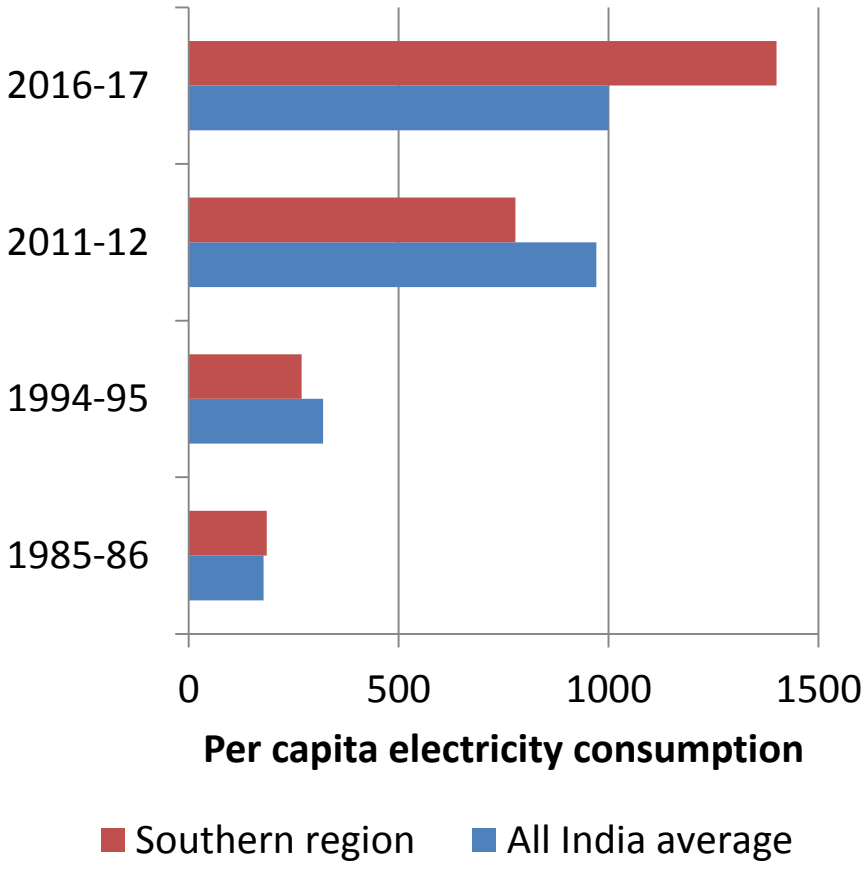
Status of new environmental norm implementation: Coal-based thermal power stations

Objective of the presentation

- Broad overview on pollution control technology for coal power generation station in Tamil Nadu, Andhra Pradesh, Karnataka and Telangana.
- To comply with the new norms action steps needed
- Discuss broadly the agenda for the round table



Source: Central Electricity Authority, 2016

TAMIL NADU

Coal-based power stations: Overview

- Number of Coal-based power in the state: 12 (8 companies)
- Total capacity: 11,960 MW
- Ownership pattern - 29% capacity belongs to state, 33% to centre and 19% to private sector, 18% to state-centre JV
- 85% of the coal has less ash content - washed (16%), blended (30%), imported (22%), lignite coal (32%)

Unit size in MW	Capacity in MW according to the year of commissioning				
	+25 years	1990-2003	2004-08	2009-16	Total
Up to 250	3780	1680		450	5910
>250 and <500		250		500	750
500 and above				5300	5300
Total	3780	1930		6250	11960

no investments if replaced Dry FGD wet FGD

Source: CSE, 2016

Particulate matter: Capacity already in compliance with new norms

Emissions in mg /Nm^3	Capacity prior 2003 in MW	Capacity post 2003 in MW
0-50	670	2850
50-100	2070	3100
100-150	1490	
150-250	320	
250-500		
500+	630	420

capacity already in compliance with the new norms

Note: *For 410 MW data unavailable*

Source: Central Electricity Authority, 2016
Ministry of Environment, Forests and Climate Change

ANDHRA PRADESH

Coal-based power stations: Overview

- Number of Coal-based power plants in the state: 13 (6 companies)
- Total capacity: 9,520 MW
- Ownership pattern - 46% capacity belongs to state, 21% to centre and 33% to private sector
- Washed, blended, imported coal – 54%; unwashed coal – 46%

Unit size in MW	Capacity in MW according to the year of commissioning				
	+25 years	1990-2003	2004-08	2009-16	Total
Up to 250	630	1,050	420	960	3,060
>250 and <500					
500 and above		1,000	500	4,960	6,460
Total	630	2,050	920	5,920	9,520

no investments if replaced Dry FGD wet FGD

Source: CSE, 2016

Particulate matter: Capacity already in compliance with new norms

Emissions in mg/Nm^3	Capacity prior 2003 in MW	Capacity post 2003 in MW
0-50		2070
50-100	500	3020
100-150	1130	210
150-250	1050	500
250-500		
500+		

capacity already in compliance with the new norms

Note: *For 1040 MW data unavailable*

Source: Central Electricity Authority, 2016
Ministry of Environment, Forests and Climate Change

TELANGANA

Coal-based power stations: Overview

- Number of Coal-based power in the state: 4 plants (2 companies)
- Total capacity: 4832.5 MW
- Ownership pattern - 46% capacity belongs to state, 54% to centre

Unit size in MW	Capacity in MW according to the year of commissioning				
	+25 years	1990-2003	2004-08	2009-16	Total
Up to 250				1332.5	1332.5
>250 and <500	500				500
500 and above	1500		500	1000	3000
Total	2000 -		500	2332.5	4832.5

no investments if replaced Dry FGD wet FGD

Source: CSE, 2016

Particulate matter: Capacity already in compliance with new norms

Emissions in mg/Nm^3	Capacity prior 2003 in MW	Capacity post 2003 in MW
0-50		
50-100	1100	500
100-150	500	1690
150-250		482.5
250-500		60
500+		

capacity already in compliance with the new norms

Note: *For 500 MW data unavailable*

Source: Central Electricity Authority, 2016
Ministry of Environment, Forests and Climate Change

KARNATAKA

Coal-based power stations: Overview

- Number of Coal-based power in the state: 4 (3 companies)
- Total capacity: 4780 MW
- Ownership pattern - 57% capacity belongs to state, 43% capacity belongs to private sector

Unit size in MW	Capacity in MW according to the year of commissioning				
	+25 years	1990-2003	2004-08	2009-16	Total
Up to 250	420	1,100		210	1,740
>250 and <500		850			600
500 and above			500	1,700	2,200
Total	420	1,950	500	1,910	4,780

no investments if replaced Dry FGD wet FGD

Source: CSE, 2016

Particulate matter: Capacity already in compliance with new norms

Emissions in mg /Nm^3	Capacity prior 2003 in MW	Capacity post 2003 in MW
0-50		1200
50-100	1360	500
100-150	1510	210
150-250		
250-500		
500+		

capacity already in compliance with the new norms

Source: Central Electricity Authority, 2016
Ministry of Environment, Forests and Climate Change

To Summarize

- Status of 30 GW utility based coal power stations
- Particulate matter up-gradation – state government plants should be driven to compliance
- FGD – In AP, TN and Telangana – about 4-7 GW in each state needs FGD retrofit. In Karnataka only 2 units require FGD retrofit
- NO_x control needs documentation
- In terms of new plants – TN and Karnataka needs to be on higher vigil

	Coal based captive generation capacity in MW
Andhra Pradesh	1041
Telangana	747
Karnataka	2408
Kerala	146
Tamil Nadu	1332
Puducherry	6
Total	5680

Source: Central Electricity Authority, 2016

Agenda: Round table

- Current role of SPCB:
    - Consents to new plants
    - Renewal of consents
    - Data collection through Inspection reports – monitoring status of construction, etc.

- Is this sufficient or any more modifications needs to be done to push implementation of the new standards?