Status of India's 1st Biennial Update Report (BUR)

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Climate Change Governance in India

- PMs Council on Climate Change
- MoEFCC at National Level
- State level Nodal Agencies – DST/Deptt of environment & Forests

Addressing Climate Change

- National Action Plan on Climate Change
  - Water
  - Agriculture
  - Green India Mission
  - Himalayan Ecosystem
  - Sustainable Habitat Mission
  - Solar Mission
  - Enhanced Energy Efficiency Mission
  - Knowledge Mission
- State Action Plan on Climate Change
  - 28 States
  - 7 Union territories

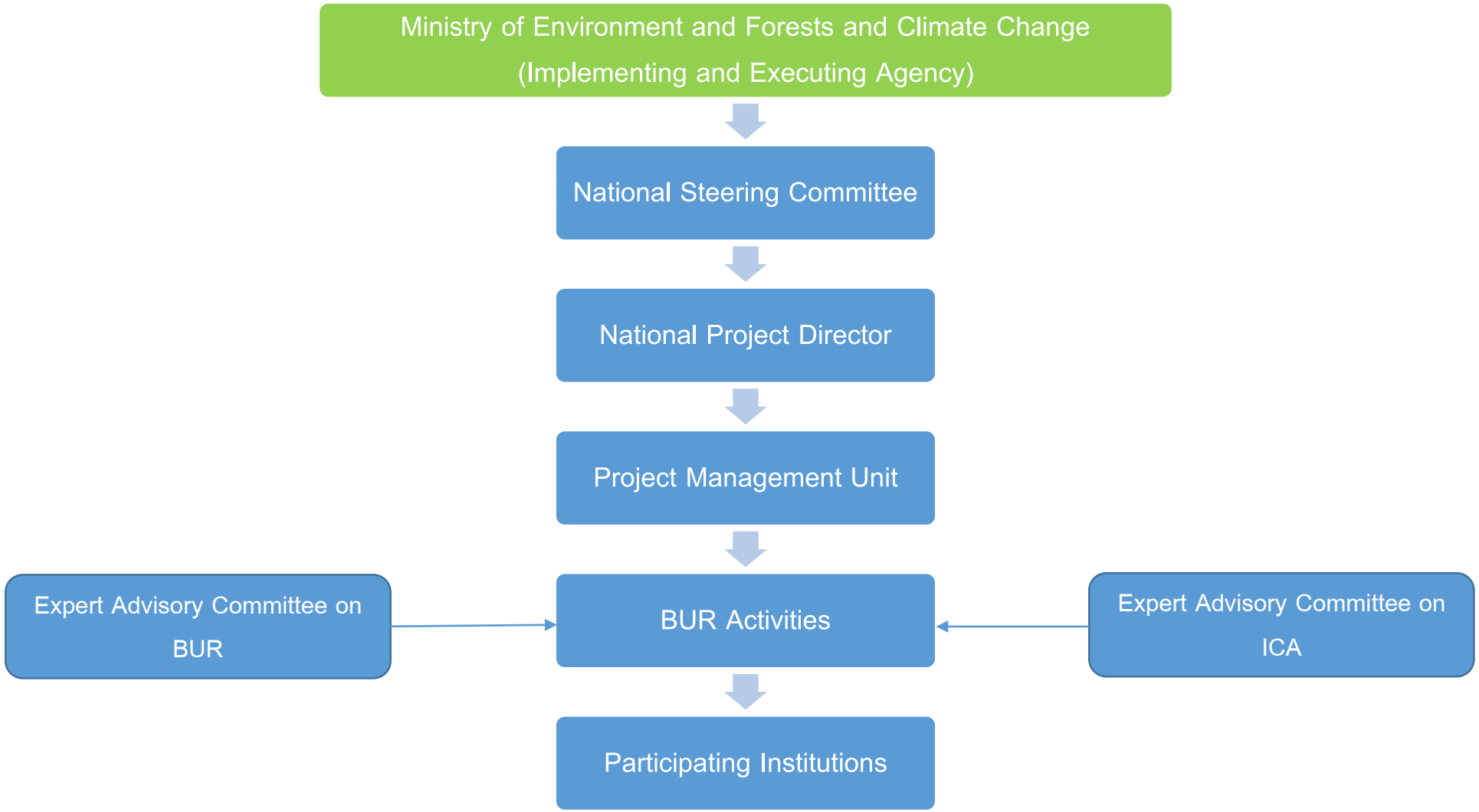
BUR-UNFCCC Context

- BUR from non-Annex 1 countries is to be reported for the 1st time in response to
  - Decision 1/CP.16, paragraph 60 c
  - Decision 2/CP.17, paragraph 14

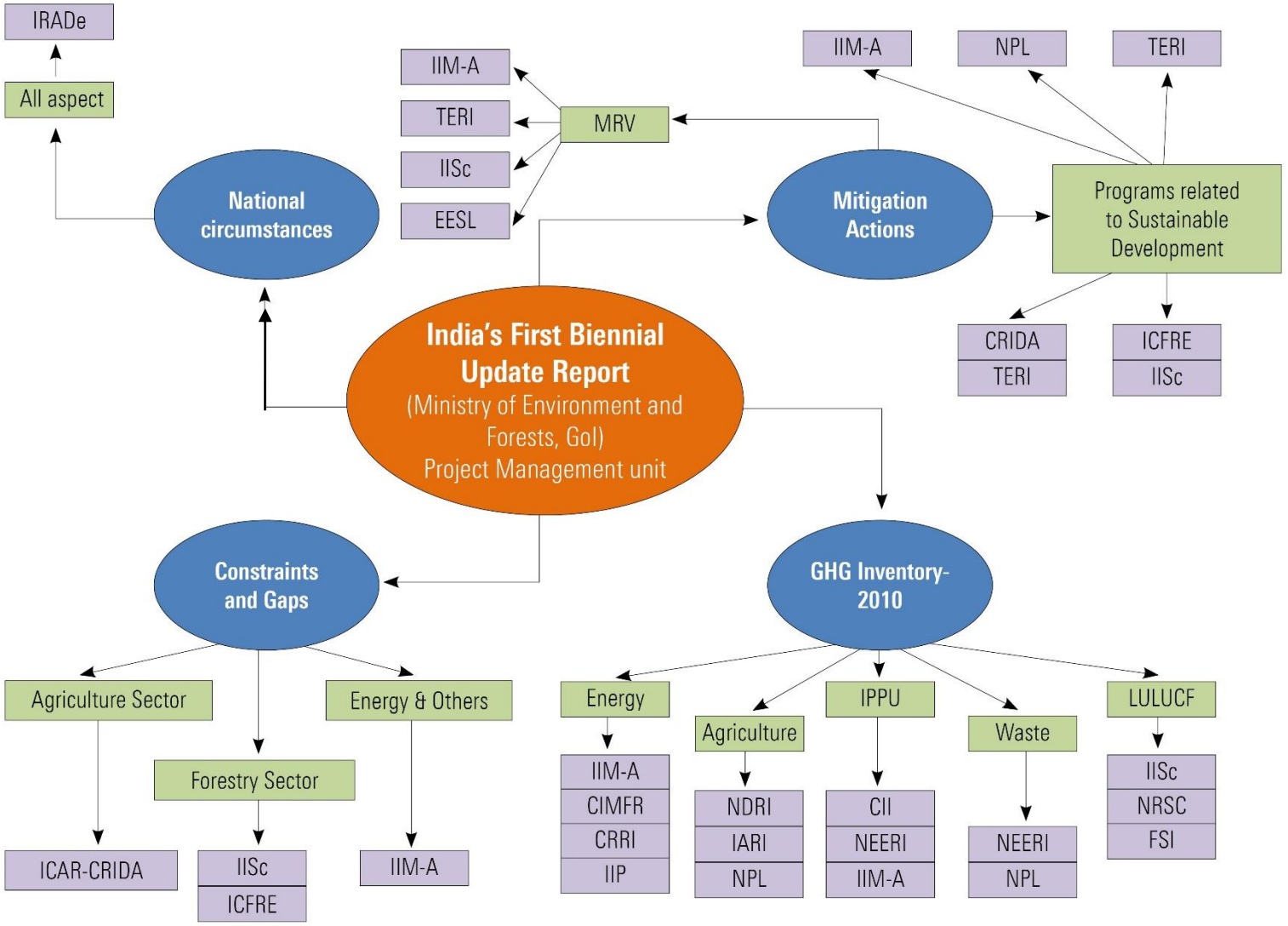
Content of India's 1st BUR

- Executive Summary
- Full Report
  - Background Information and Institutional Arrangement
  - National Circumstances
  - National Greenhouse gas Inventory Trends
  - Mitigation Actions
  - Financial, Technology and Capacity Building Needs and Support Received
  - Domestic Measurement, Reporting and Verification Arrangements
  - Additional Information

Implementation Arrangement

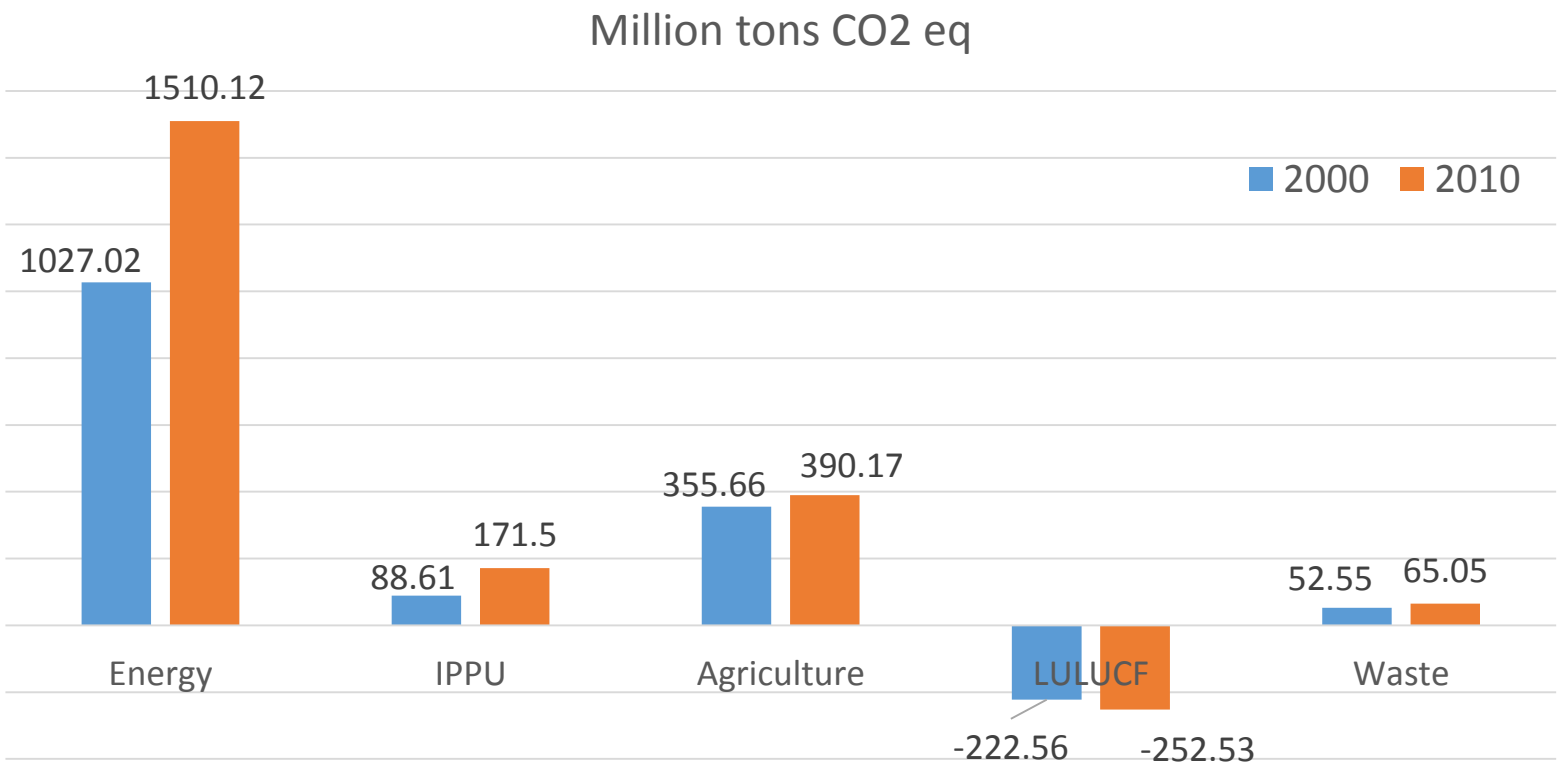


Institutional Network

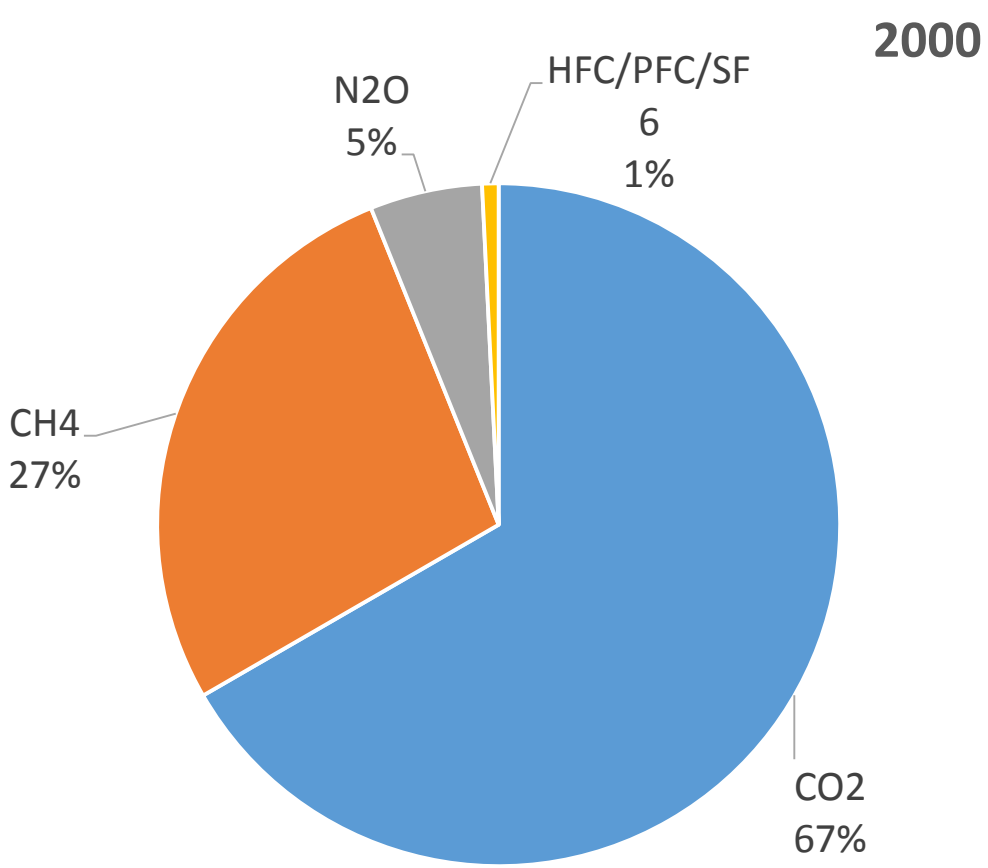


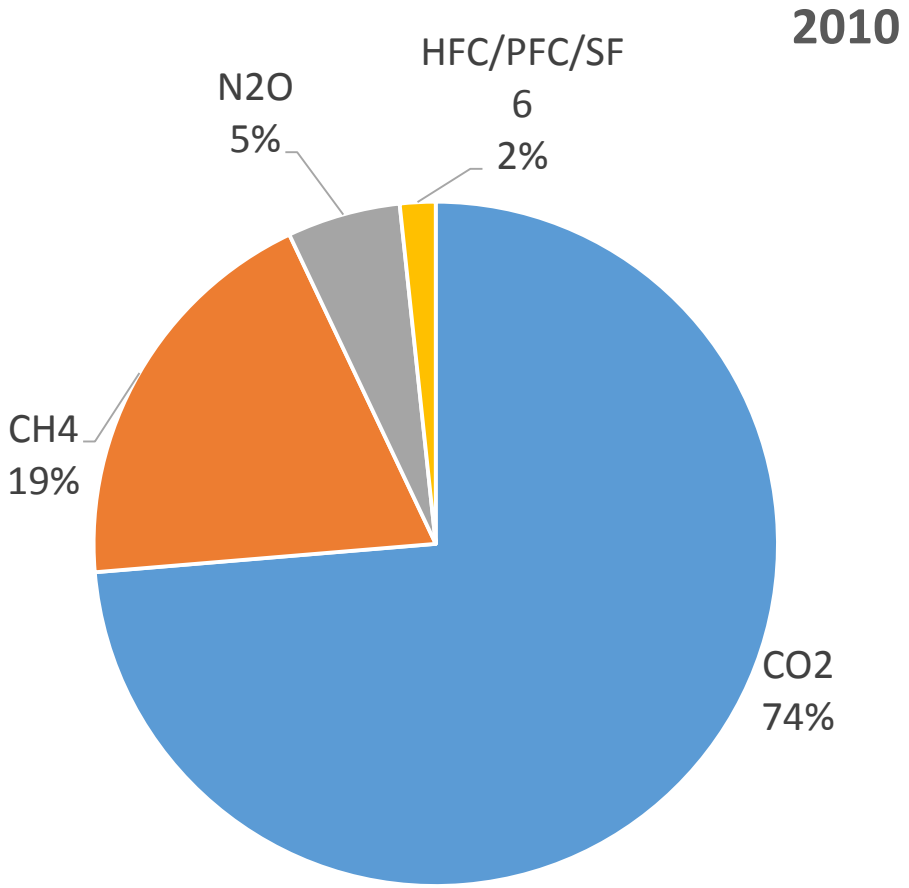
GHG Inventory- 2000 (NATCOM 2) and 2010 (Provisional-BUR)

	% Change
Energy	31.99
IPPU	48.33
Agriculture	8.84
LULUCF	11.87
Waste	19.22
TOTAL	30.94
International Bunkers	4.63
Biomass	35.85



GHG Mix- 2000 and 2010





Mitigation Actions

- Different policies of the government leading to mitigation
  - National Scale- Various polices
    - Industry
    - Buildings
    - Telecommunication
    - Transport
    - Agriculture
    - Forestry
    - Waste
  - Clean Development Mechanism
  - National Action Plan on Climate change
    - NMEEE
    - Solar mission
  - State Action Plans on Climate change

National Policies and measures

	Regulatory Measures				Economic and Fiscal					Green Cover & Land use			Supportive Measures						Total
	Acts	Regulations/ Notifications/ Rules	Standards & Labels	System Efficiency Measures	Tax	Price	Directed Financial Incentives/ Subsidy	Emissions Trading	Quotas & Certificates	Afforestation/Reforestation	Avoiding deforestation/ land reclamation	Others	Market Development	Cooperative Measures	Capacity Building	RD&D	Green Procurement, Promotion	education and public awareness	
Power & Energy	1	8	2	4	1	4	5	2	2				1		1	3	1		35
Renewable Energy		7				2	3						2			1		2	17
Alternate Fuels		3				2										1			6
Energy Efficiency & Conservation		1	1													3			5
Industry				6			1	1					4	1	1	4			18
Forestry	1	1								2	1	2							7
Transport		6		3			3									3			15
Agriculture				5									1		1	2			9
Cross Sectoral				2			2										3	2	9
Waste		4		3												1			8
Total	2	30	3	23	1	8	14	3	2	2	1	2	8	1	3	18	4	4	129

Domestic Measures for MRV

- MRV of objectives of Existing National mechanisms
  - National schemes leading to mitigation such as PAT
  - NMEEE
  - RPO/REC (Renewable Purchase obligation/Renewable energy certificates)
- International funding leading to mitigation- project based
    - CDM
    - Bilateral/multilateral funding
- However, there is already a robust mechanism of physical and financial auditing right from implementation level to State level to National level including parliamentary assessments.

Technology, Capacity, Financial Needs

- For strengthening GHG inventory- Given
- Technology needs and financial needs to achieve low Carbon pathways for different sectors -yet to be quantified at National Scale
- However, such studies exist, at State level as well

Example

Low Carbon technology needs, GHG abatement potential and costs – State of Bihar

		Average annual reduction	Additional investment during 2015-2035 at 2014-15 prices (Crore INR)		Additional investment (Million USD) during 2015-2035 (1USD=INR60)	
Sector	Low C measure	CO2e in million tons	Lower Limit INR	Upper Limit INR	Lower Limit USDLR	Upper Limit USDUR
Power Generation	Hydel	7.69	68250.03	100893.8	1137.50	1681.56
	Gas Based	1.82	-165290	-139107	-2754.83	-2318.45
	Nuclear	10.46	300753.2	314740.2	5012.55	5245.67
	Solar photovoltaic (large scale systems)	3.6	10703.83	10703.83	178.39	178.39
	Solar photovoltaic rooftop	5.6	46018.47	190800.30	766.97	3180.00
	Solar thermal	0.4	9346.01	9346.01	155.76	155.76
	Biomass	-2.02	-3993.73	-3993.73	-66.56	-66.56
	Supercritical power plants	22	58756.83	195856.20	979.28	3264.27
	Advanced Ultra Supercritical power Plants	63	259170.8	259170.80	4319.51	4319.51

Buildings	**Efficient Appliances in residential sector**	**7.00**	**2507004.86**	**2507004.86**	**41783.41**	**41783.41**
	Efficient Appliances in Commercial Sector	1.40	94727.47	94727.47	1578.79	1578.79
	Improved Chulhas- efficient cook stoves	1.8	46014.61	46014.61	766.91	766.91
	Solar Lanterns	0.30	54815.59	54815.59	913.59	913.59
Industries	Blast Oxygen Furnace Exahaust Gas Recovery Device (including Sealed BOG)	0.05	5459843	5459843	90997.38	90997.38
	Installation of appropriate/smaller capacity CW pumps in CPP	0.31	11155.35	11155.35	185.92	185.92
	VSBK	1.14	334767.8	334767.8	5579.46	5579.46
Transport	BRTS	0.23	1119.92	1119.92	18.66	18.67
	Road Improvement	0.48	2856446.228	2856446.228	47607.44	47607.44
	Alternative Fuel	0.74	11064.87	13806.61	184.41	203.11
	Improvement in public Transport	1.34	19012.5	19012.5	316.875	316.88
	Improvement in NMT	0.54	4690.4	4690.4	78.17	78.17
	MRTS	0.14	80000.00	80000.00	1333.00	1333.00

Rice	**Aerobic Rice**	**0.05**	**1239.75**	**1239.75**	**1239.75**	**206.63**
	DSR	0.09	1012.5	1012.50	1012.5	168.75
	SRI	0.09	6640.2	6640.20	6640.2	1106.70
Agriculture pump sets	Solar pump sets	1.78	109440.00	231562.50	1824.00	3859.375
Enteric Fermentation in Bovines	Straw silage	0.20	953.36	953.36	15.80	15.89
	Dry+ Green fodder + MUB	0.18	968.63	968.63	16.14	16.14
	Dry fodder + Ammonization	0.22	1645.27	1645.27	27.42	27.42
Manure Management-Bovines	Large biogas plants with bottling units	0.072	1520.00	1520.00	253.33	253.33
	Household level Biogas plants	0.008	3501.61	3501.62	583.60	583.60
LULUCF	Short Rotation	0.37	42899.2	42899.2	714.99	714.99
	Long Rotation	0.37	37685.33	37685.33	628.09	628.09
	Sustainable Harvesting of Timber	0.21				

MSW	**Small scale Vermi composting**	**0.10**	**11701.45**	**11701.45**	**195.02**	**195.02**
	Windrow composting	0.07	62535.31	62535.31	1042.25	1042.26
	RDF	0.03	747.88	1128.03	12.46	18.80
	Small Biomethanation plants	0.05	332.77	443.68	5.55	7.39
	Large Biomethanation plants	0.13	424.12	1484.43	7.067	24.74
Waste Water	De-silting of drains	0.15	1042.35	1042.35	17.37	17.37
	Anaerobic digesters	0.06	570.86	1141.73	9.51	19.03
	Aerobic digesters	0.01	280.75	2246	4.678	37.43
	Aerated lagoons	0.13	9615.76	9615.76	160.26	160.26
TOTAL		132.39	12697702.60	13128983.30	221125.35	220876.1

Reviews and Approvals undertaken

- √ Peer Review
- √ Third Party Expert Review
- √ Review by different Line Ministries
- √ Approved by Steering Committee
- Cabinet for approval- awaited

Thanks