

A case study of the Dabhol Power Plant

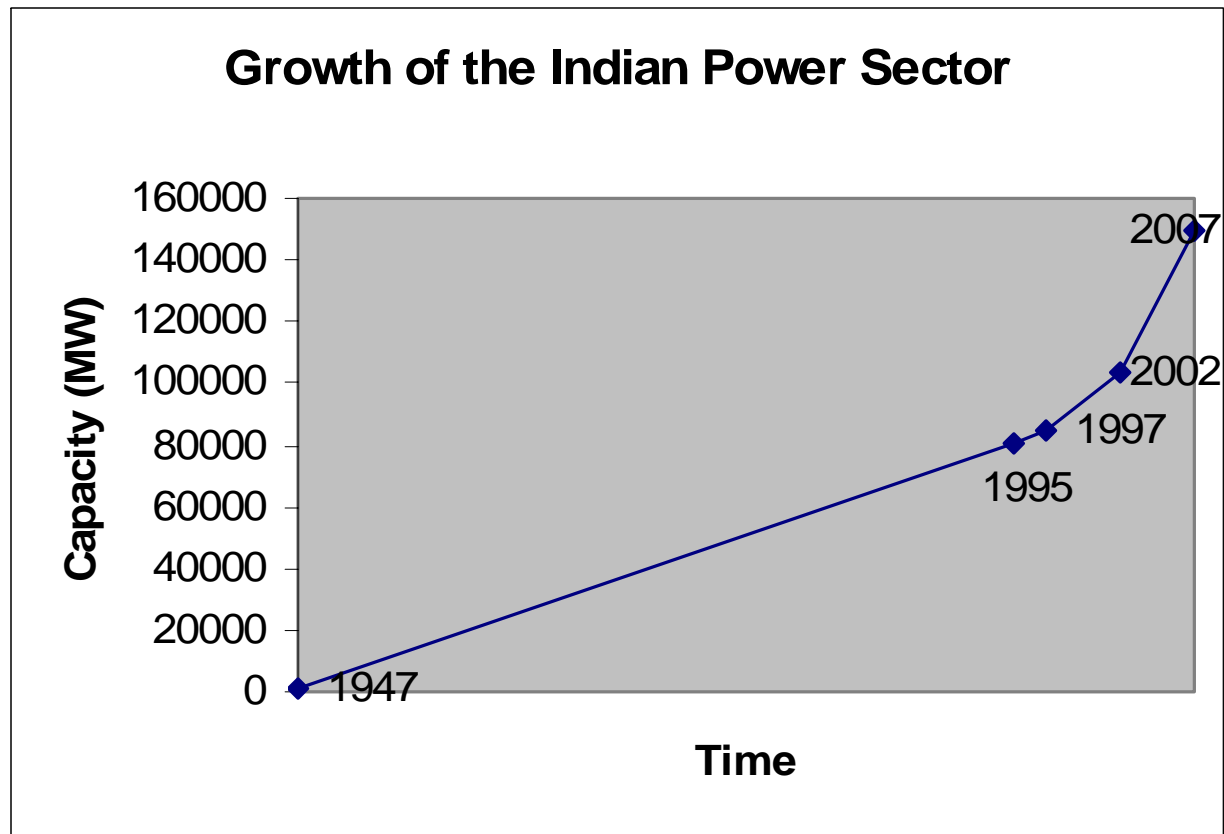


Agenda

1. The Dabhol Case

Case Facts

- Demand for power in India was set to grow in 1995

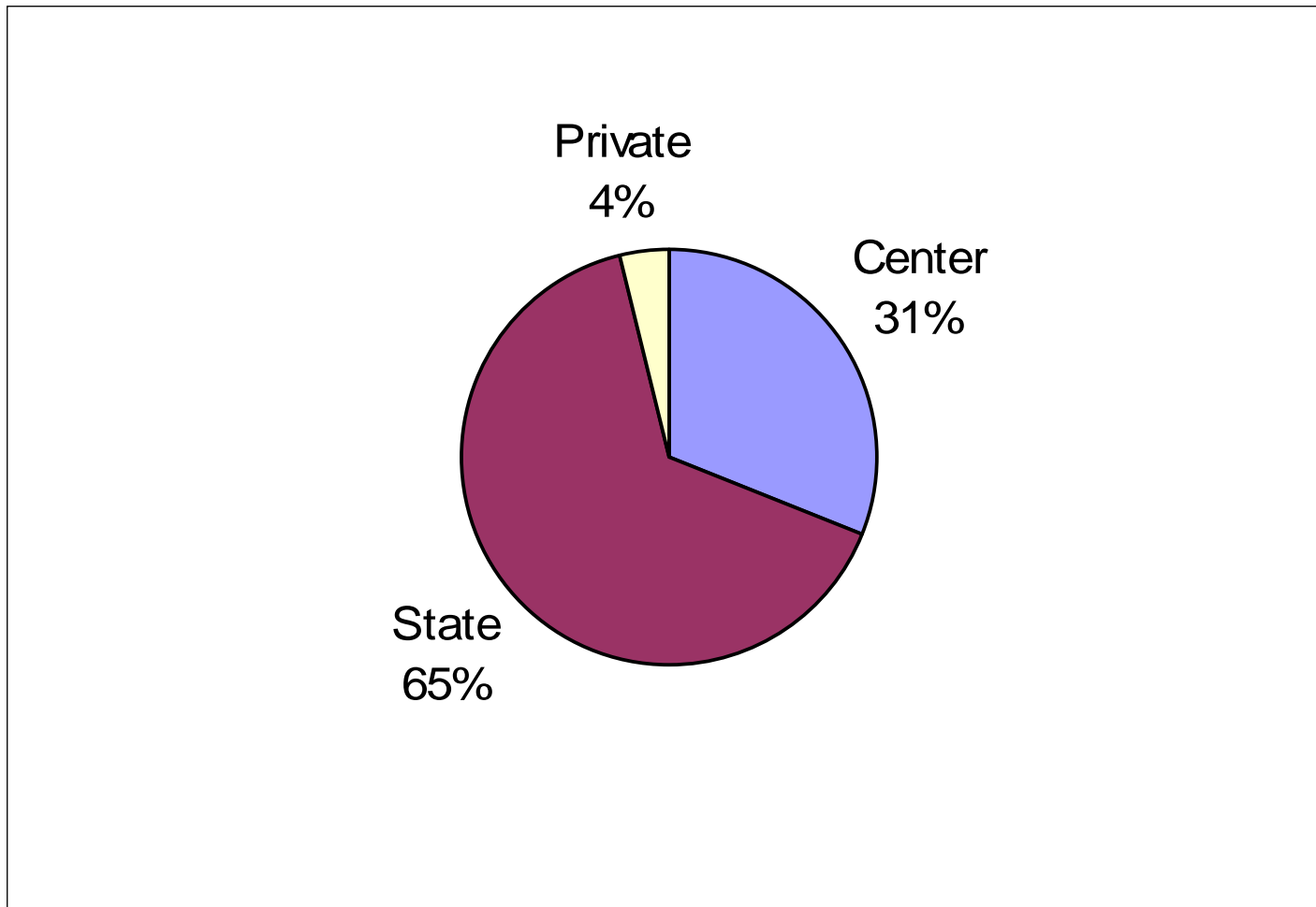




Case Facts

- Current Power capacity was inadequate to meet India's needs.
 - Energy Deficit of 18% was recorded according to the 8th Five year plan (1992-1997)
 - Frequent Power cuts all over India

Power Generation in India in 1995



Trend in Power Generation according to the 8th Five Year Plan (1992-1997)

□ Private Sector Participation

- 8.65.9 The public sector alone will find it difficult to raise sufficient resources to invest on new power generation projects for meeting the rapidly increasing demand for electricity in the coming years. **The Eighth Plan, therefore, places considerable emphasis on attracting private investments for power development.** The major changes in policy announced recently by the Government are expected to promote private sector participation in power development in the coming years. As already stated, the feasible addition of 30,538 MW during the Eighth Plan includes **2,810 MW of private sector projects.** It is expected that about **3,000 MW of additional capacity will materialise** over and above what has already been envisaged as indicated above in the private sector during the Plan period. This will supplement the capacity additions in the public sector.



Power Distribution in India

- SEB's (State Electricity Boards) had a monopoly of power distribution within the states
- Many SEB's were close to bankruptcy at the time of the project as indicated in balance sheet in the next slide
 - Tariffs were less than operating costs
 - Agricultural users got large subsidies (contribute only to 4% of revenue)
 - Industrial users set up captive power plants
 - Capacity Utilization was low (Plant load Factor of about 50%)
 - Large T&D losses (22%)

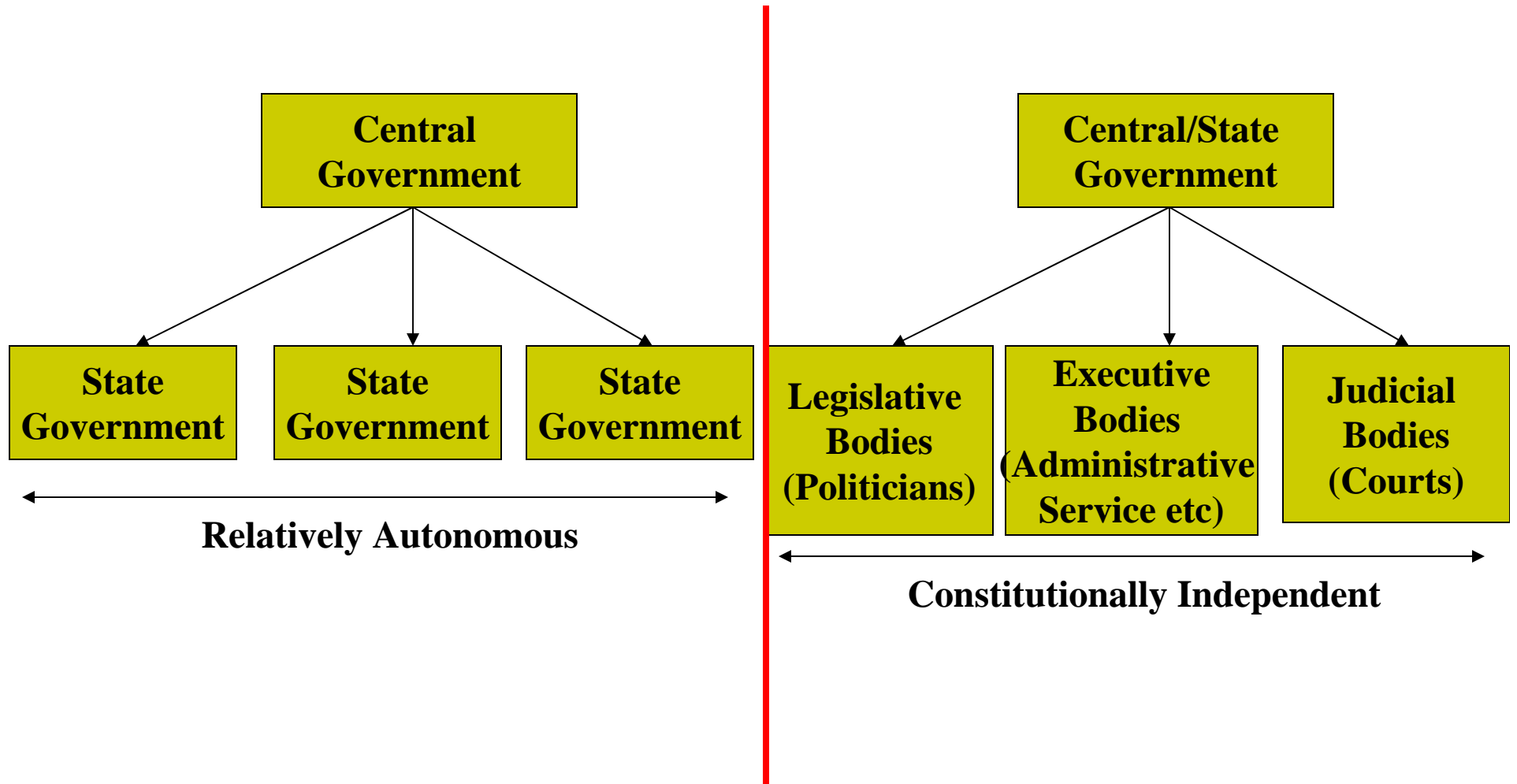
	1991-92	2000-01 (Prov.)	2001-02(AP)	2001-02 (RE)	2002-03 (AP)
A.					
(i) Subsidy involved on account of sale of electricity to					
(a) Agriculture	5,938.00	24,074.13	29,481	25,571.10	26,959.30
(b) Domestic	1,310.00	9,988.04	11,267	10,884.14	11,651.01
(c) Inter-state sales	201.00	385.51	510	247.36	225.89
Gross subsidy	7,449.00	34,427.68	41,238	36,712.59	38,836.20
(ii) Subventions received from state governments.	2,045.00	8,820.33	8,370	10,099.16	7,980.84
(iii) Net subsidy	5,404.00	25,607.35	32,868	26,613.43	30,855.36
(iv) Surplus generated by sale to other sectors	2,173.00	3,434.93	5,528	3,614.88	7,499.00
(v) Uncovered subsidy	3,231.00	22,172.42	27,342	22,998.56	23,356.37
B. @ Commercial losses	4,117.00	25,394.89	28,445	27,306.44	24,320.99
Commercial losses (net of state subvention)		16,574.56		17,207.28	16,340.15
C. Revenue Mobilisation					
(i) Rate of Return (ROR) #	-12.70	-41.82	-38.20	-39.48	-32.08
(ii) Additional revenue mobilisation from achieving					
(a) 3 per cent ROR	4,959.00	27,216.62	30,280	29,403.65	26,226.42
(b) From introducing 50 paise/ unit from agriculture/irrigation	2,176.00	1,637.83	1,840	1,350.44	1,329.71



Regulation of the Indian Power Industry

- The Industry was regulated at the Central or National Level
- Central Government's Ministry of Power was responsible for regulating and were in charge of decisions on
 - Capacity additions
 - Pricing/Tariffs
 - Power-related investments

General Environment in India





Reforms in India

- In 1991 the government embarked on a process of liberalizing the economy
 - Less government control
 - More private sector autonomy
- More privatization, more export focus, more FDI (100%) in power
- Tariff reforms in the power sector
 - Fixed tariff for sunk costs
 - Variable tariffs for operating, fuel costs

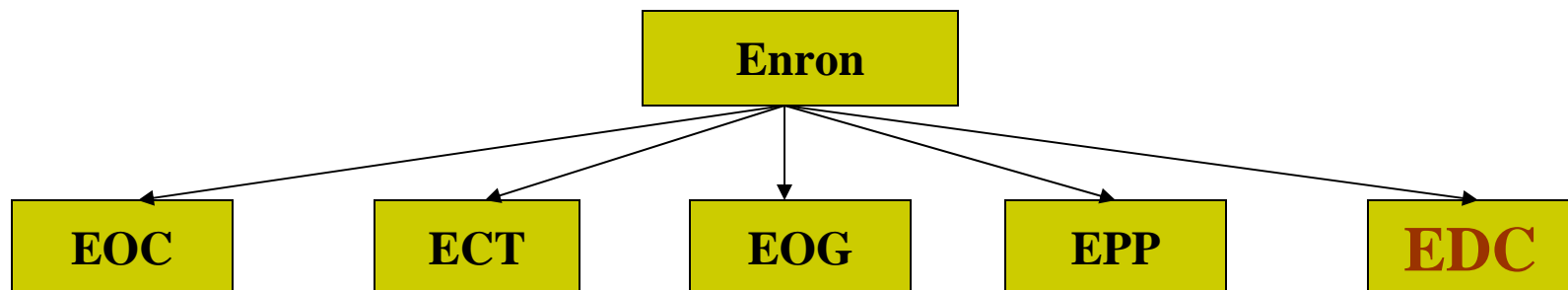


More Reforms

- Export/Import reforms were enacted to bring down costs in the power sector
- Procedural reforms in the power sector were enacted to reduce transaction costs
 - Single clearance window was created to save time in terms of getting approvals

Enron

- World-Leading Multinational firm in the natural gas industry
- In 1994
 - \$ 9 Billion in Revenue, \$453 Million Net Income
 - Fortune Magazine's "America's Most Innovative Company" in 1996
 - Enron had many subsidiaries, EDC was the subsidiary that participated in the Dabhol power project.





Enron's Approach

- Enron saw a large opportunity in India
 - To provide power
 - To earn profits
 - To obtain more projects if they were successful with their first one
- They seemed quite aggressive about this opportunity
- India fit in nicely with their global objectives at the time
- EDC Invested \$13.2 Million in feasibility studies



Enron's Approach

- Why did Enron pick Maharashtra as its entry state into India?
 - State board was profitable and this reduced the revenue risk - the state board could pay Enron for power generated
 - A large demand for power existed in the state
 - Maharashtra already generated close to 10,000MW (12% of India's generation capacity)
 - Location was close to a port making it easy to transport fuel for the power plant.
 - Maharashtra was one of India's more developed states – institutional risks were comparatively lesser



Enron's Entry Strategy

- IAS officer in charge held talks with Enron
- Enron officials spoke to MSEB who were open to entering into an agreement
- Enron proposed a phased 2000 MW LNG plant. MSEB agreed to this.
- Phased plan was drawn out to first test the concept, and then to develop the complete facility
 - 695 MW was to be developed in Phase 1
 - 1320 MW was to be developed in Phase 2



The contract

- A Power Purchase Agreement (PPA) was drawn up wherein MSEB agreed to purchase a certain quantity of power from the Enron-led Dabhol Power Corporation (DPC) at a certain tariff.
- DPC Ensured that adequate power will be made available
- MSEB took care of demand risks with PPA. Initial price was Rs 2.4/KwH
- 20 year renewable concession was signed
- Dispute resolution was done through international arbitration

Risk Analysis

<u>Risk</u>	<u>Mitigation Strategy</u>	<u>Borne By</u>	<u>Ability to bear</u>	<u>Magnitude</u>
1. Economic/ Demand	Through Contract -PPA	MSEB	Questionable	High
2. Currency	Through Contract	MSEB/GoM/ GoI	Questionable	Medium
3. Financial	Leverage Good Credit Rating	DPC	Good	Low
4. Technical	Partner with GE and Bechtel	DPC	Good	Low
5. Political	PRI, Govt Guarantees	OPIC/GoM/ GoI	Good	Low
6. Social	-	DPC/MSEB/ GoM	Questionable	Medium-High
7. Environ.	Lobby GoI, WB	DPC	Questionable	Medium



Is Enron's Strategy Good?

**Is Dabhol a good project for
Enron?**

For India? For Maharashtra?



The Saga unfolds

- Bharatiya Janata Party (BJP), a right-wing party defeats the Congress and comes to power in 1995
- BJP makes lots of nationalistic noise
 - Their leader says “we will not be dictated by foreign power giants”
- Committee prepares a report on DPC
- Project is cancelled in August 1995



Reasons for cancellation

- ❑ Lack of transparency and competition in the bid process
- ❑ Some clearances were ignored based on the ‘fast-track’ nature of the project
- ❑ Cost of the project was greater than comparable projects
 - Enron cost Rs 4.49 Cr per MW
 - Comparable projects cost Rs 3.6 Cr per MW
- ❑ Tariffs were too high
- ❑ Environmental concerns and concerns raised in a World Bank report were not addressed



The Response

- Enron went to international arbitration which ruled in its favour
- The Indian central government maintained that the contractual agreement was between Enron and Maharashtra govt and not with Center.
 - Central Govt refused to interfere
- Govt filed suit in Mumbai High Court challenging validity of Arbitration in England which was upheld
- Negotiations were re-opened in late 1995
- A Panel of 6 experts reviews the project
- A Revised proposal with major changes was accepted in May 1996

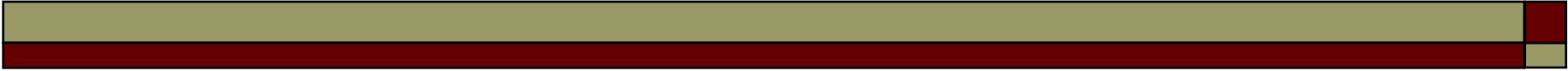
Details of Revised Contract

	Old Contract	New Contract
Power Tariff	Rs 2.4/KwH	Rs 2.03/KwH in Ph 1 and Rs 1.84 in Ph 2
Capital Costs	Rs 90.6 Billion	Rs. 64.2 Billion
Ownership	Enron-80;GE-10, Bechtel-10	Enron-65;MSEB-10%, GE,Bechtel - 10
Fuel	LNG	LNG and locally available Naphtha
Environment		Enron agrees to manage this



The conclusion

- June 2001 Phase 2 was in Progress and phase 1 was completed
- MSEB defaulted on a payment
- Counter guarantees provided by the government in the contract did not work
- Recourse to arbitration was taken once again
- At this point Enron wanted to pull out of the project



**What should Enron
have done?**

Why governments renege (Ramamurti, 2003)

Government Reneging

Economic Uncertainty

Obsolescing Bargain

Political Change

Strategies

- Comprehensive Contracts
- PPA
- Payment Guarantee
- International Arbitration

**Enron followed most
Of these**

Strategies

- Stagger Technology transfer
- Undertake investments in
•several stages

**Enron followed few
Of these**

Strategies

- Build support among public
- Build support among media
- Transparent bidding process
- Bilateral ties with home country
- Invest WB, IMF have leverage

**Enron followed none
Of these**



Conclusion

- Enron had initiated this project since it was in line with its strategy
- Enron had structured the project as a PPP very carefully, building in guarantees into the contract, signing PPAs that would ensure that the power that they generated would be bought etc. Yet the project failed.
- They may have benefited by slowing down their investment strategy
- They should have been more transparent in their approach
 - Enron should have made more attempts to garner political and social support since these were the key elements that led to project failure

Trust and relationships and perhaps some innovative and flexible contracts might have been more successful than relying purely on the contract

Thank you!
