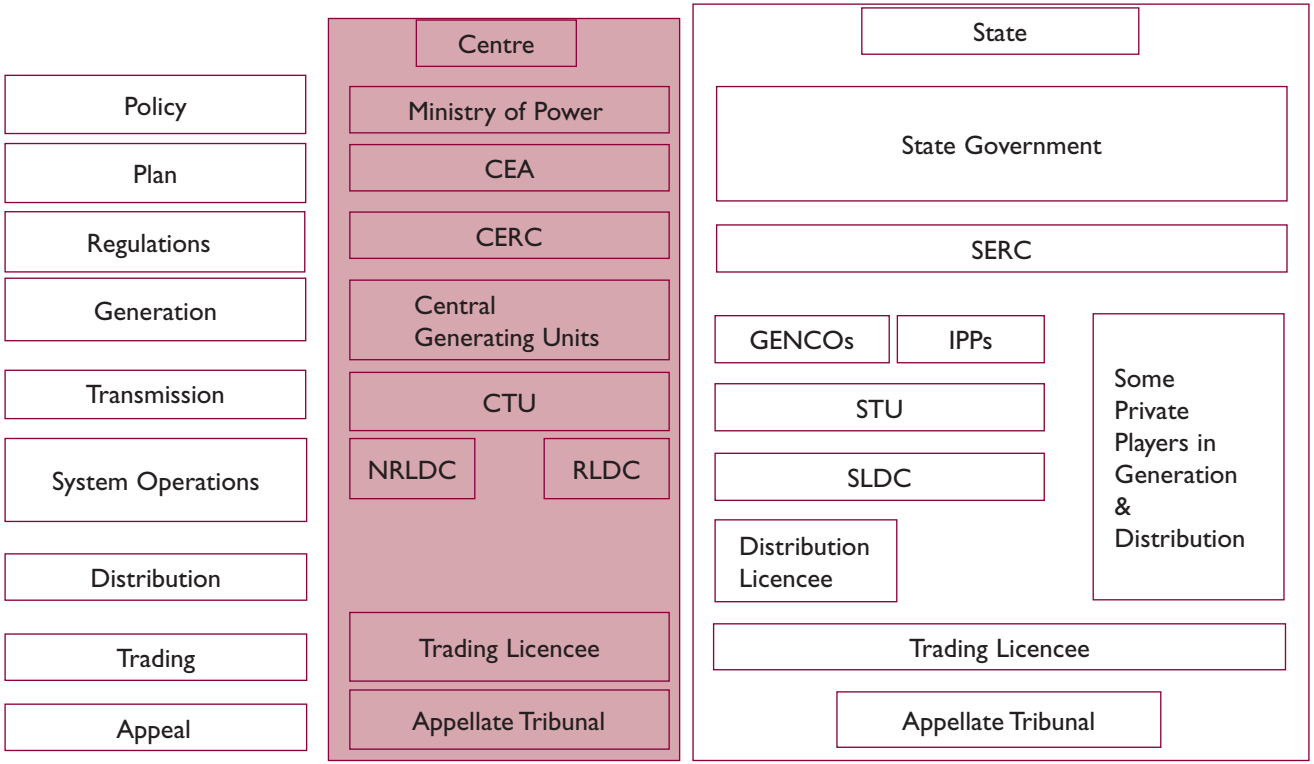
- 1991 – Liberalisation; amendments in Electricity (Supply) Act
- 1992 – Ministry of Power constituted
- 1995 – Policy for Mega power projects introduced
- 1998 – CERC and SERCs set up
- 2001 – Energy Conservation Act
- 2003 – New Electricity Act
- 2005 – National Electricity Policy
- 2006 – Tariff Policy
- 2007 – New Resettlement and Rehabilitation
- 2007-08 – power generation stands at 704 Billion Units
- 2008 – New Hydro Policy
- 2008 – Revised Mega Power Project Policy

The Indian Power Sector has a >100 year history

- From humble beginnings in the 1880s, the Indian Power Sector has come a long way
- From one small unit in 1880s to 1,362 MW in 1947 to over 147,806 MW in September 2008

The sector has multi-tier institutional arrangement

- The primary agency responsible for the power sector in India is the Ministry of Power, which started functioning with effect from 2nd July 1992
- Ministry of New & Renewable Energy is responsible for developing renewable power; Funding agency - IREDA

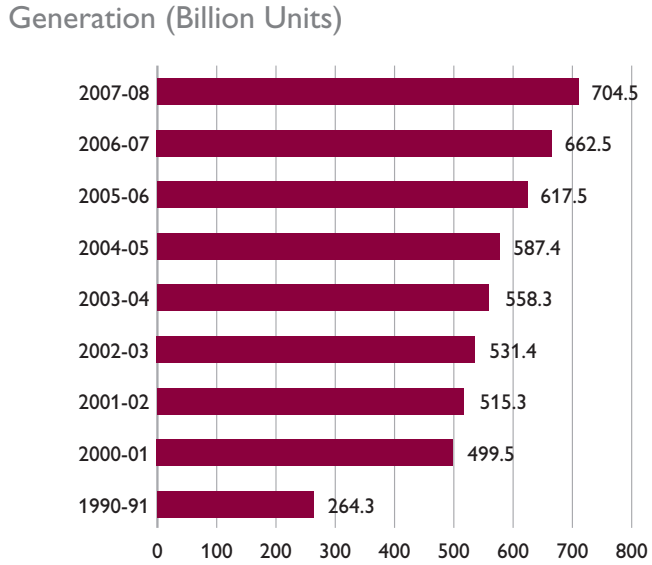


A range of key organisations perform several functions

Organisation	Established	Core Expertise
Damodar Valley Corporation (DVC)	1948	Generation, Transmission and Distribution in specified region.
Bhakra Beas Management Board (BBMB)	1967	Administration, Operation and Maintenance of projects under Board.
Rural Electrification Corporation (REC)	1969	Financing and implementing rural electrification schemes.
National Thermal Power Corporation (NTPC)	1975	Thermal plants: concept to commissioning and operations.
National Hydro Electric Power Corporation (NHPC)	1975	Hydro plants: concept to commissioning and operations.
North Eastern Electric Power Corporation (NEEPCO)	1976	Developing power projects in North Eastern region of the country.
Power Finance Corporation (PFC)	1986	Financing of power development schemes.
Tehri Hydro Development Corporation (THDC)	1988	Development of hydro potential in specific river/valley.
Satluj Jal Vidyut Nigam (SJVN)	1988	Development of hydro potential in specific basin.
Powergrid (Powergrid)	1989	Transmission system for evacuation of central sector power and establishment/operation of inter-regional grids, load despatch centres.
Power Trading Coprporation (PTC)	2001	Trading of power
Bureau of Energy Efficiency (BEE)	2002	Responsible for spearheading the improvement of energy efficiency of economy through regulatory and promotional instruments
Appellate Tribunal for Electricity	2004	To hear appeals against the orders of the adjudicating officer or Appropriate Commission under the Electricity Act, 200
National Load Dispatch Centre (NLDC)	2005	Scheduling and dispatch of electricity across inter-regional links and monitoring of the national grid.

Generation has increased over the years

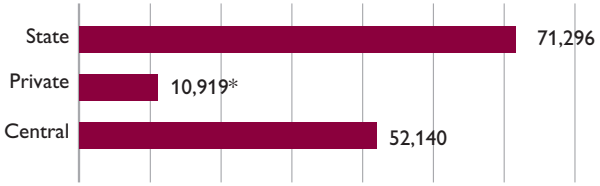
- From humble beginnings in the 1880s, the Indian power sector has come a long way
- From one small unit in 1880s to 1362 MW in 1947 to over 147,806 MW (704 billion units) in 2007-08



Generation – installed capacity

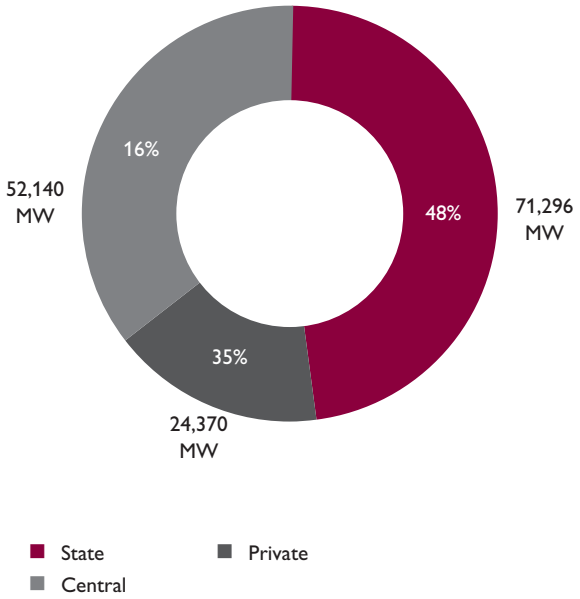
- The state sector accounts for a large share of installed capacity, followed by central and private sectors
- Emerging trend is one of larger share of renewable power in the total installed capacity mix

Installed Capacity (Mega Watt)



*Private includes utility capacity only; Does not include 13,451 MW renewable power capacity which is predominantly private

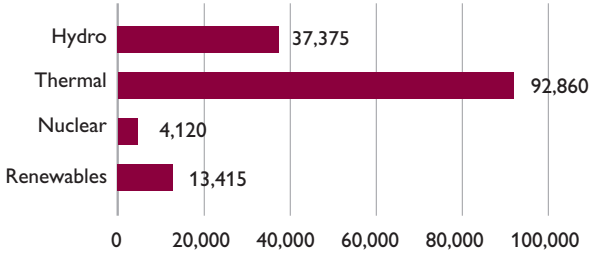
Installed Capacity Distribution
Private includes utility and renewable power



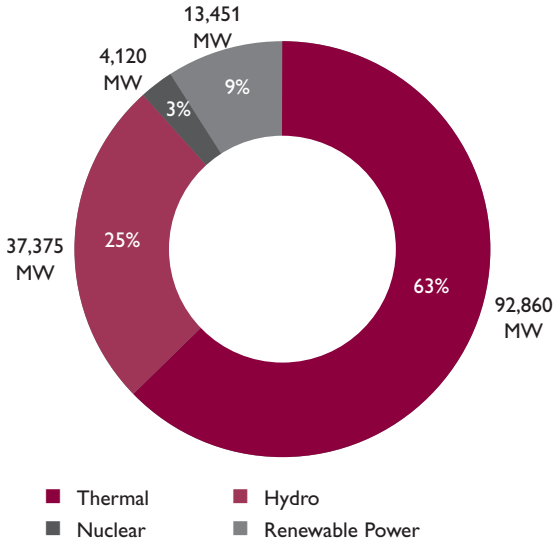
Generation – shift in composition of conventional mix

- Thermal power accounts for much of the power produced in India, followed by hydro. Other means of generation are negligible in comparison.

Generation Type (MW)



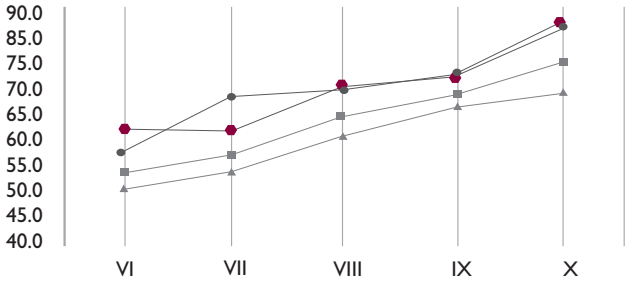
Generation Type %



Generation – plant load factor has been improving

- PLF of generating plants has improved consistently over the last five plan periods.
- But slid during Apr-Sep 2008. Inadequate fuel availability and old age the key reasons.
- Average PLF of thermal and nuclear plants was 73.95 per cent during Apr-Sep 2008.
- PLF of central plants in Apr-Sep 2008 was 80.47 per cent while that of state sector units was 67.79 per cent.

PLF (%) during last year of the place

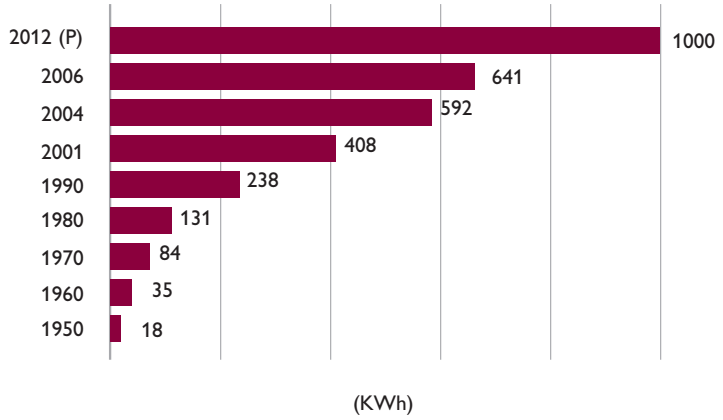


Central Sector	61.9	62.2	71.1	74.3	84.8
State Sector	49.2	53.0	60.3	67.0	70.6
Private Sector	57.5	69.5	71.2	74.7	86.4
Overall	52.4	56.5	64.4	69.9	76.8

Per capita consumption has increased

- Per capita consumption of power in India has gone up significantly since the 1990s

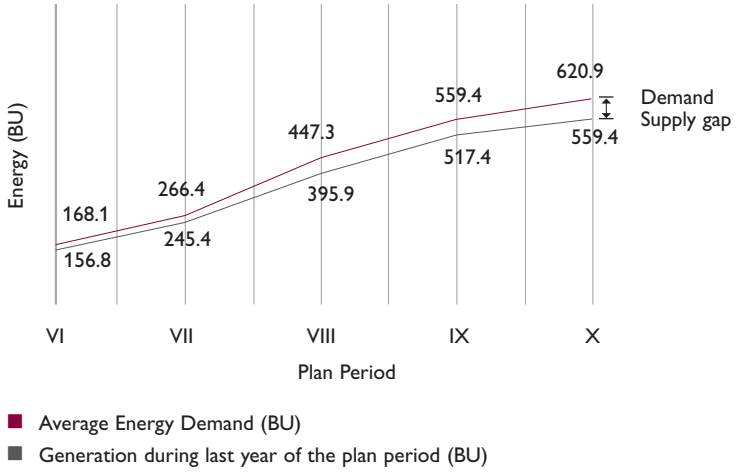
Trend in per Capita Consumption



The demand – supply gap is growing

- Energy requirement during Apr-Sep 2008 was 321,644 MU; Energy availability was 287,693 MU;
- Resulting energy shortage of 10.6 per cent compared to seven per cent in Apr-Sep 2007.
- Peak demand for energy during Apr-Sep 2008 was 106,922 MW; Peak demand met was 91,363 MW.
- Consequent peak shortage was 14.6 per cent compared to 12.1 per cent in Apr-Sep 2007.

Deamand Supply Gap Energy (BU)



Planned capacity additions (MW) – 11th Five Year Plan Period

- Significant capacity additions to generation have been planned under the 11th Plan
- With more than 70 per cent under construction target is likely to be met without significant delays as in the past

	Central	State	Private	**Total**
Hydro	8,654	3,482	3,491	**15,627**
Thermal	24,840	23,301	11,552	**59,693**
Nuclear	3,380	0	0	**3,380**
Total Utility	36,874	26,783	15,043	**78,700**
Renewables	NA	NA	NA	**14,000**
Grand Total	**36,874**	**26,783**	**15,043**	**92,700**

Generation backend -- fuel outlook

Coal

- Vast reserves – mineable coal in excess of 2,800 million tonnes identified; Captive coal block allocation to encourage private and central sector developers.

Oil

- Reserves estimated at 700 MMT of oil Ministry of Petroleum and Natural gas; However, import dependence to continue in the long term.

Gas

- Discoveries of gas to the tune of 700 Sq.bcm in the last decade; Reliance's discovery to determine initial market take off in 2009.

Generation backend -- fuel outlook

Nuclear

- One of the largest reserves of the nuclear fuel – thorium. Indo-US deal a +ve outcome; Several other fuel/technology sourcing avenues have opened up – Russia, France

Hydro

- Potential of about 150,000 MW; Only 25 per cent harnessed so far; Major capacity addition to come from the North and North-east.

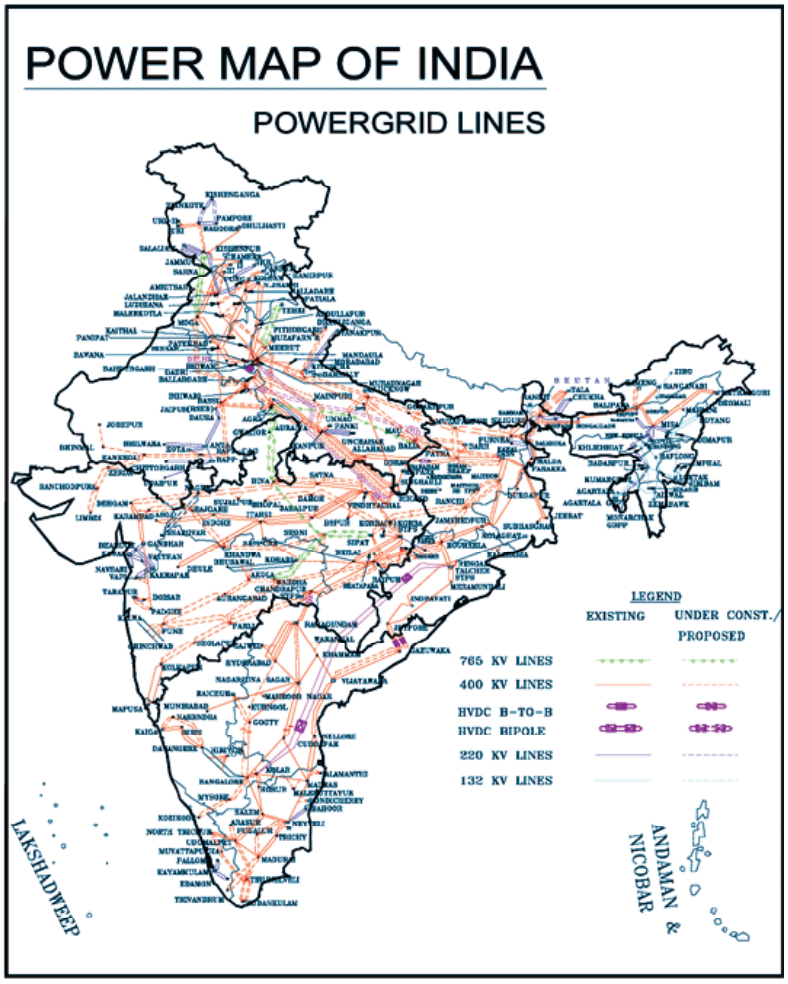
Renewables

- Vast potential -- solar power, biomass and wind power; Current installed capacity of 13,451 MW constitutes about eight per cent of total installed capacity; India already fourth largest in the world in terms of wind energy installations.
- Significant reserves of coal and gas exist and significant potential to harness renewable power

Transmission Network has grown significantly

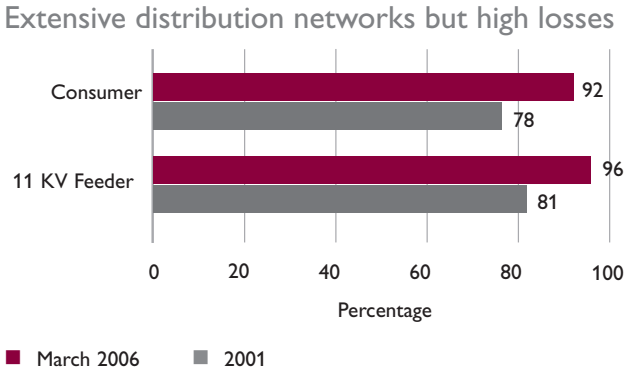
- Transmission lines have grown from 3,708 ckm in 1950 to more than 210,949 ckm now; Plan to increase to 293,372 ckm by 2012.
- Country divided into five regions for transmission systems: northern, north eastern, eastern, southern and western.
- Work ongoing on creating a National Grid.
- Current transmission capacity of 143,000 MW.
- Plan to have 200,000 MW grid capacity and 37,000 MW inter-regional transmission capacity by 2012.
- Substation capacity to be increased by about 48 per cent to 428,000 MW.

	X Plan	XI Plan	**Total**
POWERGRID's Outlay	21,370	28,258	**49,628**
Private Sector participation	9,710	11,185	**20,895**
Total Central Sector	**31,080**	**39,443**	**70,523**



Extensive distribution networks but high losses

- Extensive network of sub-transmission and distribution systems have been set up in India.
- T&D losses have been consistently on the higher side, and are presently in the range of 18 per cent to 50 per cent in various states; Average 35 per cent.
- APDRP was identified in 2000-01 as the key area to bring about the efficiency and improve financial health of the power sector - payoffs localised to implementation area.
- Revised APDRP proposed for the 11th Plan Period two be implemented in two parts; Funds to be given directly to utilities rather than through the state government.



Financial performance

Financial performance of the State power sector				
	1991-92	2003-04(P)	2004-05(RE)	2005-06(AP)
A. Gross Subsidy involved				
(i) On account of sale of electricity to				
(a) Agriculture	5,938	23,246	23,805	25,377
(b) Domestic	1,310	8,885	9,639	10,033
(c) Inter-State Sales	201	923	866	591
Total	**7,449**	**33,154**	**34,311**	**36,002**
(ii) Subventions Received from State Governments	2,045	11,081	9,825	9,831
(iii) Net Subsidy	5.404	22,073	24,486	26,170
(iv) Surplus Generated by sale to other sectors	2,173	6,133	6,967	8,640
(v) Uncoverred Subsidy	3,231	15,941	17,520	17,530
B. Commercial Losses				
(i) Commercial Losses (excluding subsidy)@	4,117	20,379	20,715	22,013
(ii) Commercial Losses (including subsidy)	NA	9,298	10,890	12,182
C Rate of Return (ROR%)#	-12.70	-28.32	-27.97	-28.13
D Revenue Mibilisation Additional Revenue Mobilisation from achieving				
(a) 3% ROR	4,959	22,538	**22,936**	24,362
(b) From introducing 50 paise per unit from Agriculture/irrigation	2,176	540	755	773

RE: Revised Estimates * Provisional AP: Annual Plan Project # for losses without subsidy

@ Commercial losses are different From uncovered subsidy because they include financial results of other activities undertaken by the SEBs.

Source: Planning Commission

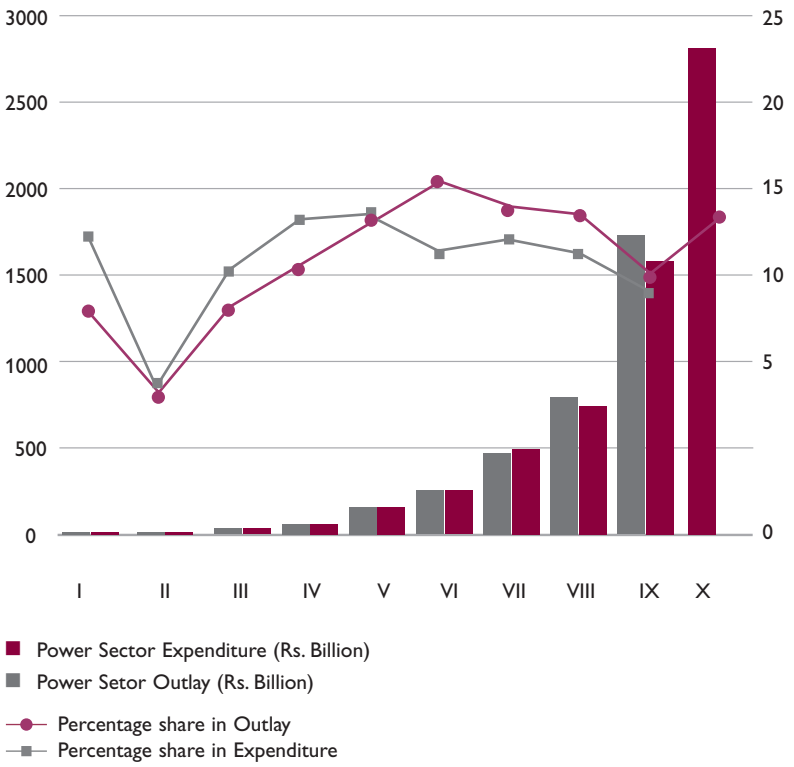
Financial performance

- Non-realisation of revenue for power generated has led to financial degradation and spiral of worsening performance
- The power sector in India suffers huge financial losses to the tune of US$ 6 billion per annum. These losses have accumulated over time and resulted in inadequate financial resources for capacity augmentation

Trends in public investment

- In the expectation of greater private investment, the Eighth (1992–1997) and the 9th Five-Year (1997–2002) plans of India included a sharp reduction in plan allocation in proportion to the total plan outlay
- A not-so-encouraging response from private investors led to its enhancement in the 10th Five-Year plan (2002–07).
- Power sector outlay for 10th Plan period was Rs 2,703 billion and estimated expenditure Rs 1,573 billion.

Trends in public investment



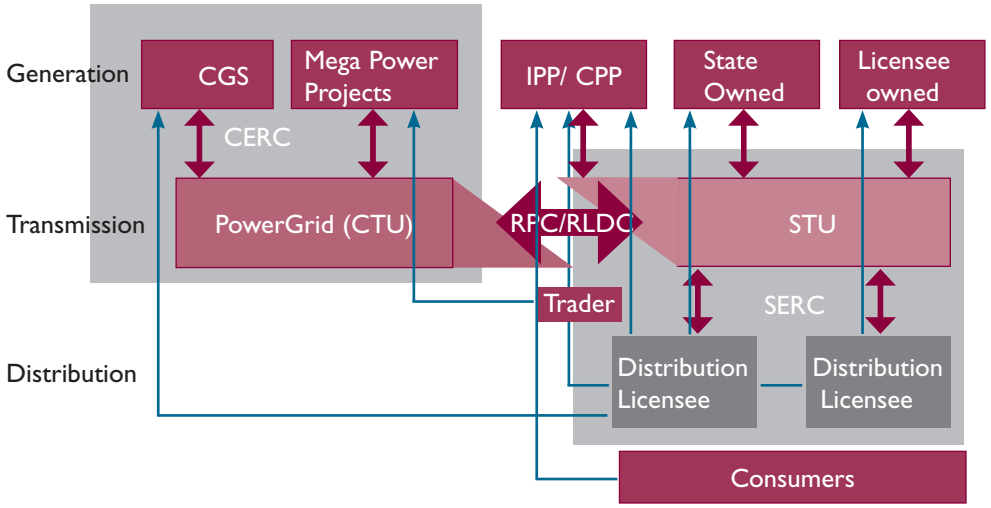
Key issues confronting the sector

- Socio-political influences
- High level of network losses
- High level of financial losses
- Inadequate generation and transmission capacity
- Poor quality of supply

POLICY AND REGULATION

Power market structure

Stakeholder outlook has been slowly improving



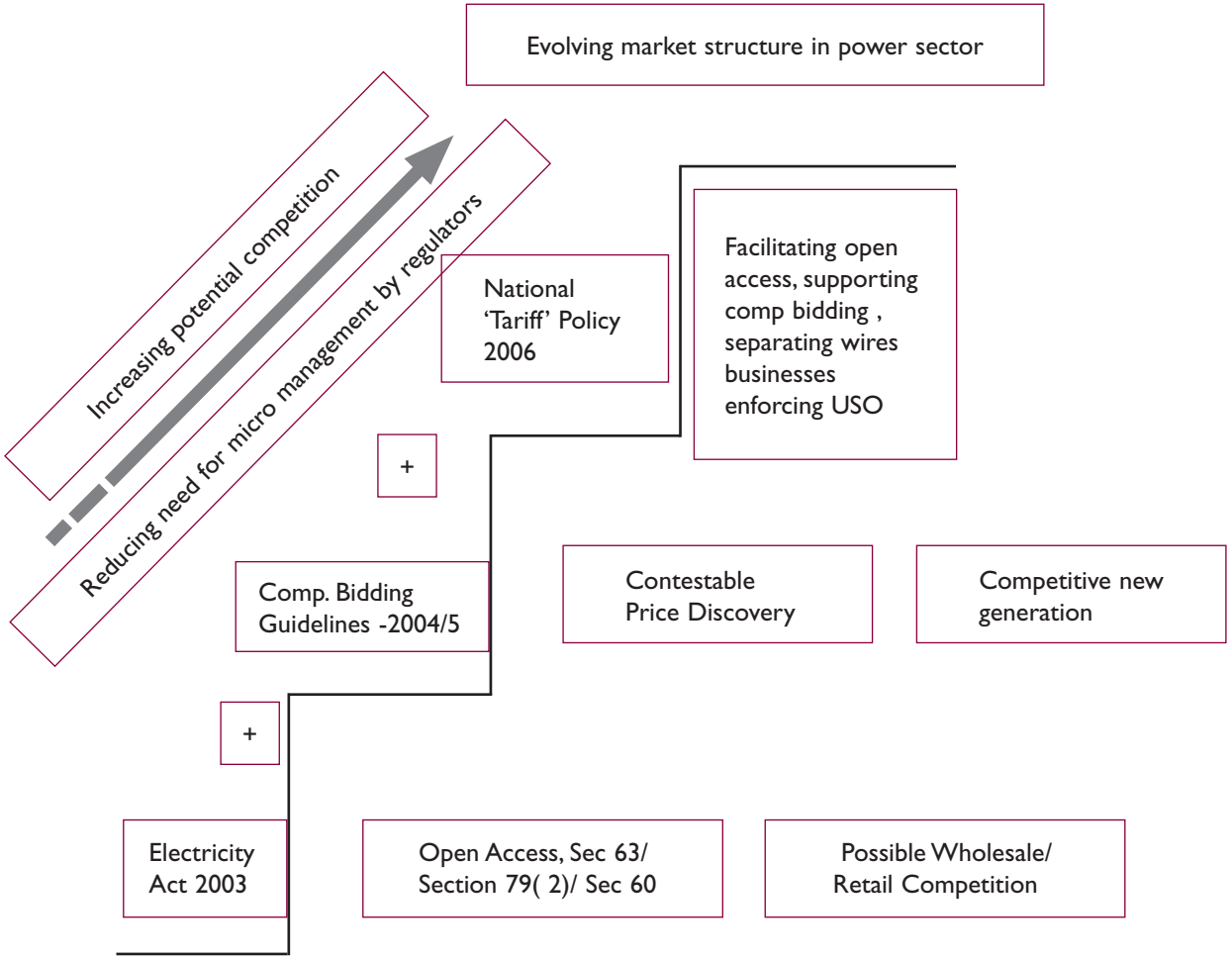
Improved policy & regulation regimes

Recent policy/regulatory actions

EA 2003 introducing

- Non-discriminatory open access to transmission at least
- Section 63 and – ERCs to follow competitive bidding process
- Section 79(2) - CERC to advise GoI on promoting competition
- Section 60 – Controlling abuse of market power

Market evolving -- competitive structure & minimal regulatory micro-management market power



Improved policy & regulation regimes

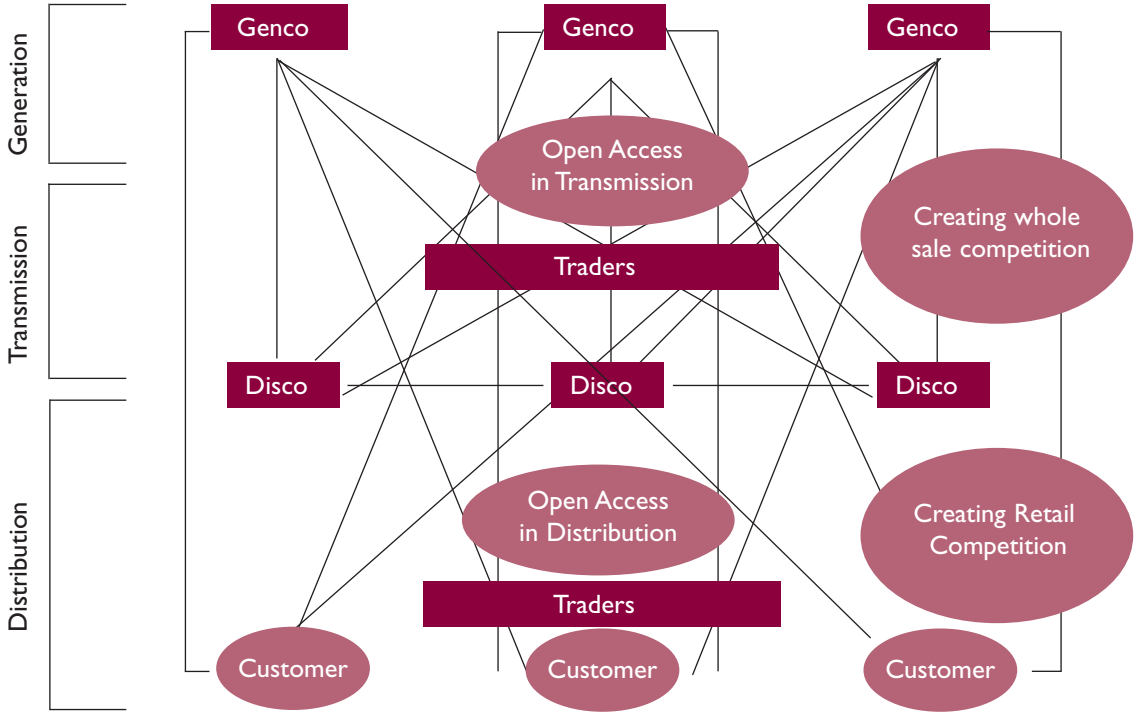
Competitive Bidding Guidelines - 2004/05

- Competitive acquisition of new generation – contestability

National Tariff Policy – 2006

- Promoting retail competition
- Supporting competitive acquisition of generation capacity
- Enabling choice

Enabled Market Model under EA 2003



Impact on Industry structure under EA 2003

Generators

- Long Term PPAs
- Licensing of capacity; extended project lead times
- Need for guarantees
- Restrictions on captive generation

Transmission

- Bulk Supply Tariffs (BST)
- Single Buyer Model (SBM)
- Natural monopolies
- No private investment

Distribution

- Retail Supply Tariffs
- Monopoly over consumers
- Lopsided tariff structure
- Power Theft
- Poor collections

Consumers

- Unreliable supply
- Poor quality

→

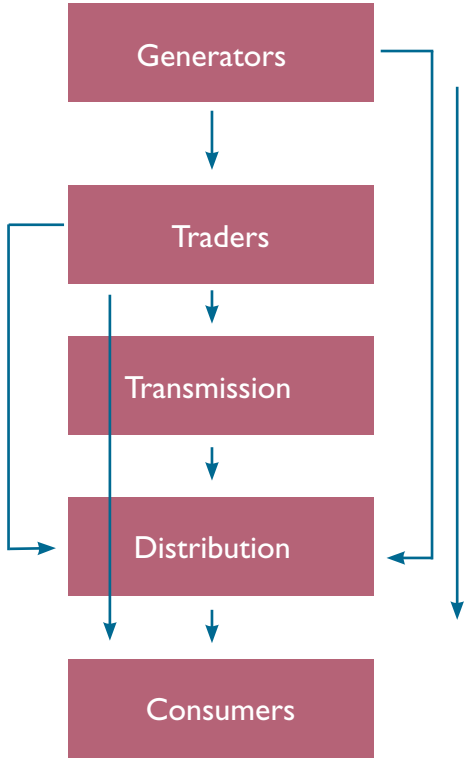
- Free access to consumers and traders of choice
- No restrictions on captive generation
- Reduced lead times
- Reduced financial and regulatory risk

- Provisions to develop a robust power trading market
- Will mitigate off-take risk for generators
- Will balance inter-regional disparities in power availability

- Non -discriminatory open access to transmission lines
- Multi Buyer Model
- Private captive investment allowed

- Open access (in 5 years)
- Surcharge on open access (not applicable to captive generation)
- No monopoly over consumers
- Parallel distribution networks allowed
- 100 per cent metering targeted

- Consumer choice available



EA 2003 provides institutional framework

Government Owned Vertically Integrated Monopoly

- Unbundled Utilities
- Privatized Distribution
- Multiple Distribution Licensees
- Non-discriminatory Open Access

Expected Outcomes

- Reduction in Losses
- Regulated Cost Reflective Tariff – phasing out cross subsidies
- Competition in Generation and Retail Supply
- Internal resource generation
- Private sector resource mobilization
- Improved Reliability and Quality of Supply

A range of fiscal incentives have been introduced

Mega Power Policy

- Eligibility : Inter-state projects of 700 MW (thermal) and 350 MW (hydro) for Jammu & Kashmir and North Eastern states; 1,000 MW (thermal) and 500 MW (hydro) for others.
- Exemption from custom duties, excise & central levies.
- Increased ECB capital limits.
- State Implementation support.
- Decreased import duty on fuel i.e. coal & liquid fuel
- Deemed export benefits to domestic bidders
- Price preference to PSU bidders
- Preconditions: Purchasing state must have ERC; Must agree in principle to privatize distribution in cities of >10 million population

100 per cent FDI allowed in Indian Power Sector (except Nuclear)

Rapid large scale capacity addition through UMPP

Ultra Mega Power Projects

- Nine sites identified ; Each project size about 4,000 MW; Total estimated investment of Rs 160 billion.
- Projects to be completed on built-own-operate (BOO) basis.
- Successful bidder finalized on tariff based competitive bidding; Takes over SPV from PFC.
- PFC is the nodal agency for setting up the special purpose vehicle (SPV) for project (100 per cent subsidiary)
- Projects to use supercritical technology based on pithead (captive block) or imported coal (coastal).
- Full exemption of central excise duty on goods procured under supercritical technology.
- Five coastal sites identified including Mundra in Gujarat awarded to Tata Power.

Rapid large scale capacity addition through UMPP

Ultra Mega Power Projects

- Four pithead sites include Sasan in Madhya Pradesh awarded to Reliance Energy.
- Power ministry to facilitate coordination with other ministries and state governments involved for
  - coal block allocation/coal linkage, environment and forest clearances, water linkage, allocating power to different states, facilitating PPAs and securing payment mechanism at the state level.
- PFC responsible for facilitating
  - bidding process, land acquisition, clearances and approvals, and securing coal blocks etc.

OPPORTUNITIES IN THE INDIAN POWER SECTOR

Opportunities – macro perspective

- Electrification of households by 2010 – about 44 per cent yet to be electrified.

Perspective Announced: 2012

- Per capita availability of 1000 units – 704 units at present.
- Installed capacity over 2,00,000 MW – 1,47,806 MW installed at present.
- Inter Regional Transmission Capacity 37,000 MW – 17,000 MW at present.
- Energy Efficiency/conservation savings about 15 per cent.
- Quality and Reliable power supply – tremendous gaps

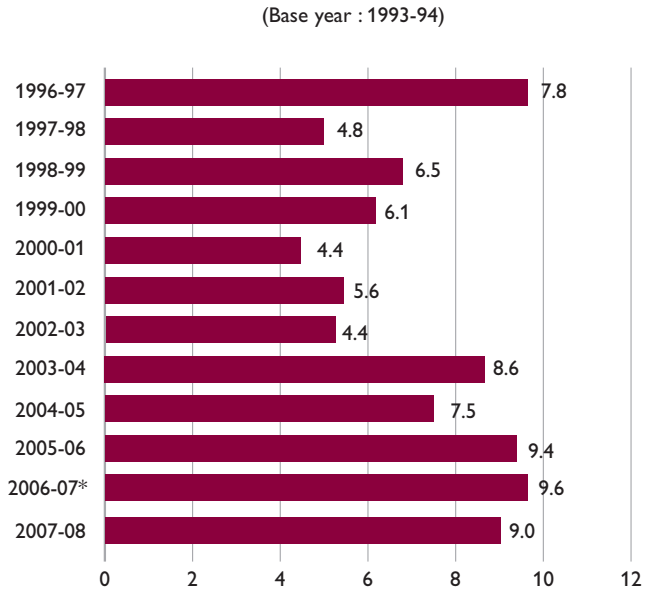
The scale of requirements have opened up significant opportunities

Source: MoP, GoI

Sustained GDP growth will require similar growth in the power sector

- Annual GDP growth rate of about eight per cent would necessitate a 9-10 per cent growth rate in the Indian power sector.
- Lower than nine per cent GDP growth rates expected during 2008-09 and 2009-10 are likely to affect projected power sector growth rates adversely. Situation likely to improve by the end of 11th Plan Period.

India's GDP Growth rate %



* Quick estimate; #Revised estimate

Multiple Investment Opportunities

Foreign Investment:

- 100 per cent FDI is allowed in all segments of power sector including Trading
- No discrimination between domestic or foreign investors

Fiscal incentives:

- Zero customs duty on import of capital goods for Mega Power Projects
- Income tax holiday for generating plants for 10 years

Multiple Investment Opportunities

Impressive progress in project execution:

- Public sector investment also stepped up to supplement the private sector
- 55,000 MW already under execution.
- Up to Rs 131 billion committed for 2008-09; Rs 80.4 billion for transmission (Power Grid)
- Financial closure of 6,661 MW achieved so far in private sector generation projects
- Financial closure/ appraisal of another 15,956 MW under private sector still to be completed

Power requirement projections show scale of opportunity

- Huge opportunities exist in the power sector in the longer term, considering the demand-supply gap

Year	Total Energy Required (Billion kWh)		Projected Peak Demand (GW)		Installed Capacity Required (GW)	
	At GDP Growth Rate of		At GDP Growth Rate of		At GDP Growth Rate of	
	8%	9%	8%	9%	8%	9%
2011-12	1097	1167	158	168	220	233
2016-17	1524	1687	226	250	306	337
2021-22	2118	2438	323	372	425	488
2026-27	2866	3423	437	522	575	685
2031-32	3880	4806	592	733	778	960

Required investment scale – ample scope for sector investments

- For a capacity addition program of 1,00,000 MW, investments of about US$ 100 Billion needed
- Additional US$ 100 Billion needed for augmentation of Transmission, sub-transmission and Distribution networks, and Rural electrification
- Total US$ 200 Billion
- 20 per cent of the total requirement expected by Private players

Electricity Act 2003 provides enabling framework

A range of generation opportunities exist

Enablers

- Generation Delicensed
- Clear and transparent tariff setting principles
- Competitive bidding for power procurement by licensees
- Open access
- Captive policy
- Incentives for Rural Electrification
- Evolution of power markets
- New hydro and R&R policies
- Captive coal mining blocks
- Second priority after fertilizer for gas allocations
- Other infrastructure development

A range of generation opportunities exist

Opportunities

IPP

CPP

Target Markets

- Distribution licensees
- Industrial Consumers
- Rural areas

Transmission opportunities abound

Independent Power Transmission Company

Private players can construct, operate and maintain transmission lines

Interregional Link Operations

Private transmission facilities may either take the form of an independent power transmission company or a joint venture with the state-owned transmission utilities

Transmission opportunities abound

Merchant Transmission Capacity for Open Access Customers

Transmission licensees to allow non-discriminatory open access to their network on payment of

- Transmission charges and
- Surcharge for cross subsidy, applicable to direct consumers only

The first Transmission Line on JV Route has been executed with M/s TATA Power and Power Grid for transmission system associated with Tala HEP & East-North inter-connector.

Power Sector investment Development scenario

Witnessing the Changes

- Regulatory Commissions constituted in 22 states
- Tariff orders, performance standards, terms and conditions of supply and tariff notified
- Unbundling of the State Electricity Boards (SEBs)
- Distribution reforms initiated
- Orissa and Delhi distribution privatized
- Recovery from SEBs regularized after securitization
- Principles of multi-year-tariff (MYT) regime proposed for further privatization
- Stability of past contracts (except Dabhol Power)
- Private franchise model introduced in Maharashtra for power distribution

Power Sector investment Development scenario

Development Initiated

- Large capacity addition plans firmed up by Central PSUs and private sector majors (Tata Power, Reliance, Torrent)
- Smaller players also have major expansion plans (GVK, GMR)
- Earlier fringe players (captive generation) entry into the IPP sector (Jindal, Essar)
- Entry of more number of players for takeover of new privatized distribution
- System development plans initiated by discoms to meet ERC determined loss reduction target in many states

Key Domestic Players

Generation

National Thermal Power Corporation Limited

- Sixth largest thermal power producer in the world and India's largest power producer; state owned player operating across the country

Tata Power

- The Tata group pioneered power generation in India nine decades ago. Tata company has presence in all segments - Thermal, Hydro, Solar, Wind Energy, Transmission & Distribution

Key Domestic Players

Generation

Reliance Energy Ltd

- India's leading integrated power utility company in the private sector. It has a significant presence in generation, transmission and distribution of power in the states of Maharashtra, Goa and Andhra Pradesh.

Torrent Power

- Entered the power sector by acquiring two old Gujarat state owned electricity companies and turned them into power utilities comparable with the best. Also involved in power distribution.

Key Domestic Players

BHEL

- 14 manufacturing plants
- Installed 85,786 MW equivalent power generation units for utilities, captive and industrial plants.
- Supplied over 2,25,000 MVA transformer capacity and other equipment for T& D network up to 400 kV (AC & DC).
- Current capacity of 10,000 MW to be augmented to 15,000 MW by December 2009.
- BHEL has set up Asia's first 6.2 MW IGCC power plant. Also signed an MoU with APGENCO for setting up a 125 MW IGCC plant at Vijayawada.

Key Domestic Players

Strengths of BHEL

- Improvement on design philosophies to suit Indian conditions based on vast experience.
- Developed technologies/retrofits to improve the performance e.g.
  * Smart Wall Blower System
  * Gravimetric feeders with micro processor controls
  * Steam Tube Leakage Detection (STLD) system
  * By-pass Over Fire Air System – NOx Control
  * High efficiency BFP cartridge.

Foreign players entered/planning to enter India

- AES Corporation
- CLP Power
- Sumitomo

Private and foreign participation in Power sector

- Major investors in the Indian Power include CMS Energy, Unocal, Woodside Petroleum, Siemens, ABB, AES Transpower, Powergen, CLP, PSEG, Tractabel.
- CMS holds around 20 per cent stake in 235 MW gas/naptha fuelled combined cycle power project promoted by GVK Reddy group at Jogurupadau in Andhra Pradesh.
- CMS Energy and ABB are the major promoters of the 250 MW lignite based power project at Neyveli, Tamil Nadu.
- CMS Energy along-with Unocal, Woodside Petroleum and Siemens are part of a consortium which plans to set up a 1885 MW LNG based power project at Ennore, Tamil Nadu.

Ansaldo Caldie (India)

- **Joint Venture between Ansaldo Caldaie (85 per cent) and GB Engineering (15 per cent)**
- **Product Range:**
  - Design, Manufacture and Supply of Utility Boilers and HRSGs
- **Manufacturing Facilities in India:**
  - Trichy - In JV with existing manufacturers (established)- Specialized Manufacturing bays for products like Burners, Ljungstorm Airheaters, etc.
  - Tuticorin - New Facility to augment the manufacuturing capability in India –investments for future big projects including large (Year 2008)

Ansaldo Caldie (India)

- Projects Handled in India:
  - 1980's — 3 X 200 MW Coal Fired Boilers for NTPC Ramagundam
  - 1990 — 2 X 500 MW Coal Fired Boilers for NTPC Farakka
  - 1998 — 1 X HRSG for 230 MW GT for Reliance Energy, Samalkot
  - 2003 — 2 X 210 MW Lignite Fired Tower Boilers for NLC, Tamil Nadu

L&T – MHI Boilers Pvt Ltd

- JV Established on April 18, 2007 by L&T (Larsen & Toubro Ltd.) – 51 per cent Shares MHI (Mitsubishi Heavy Industries) – 49 per cent Shares
- Investment : US$ 167 Million
- Capability : 3,000 - 4,000 MW per annum
- Factory : Operation within 18 months
- Employee : 1,250
- Location : Delhi and Surat

Alstom Hydro

- ALSTOM HYDRO has developed the BARODA facility from 2004 as an autonomous Manufacturing and Project Execution facility with two objectives:
  - to participate in the expansion of the Indian domestic market for hydro power with a strong determination to execute major projects
  - to execute export hydro projects from India.
- 12 major high capacity machines in operation today; all have been fully refurbished between 2005 and 2007.
- Four more heavy machines will be in operation by March 2008, increasing production capacity to 900,000 hours

Alstom Hydro

- Key Projects executed/under execution:
  - VishnuPrayag (2 x 100MW, India) - Pelton runner repair
  - Chuzachen (2 x5 5 MW, India) - Complete Turbine & Generator
  - Chamera III (3 x 77 MW, India) - Complete Turbine & Generator
  - Subansiri (8 x 250 MW, India) - Complete Turbine & Generator
  - Uri II (4 x 60 MW, India) - Complete Turbine & Generator

Toshiba Corporation

- **Toshiba – hydro power projects in India**
  - KOLDAM 4 x 200 MW, HEP
  - TEESTA-V (3x170MW)
  - UMIAM I&II HEP(4x10.5MW, 2x9MW)
  - UMIAM-I R&M (2003)
  - PURULIA PUMPED STORAGE, HEP (4x225MW)
  - DAM (2x10.6MW Turbine)
  - HAMPI (2x10.6MW Turbine, 1962)
  - SSNNL (6 x 200 MW), HEP

VA Tech Hydro

- VA TECH HYDRO is the first foreign company to set-up hydro manufacturing facilities in India
- Capability for turnkey execution of complete electrical Electro-Mechanical works
- Manufacturing facilities for:
  - Turbines, Governors, MIV & Auxiliaries
  - Hydro Generator, Excitation, Automation & Protection Systems
- Orders in hand/completed
  - Over 3000 MVA installed/order booked
    - Hydro (New): 1600 MVA
    - Hydro (R&M): 1400 MVA

VA Tech Hydro

- Over 550 MW of Compact Hydro plants executed
- Over 144 nos. Excitation Systems installed/ order booked
- Over 200 nos. Governors installed/order booked
- Supplies all over the world (18 countries in five continents)

FDI outlook has been improving steadily

Actual FDI inflows in Power Sector – 2000 to 2008 (Rs. Million) – trend is positive

	2000	2001	2002	2003	2004	2005	2007	Up to Sep 2008
FDI in power sector	4760.2	8225.1	30494.6	1907.4	2510.6	1518.5	3,875	2,285
Total FDI inflow	100,923	158,419	161,234	95,640	147,814	192,707	98,664	120,531
Share of power sector (%)	4.72	5.19	18.91	1.99	1.7	0.79	3.92	1.89

FDI outlook has been improving steadily

Foreign holdings in select Indian power companies – trend is +ve

	Sector	Majority ownership	31 December 2004	31 December 2005	31 March 2006	30 September 2008
NTPC	Generation	Public	4.84	6.86	7.07	4.25
BHEL	Equipment Manufacturer	Public	20.56	22.07	22.42	16.62
CESC	Generation & Distribution	Private	15.08	17.20	19.19	23.28

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