# India's First Biennial Update Report to UNFCCC


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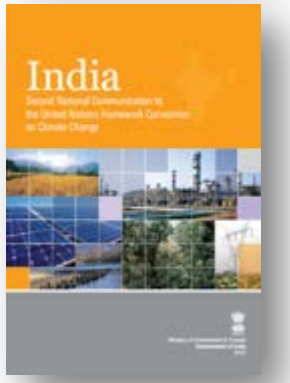
**Ministry of Environment, Forest and Climate Change**

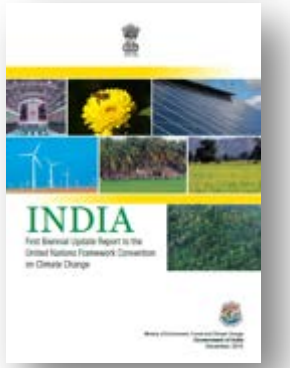
**Government of India**

# Background

India furnished to UNFCCC:

- Initial National Communication in 2004
- Second National Communication in 2012
- First Biennial Update Report in 2015/16


Biennial Update Report (BUR) is-

- Reporting requirement for non-Annex I Parties
- Transparency arrangement
- Update to last National Communication

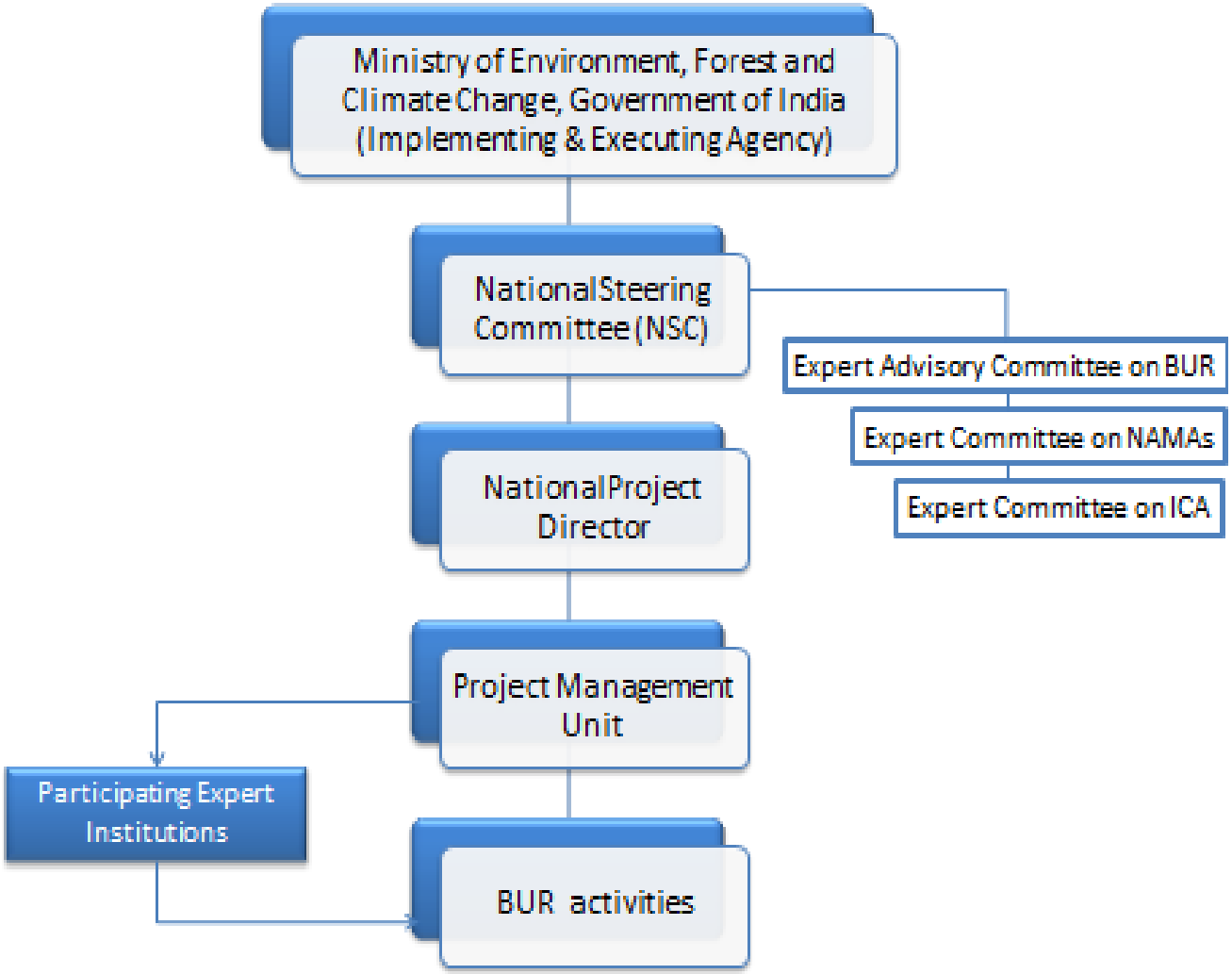
# Process

BUR prepared in collaboration with 17 expert institutions-

- Premier educational institutions (IIM Ahmedabad and Indian Institute of Science)
- CSIR laboratories (CIMFR, CRRI, IIP, NEERI and NPL),
- ICAR institutes (CRIDA, IARI, NDRI),
- MoEFCC Organizations (FSI and ICFRE)
- Non-governmental research organizations (TERI and IRADe); and
- Other institutions (CII, EESL, NRSC).

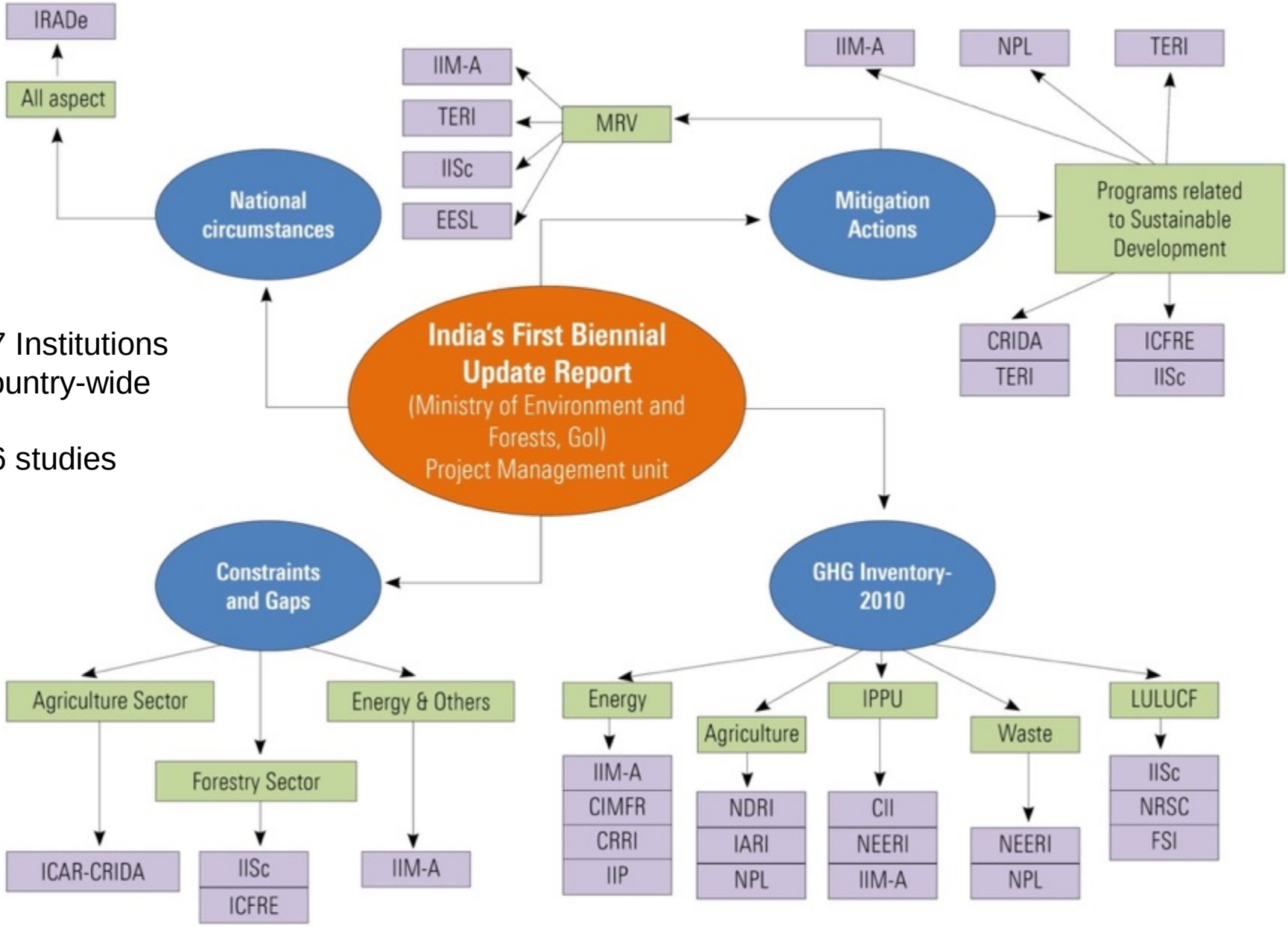
Multi-tier review process: Peer review, review by other governmental institutions, expert advisory committee and national steering committee before final approval by the Union Cabinet.

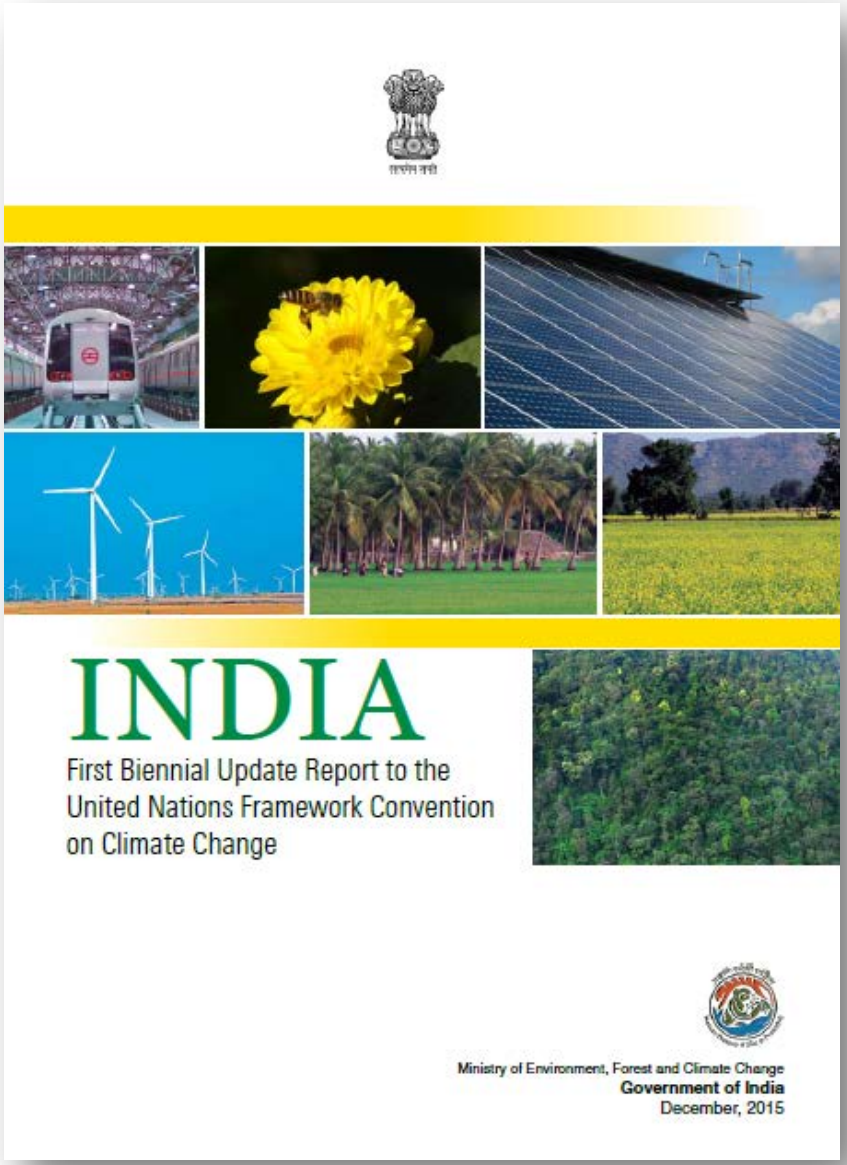
# Implementation Arrangement



# INSTITUTIONAL NETWORK

- 17 Institutions country-wide
- 26 studies






# Outline of the report

Background Information And Institutional Arrangement

Chapter 1 :National Circumstances

Chapter 2 :National Greenhouse Gas Inventory

Chapter 3 : Mitigation Actions

Chapter 4 : Finance, Technology and Capacity Building Needs and Support Received

Chapter 5: Domestic Measurements, Reporting and Verification Arrangements

Chapter 6: Additional Information

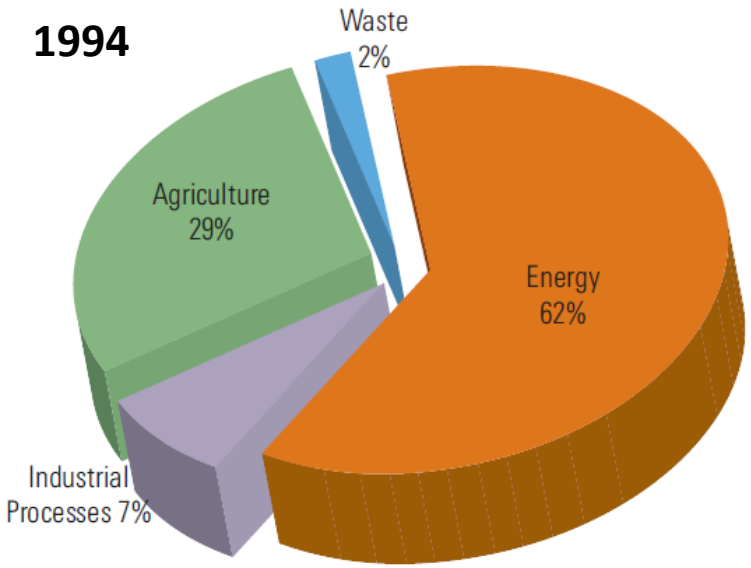
# National Circumstances

- Annual mean temperature increase of about 0.6$^{o}$C during 1901-2010.
- 17% of world's population in just 2.4% of the world's landmass
- Forest and tree cover area 24.16%, increasing steadily over time
- About 70% of rural households depend on fuelwood for cooking.
- 29.5% of population below poverty line
- 33% households have no access to electricity
- 55% households with *kuccha* and *semi-pucca* houses
- Low per capita energy consumption.

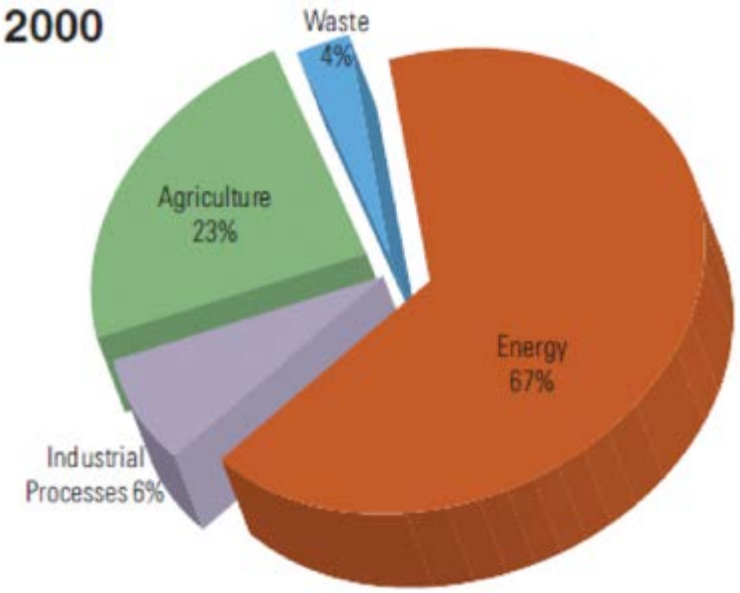
| India's National GHG Inventory, 2010 | $CO_2$ eq. (Million tonne) |
|---|---|
| **TOTAL without LULUCF (Gg)** | 2,136.84 |
| **TOTAL with LULUCF (Gg)** | 1,884.31 |
| **1. Energy** | 1,510.12 |
| **2. Industrial Processes & Product Use (IPPU)** | 171.50 |
| **3. Agriculture** | 390.16 |
| **4. Land Use Land Use Change and Forestry (LULUCF)** | - 252.53 |
| **5. Waste** | 65.05 |
| **Memo Items** (not accounted in total Emissions)<br>(International bunkers and $CO_2$ emissions from biomass) | 589.79 |

# India's GHG Emissions Sector-Wise

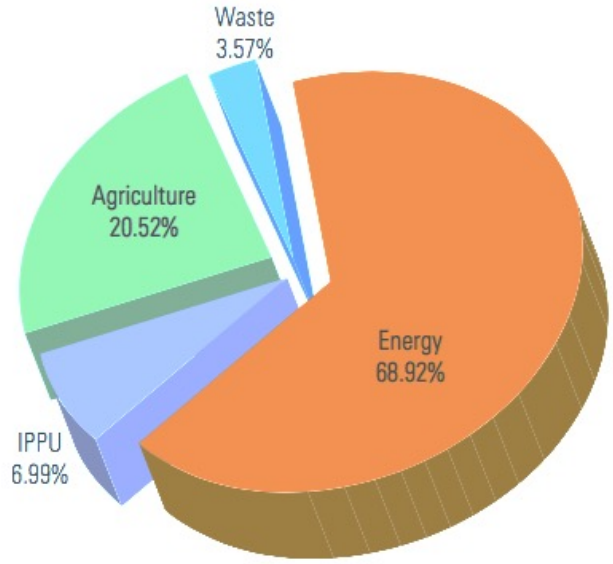
**1994**



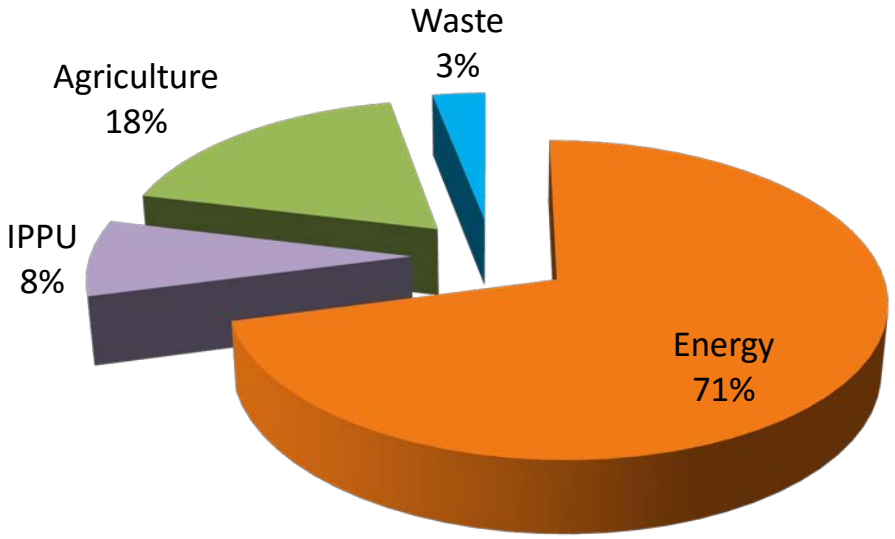

**2000**



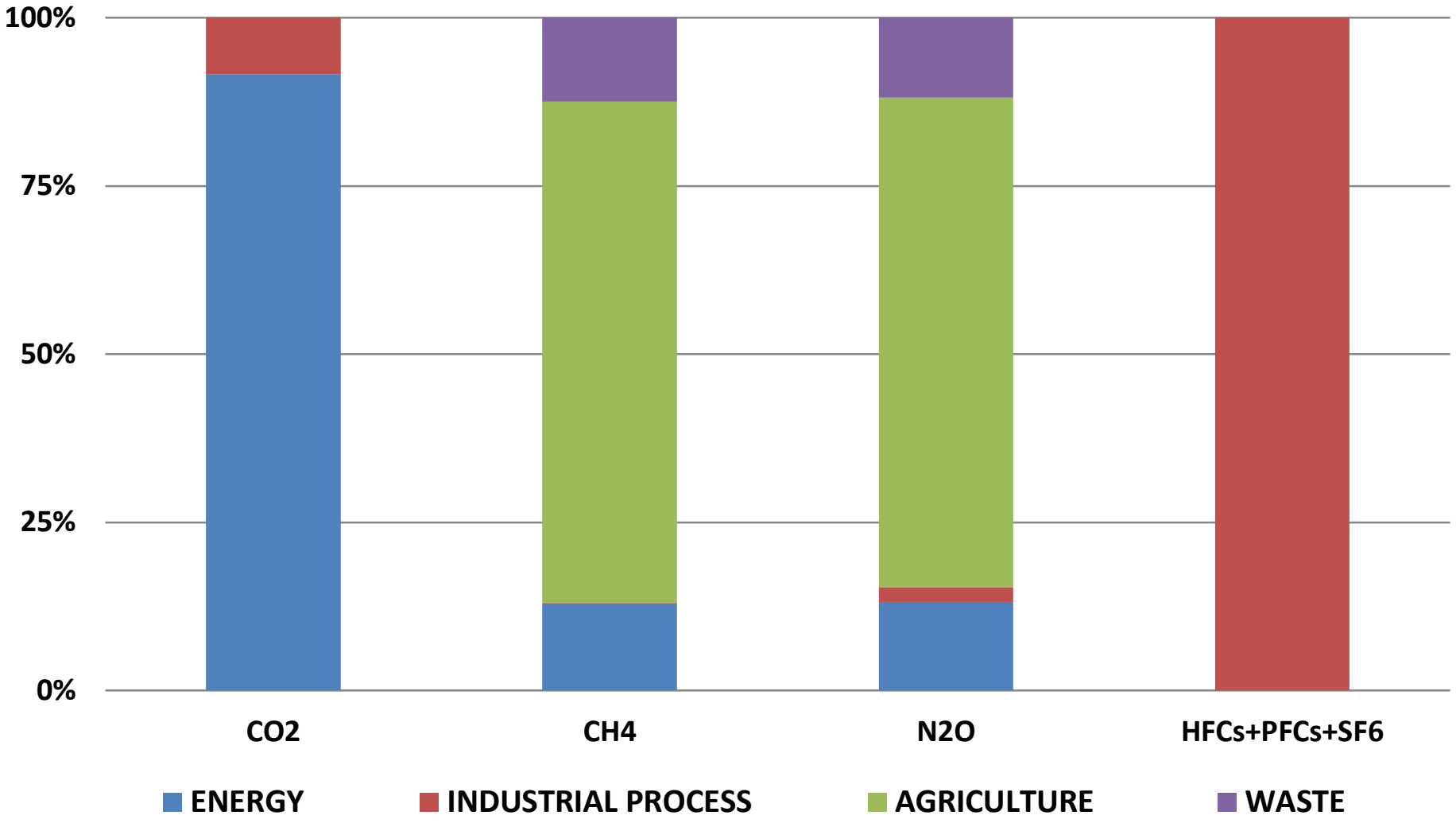

**2005**




**2010**



# Sectoral distribution of GHG emissions, India, 2010

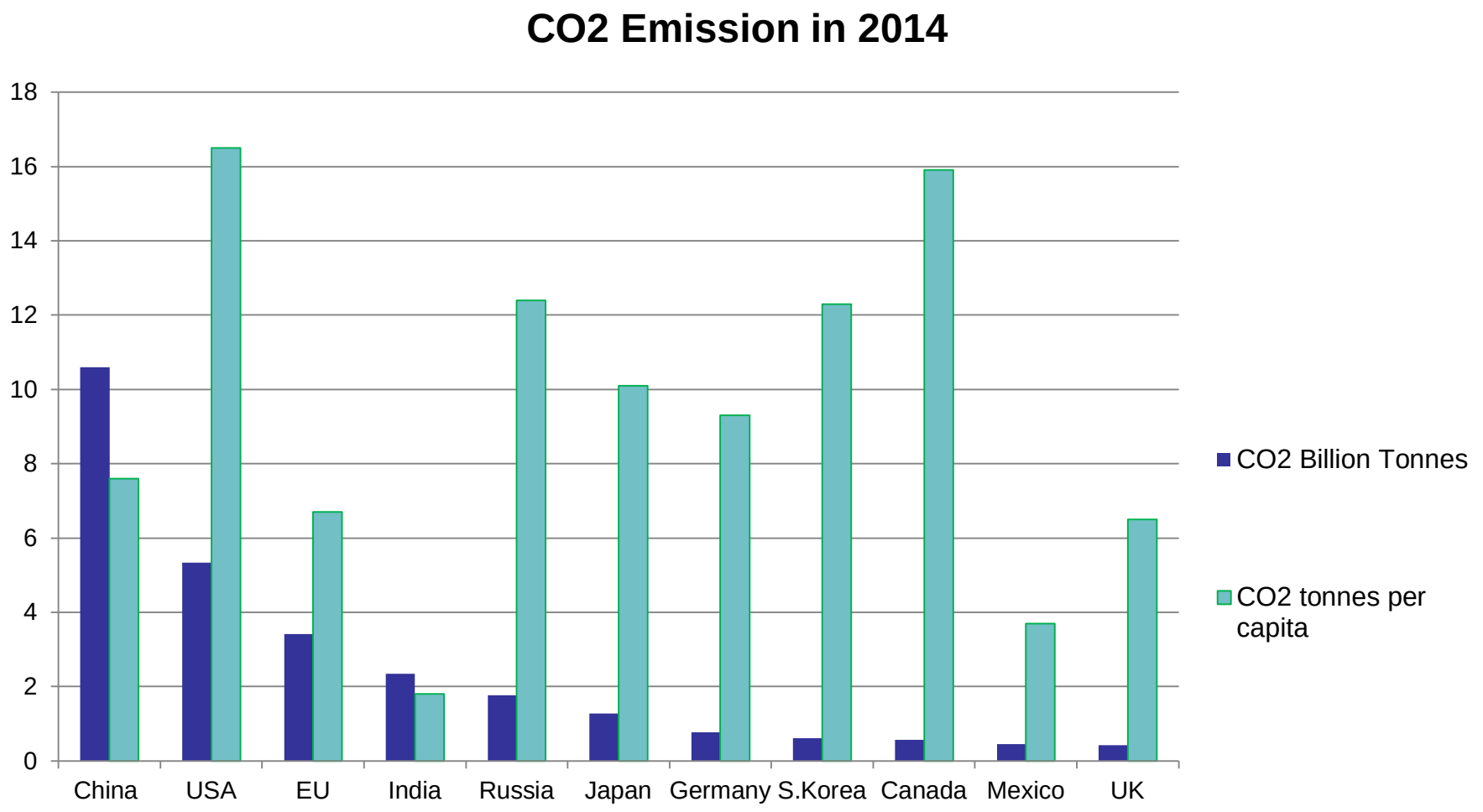


# India's GHG profile over time

| YEAR | 1994 | | 2000 | | 2005 | | 2010 | |
|---|---|---|---|---|---|---|---|---|
| SECTOR | Emission | Share | Emission | Share | Emission | Share | Emission | Share |
| ENERGY | 7,43,820 | 62% | 10,27,016 | 67% | 12,10,384 | 69% | 15,10,121 | 71% |
| INDUSTRIAL PROCESSES & PRODUCT USE | 1,02,710 | 7% | 88,608 | 6% | 1,24,017 | 7% | 1,71,503 | 8% |
| AGRICULTURE | 3,44,485 | 29% | 3,55,600 | 23% | 3,60,313 | 21% | 3,90,165 | 18% |
| LULUCF | 14,292 | - | -2,22,567 | - | -2,78,721 | - | -2,52,532 | - |
| WASTE | 23,233 | 2% | 52,552 | 4% | 62,638 | 4% | 65,052 | 3% |
| TOTAL (Without LULUCF) | 12,14,248 | | 15,23,777 | | 17,57,352 | | 21,36,841 | |
| TOTAL (Net emissions) | 12,28,540 | | 13,01,209 | | 14,78,632 | | 18,84,309 | |

***Values in Gg CO2e***; 1 Gg= $10^9$g = 1000 t

# Emissions of Some Major Economies




Data Source: Trends in Global CO2 Emissions 2015 Report. PBL Netherlands Environmental Assessment Agency

# Mitigation Actions

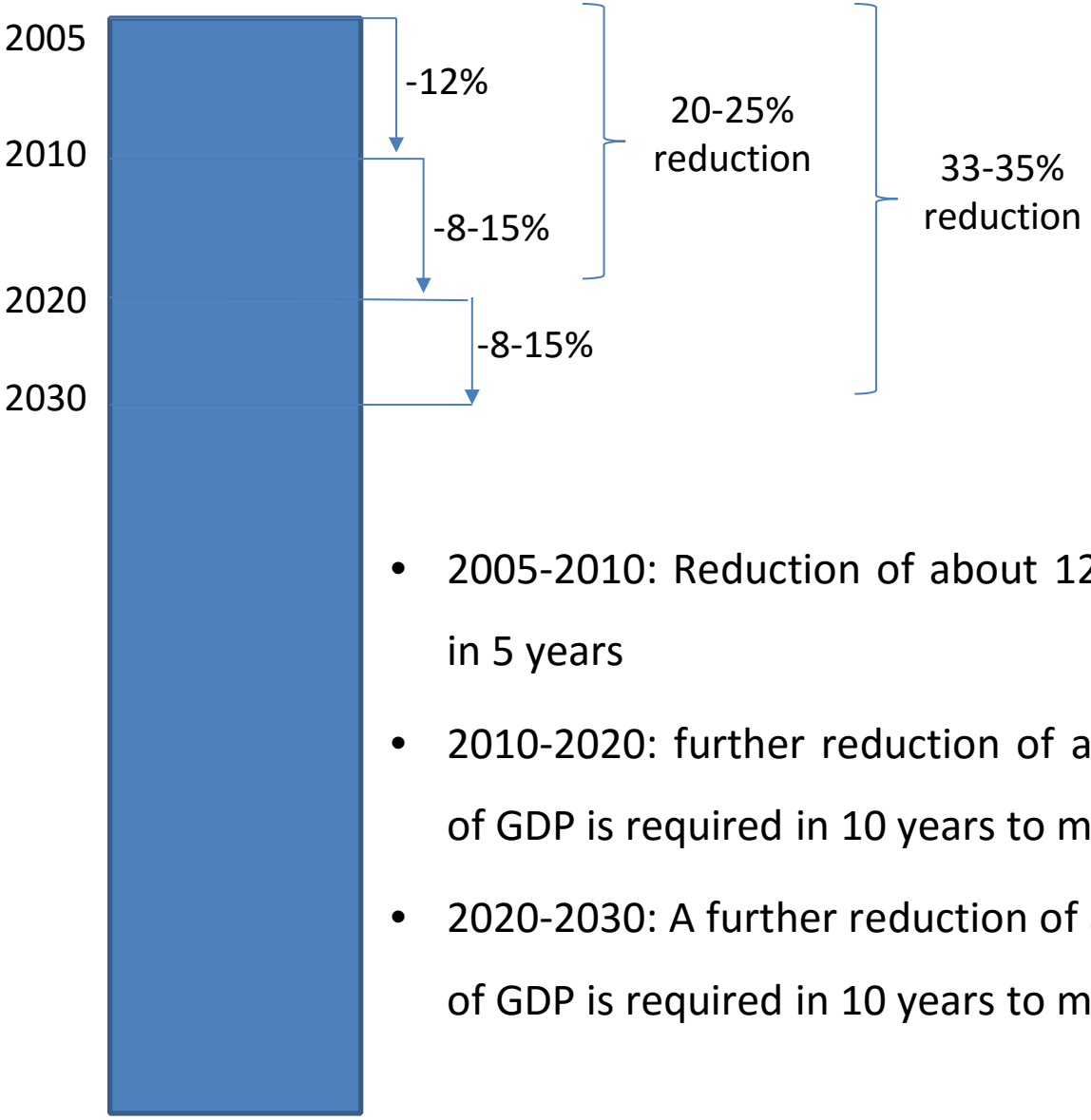
***Voluntary pledge (2010)-***

*India will endeavor to reduce the emissions intensity of its GDP by 20-25% by 2020 compared with the 2005 level; emissions from the agriculture sector would not form part of the assessment of emissions intensity.*

***INDC (2015)-***

*To reduce the emissions intensity of GDP by 33-35% by 2030 from 2005 level.*

***12% reduction in emission intensity achieved between 2005 and 2010***




- 2005-2010: Reduction of about 12% in emission intensity achieved in 5 years
- 2010-2020: further reduction of about 8-15% in emission intensity of GDP is required in 10 years to meet voluntary pledge
- 2020-2030: A further reduction of about 8-15% in emission intensity of GDP is required in 10 years to meet INDC target

# Government's Initiatives

- National Action Plan on Climate Change- 8 missions
- State Action Plan on Climate Change

**Energy sector:**

- Increased target of renewable energy capacity to 175,000 MW by 2022
- Renewable Energy Certificate (REC) to promote renewable energy and facilitate Renewable Purchase Obligations (RPOs)
- National Clean Environment Fund created; coal cess: Rs. 400/ metric tonne
- Perform Achieve Trade (PAT)
- Clean Coal Technology Initiatives
- Super Efficient Equipment Programme

## Government's Initiatives…..contd.

- ✦Deen Dayal Upadhyaya Gram Jyoti Yojna
- ✦Integrated Power Development Programme
- ✦Promotion of Supercritical coal technology and Advanced USC Technology
- ✦Renovation, Modernization and Life Extension of old power stations
- ✦Civil nuclear power programme

**Building, Transport and Waste Sectors**

- ✦Energy Conservation Building Code (ECBC)
- ✦National Programme for LED based home and street lighting
- ✦National Mission on Electric Mobility
- ✦Corporate Average Fuel Consumption (CAFE) standards for cars
- ✦Mew Metro rail networks
- ✦Swachh Bharat Mission (Clean India Mission)

# Finance, Technology and Capacity Building needs

- Adaptation related public spending: 12% of budget in 2013-14 (~2% of GDP)
- Around USD 90 billion needed for solar capacity target
- About USD 21 billion required for grid infrastructure for renewable power
- Technology, finance and capacity building needs for sectors like Renewable Energy, Clean coal technology, hydro power, shale gas, nuclear power and transport

# Domestic Measurement Reporting and Verification Arrangements

- India has well established monitoring systems for measuring and reporting of energy efficiency, renewable energy, agriculture and forestry sector programmes and projects

- Currently no MRV for GHG emissions and mitigation, but have arrangements for MRV of different kinds of parameters

- Forest area monitoring by latest remote sensing techniques

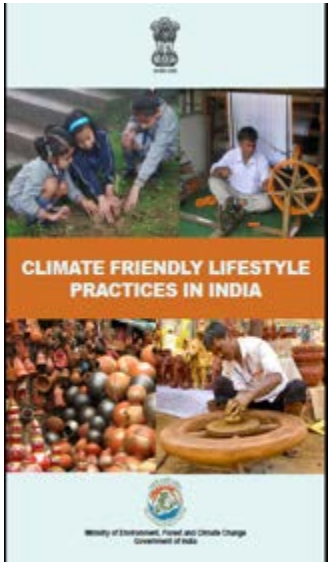
- Appropriate institutional mechanisms and capacity building required for establishment of integrated domestic MRV arrangements with international support

# Additional Information

- Sectoral reforms relating to GHG emissions
- 137 National and 286 State level policies and measures towards mitigating climate change mapped on a non- exclusive basis.
- Actual number of policies and measures could be more.

# Other initiatives of GoI






*Do not let the lifestyles of the rich world deny the dreams of the rest*

OPINION

Narendra Modi

In the next few days in Paris, the world will decide the fate of our planet. I hope the climate conference that begins there today will produce an agreement that restores the balance between ecology and economy – between our inheritance and our obligation to the future.

The conference will also, I hope, reflect a collective global commitment balancing responsibilities and capabilities on one hand with aspirations and needs on the other. It should recognise that, while some face a choice between lifestyles and technologies, others stand between deprivation and hope.

Democratic India is among the world's fastest growing economies. We are striving to meet the aspirations of 1.25bn people, 300m more of whom will soon have access to modern sources of energy while 90m gain running water.

The instinct of our culture is to take a sustainable path to development. When a child is born, we plant a tree. Since ancient times, we have seen humanity as part of nature, not superior to it. This idea, rooted in our ancient texts, endures in sacred groves and in community forests across the land.

India is also experiencing the impact of climate change caused by the industrial age of the developed world. We are concerned about our 7,500km of coastline, more than 1,300 islands, the glaciers that sustain our civilisation and our millions of vulnerable farmers.

We will play our part. We have pledged that, by 2030, we will reduce emissions intensity by at least 33 per cent of 2005 levels, and 40 per cent of installed power capacity will be from non-fossil fuel sources. We will have 175GW of renewables by 2022, and have imposed levies on coal and rationalised subsidies on petroleum products. Additional forest and tree cover will absorb at least 2.5bn worth of carbon dioxide. We will clean our rivers and create smart cities. We are replacing diesel with clean energy, and building 20 new metro railways.

We are sharing our modest resources with the developing world, helping small island states and African nations with renewable energy. Today French President François Hollande and I will launch an international solar alliance with 121 solar rich countries in the tropics, aiming to bring affordable solar power to villages that are off the grid. We expect the same from the world with respect to responding to climate change. The principle of common but differentiated responsibilities should be the bedrock of our collective enterprise. Anything else would be morally wrong.

> Paris should recognise that some face a choice between technologies but others stand between deprivation and hope

Justice demands that, with what little carbon we can still safely burn, developing countries are allowed to grow. The lifestyles of a few must not crowd out opportunities for the many still on the first steps of the development ladder.

Some say advanced countries powered their way to prosperity on fossil fuel when humanity was unaware of its impact. Since science has moved on and alternative energy sources are available, they argue that those just beginning their development journey bear no less responsibility than those who have reached the zenith of their progress. New awareness, however, should lead advanced countries to assume more responsibility. Just because technology exists does not mean it is affordable and accessible.

We should meet our need for clean energy and healthy habitats in a spirit of partnership, not pit nations on different sides. India will work with governments, laboratories and industry to facilitate a natural transition to a clean energy era through affordable and accessible renewable energy.

The best political and technical measures will be ineffective, and our collective efforts inequitable, unless we review a lifestyle that overburdens our planet. Nature can provide when it is in equilibrium, not when it is depleted faster than it can renew. Our targets must seek to drive restraint in use of fossil fuel and moderation in our lifestyles.

We look forward to Paris with the sense of duty that Mahatma Gandhi called us to assume: "We should act as trustees" and use natural resources wisely as it is our moral responsibility to ensure that we bequeath to future generations a healthy planet. India will do its part for success in Paris.

*The writer is prime minister of India*

# Current Activities

- Preparation of Second and Third Biennial Update Reports
- Preparation of Third National Communication

# THANK YOU