

# OVERVIEW OF ENERGY

## (THERMAL & HYDRO)

- *Jami Satyanarayana*

**TCE Consulting Engineers Limited**



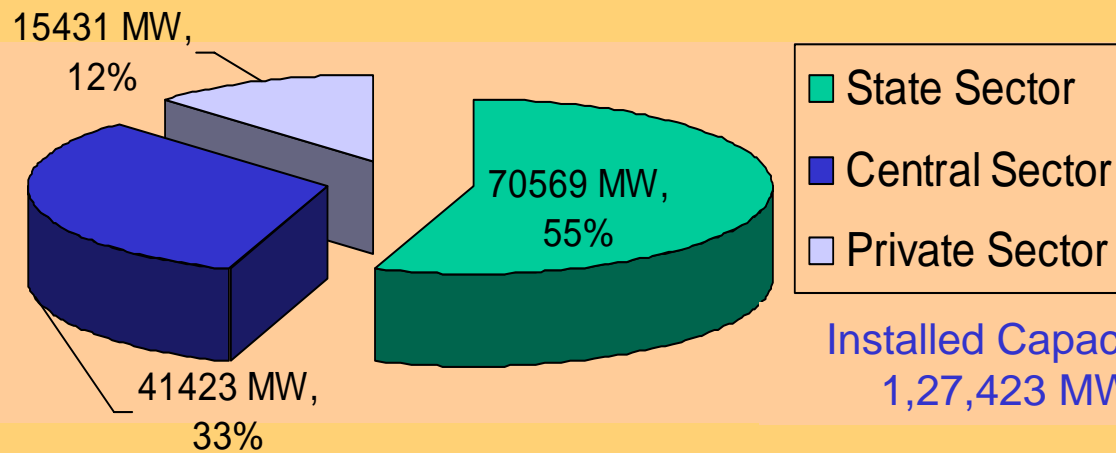
November 20, 2006

1

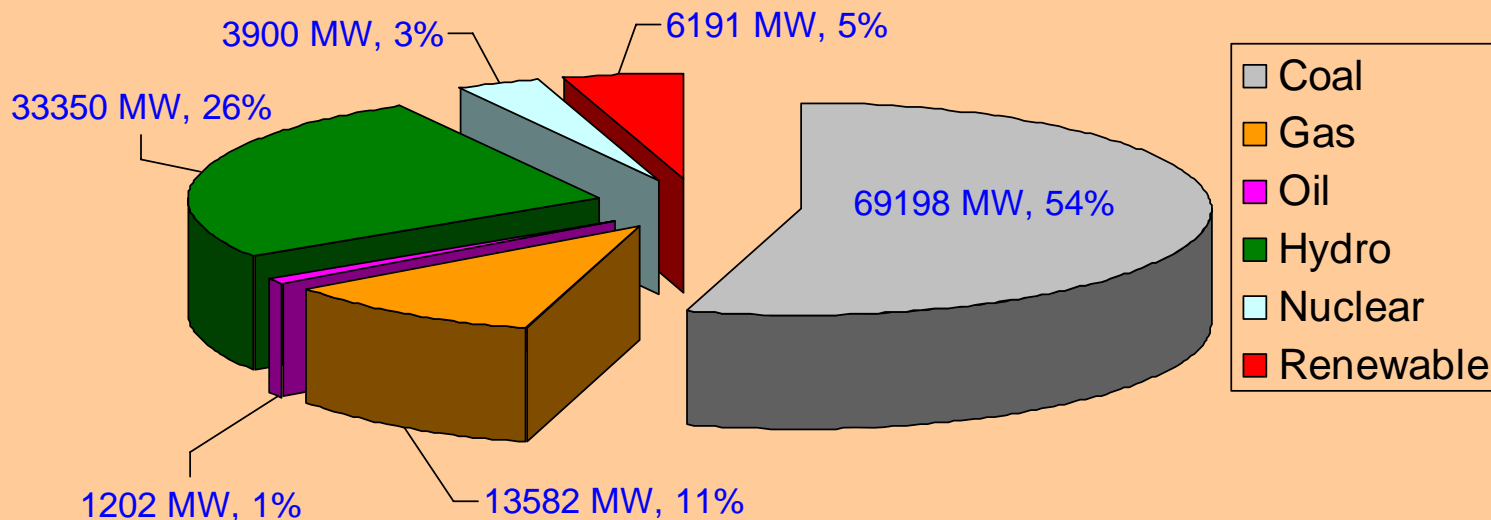
A **TATA** Enterprise

# Energy Overview

## Sector-wise



## Fuel



# Energy Overview - Requirement

Year	Energy (BkWh)	Peak Load (GW)
2001-02	529	85
2006-07	719	116
2011-12	975	157
2016-17	1319	213



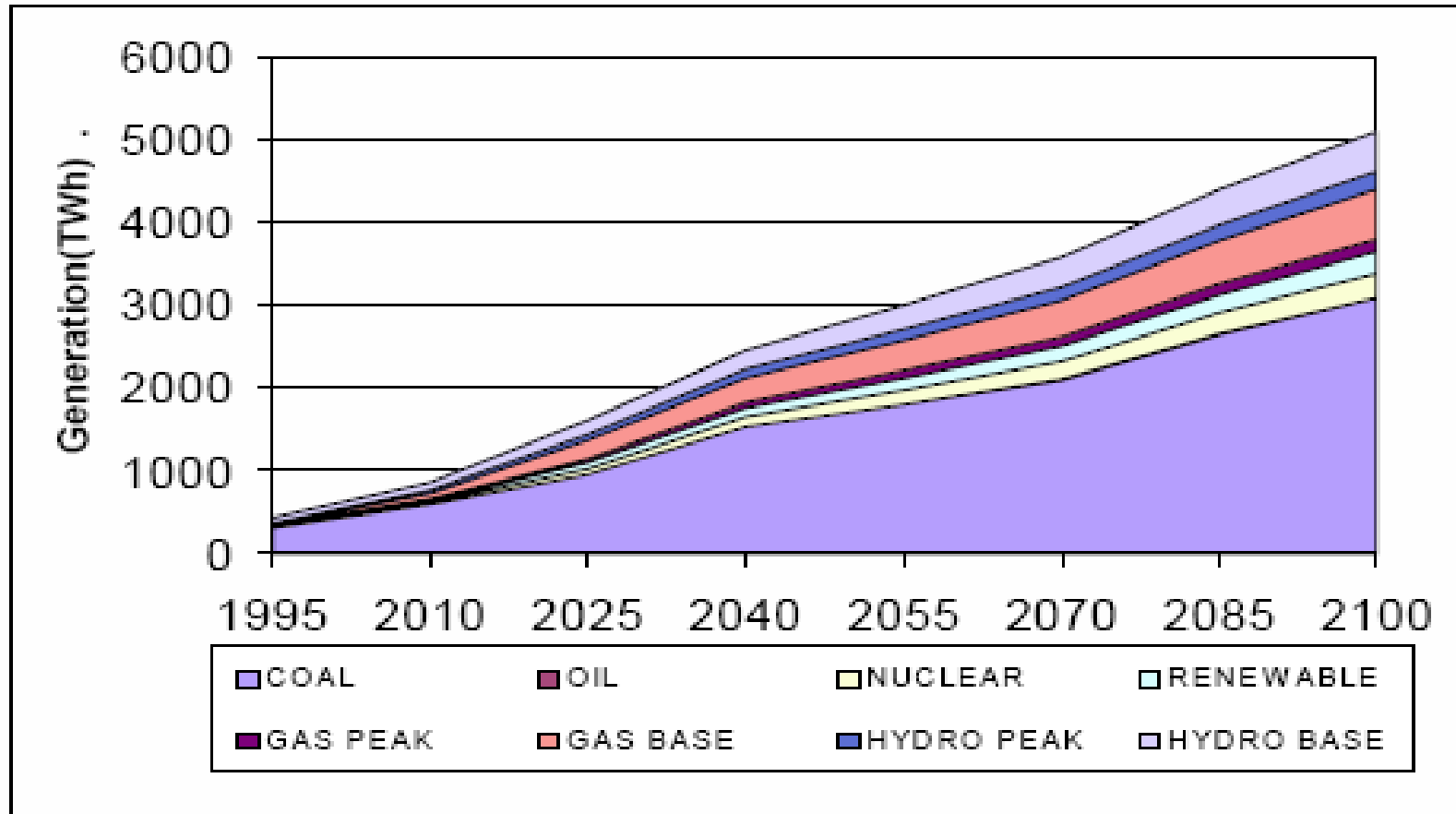
# Energy Overview - Requirement as per USA Study (\*)

History		Projection	
Year	BkWh	Year	BkWh
2001-02	529	2010	845
2006-07	719	2015	1042
		2020	1251
		2025	1474
		2030	1730
Annual % change : 4.6%			

(\*) web site : [www.eia.doe.gov](http://www.eia.doe.gov)



# Energy Overview - MARKAL Optimisation for Indian Electricity Supply



# Energy Overview - Capacity Addition

2002-07		Projected (2007-12)
Fuel	GW	GW
Thermal	25.30	39.20
Hydro	14.40	21.10
Nuclear	1.30	5.40
Total	41.0*	65.70

\* Actual achievable : 31.0 GW



# Energy Overview - Projected Capacity Addition (GW)

Year	Thermal		Hydro		Total	
	Incremental	Cumulative	Incremental	Cumulative	Incremental	Cumulative
2005-06	-	87	-	35	-	122
2006-07	14	101	3	38	17	139
2007-08	13	114	2	40	15	154
2008-09	18	132	2	42	20	174
2009-10	7	139	4	46	11	185
2010-11	4	143	7	53	11	196
2011-12	3	146	4	57	7	203



- **Non-availability of adequate funds**
- **Shortage of coal**
- **Shortage of water**
- **Power evacuation and T & D issues**
- **Securing clearances / NOCs / approvals**



## Suggestion to overcome impediments

- Encouraging more private participation
- Increasing the share of central units
- Development of additional coal mines
- Extending mega project benefits



### Suggestion to overcome impediments

- **Government to assume certain risks**
- **Acceleration of power sector restructuring**
- **Quick implementation of R&M schemes**
- **Increasing the share of hydro electricity**
- **Strengthening T&D sectors**

