



India Climate Report

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This paper is part of a briefing paper series that is designed to provide an up-to-date account and analysis of India's efforts to address climate change. As the first in the series, the paper provides an overview of the current policy landscape in the country, outlining key climate actions and their current implementation status. India's approach to climate change negotiations and preparatory activities underway in the run up to COP 21 in Paris, including relevant bilateral and multilateral developments, are also summarised.

KPMG in India is the knowledge partner for this briefing paper

A brief history of India's Climate Actions

The origins of India's domestic climate agenda can be traced back to June 2007 when the Prime Minister's Council on Climate Change (PMCCC) was constituted. This high level advisory group was formed with the mandate of coordinating the national action plans for assessment, adaptation and mitigation of climate change and consisted of representatives from the government, industry and civil society.

The National Action Plan on Climate Change (NAPCC) was subsequently launched in June 2008, outlining measures to promote sustainable development, while also yielding co-benefits to address climate change through eight national missions¹. These missions, operationalised between 2010 and 2014, included multi-pronged, long-term and integrated strategies for addressing climate change domestically. Additionally, the Ministry of Environment, Forests and Climate Change (MoEFCC), the nodal ministry for climate change in the country and coordinating entity for implementation of the NAPCC, directed all states to prepare their State Action Plan on Climate Change (SAPCC) based broadly on a framework similar to the NAPCC². Thirty states have prepared their action plans till date, primarily focussing on adaptation³.

Prior to the 15th session of the

Conference of the Parties (COP) in Copenhagen in December 2009, India reinforced its commitment to address climate change by putting forth a voluntary pledge to reduce the emissions intensity of its Gross Domestic Product (GDP) by 20-25 per cent compared to its 2005 level, by 2020⁴. Following this, in January 2010, the Expert Group on Low Carbon Strategies for Inclusive Growth was established by the Planning Commission of India to provide sector specific recommendations to support the formulation of the country's 12th Five Year Plan (2012-17). The final report, released in April 2014, outlined sectoral mitigation opportunities and an assessment of the macro-economic and welfare implications of a low-carbon growth strategy for India.

In the Union Budget 2010-11, a clean energy cess on coal, lignite and peat was introduced to be levied on both domestically produced and imported coal at INR 50 (USD 0.83) per tonne. This was increased to INR 100 (USD 1.67) per tonne in the Union Budget 2014-15 and to INR 200 (USD 3.33) per tonne in the Union Budget 2015-16. The proceeds of this cess contribute to the corpus of the National Clean Energy Fund (NCEF), established to finance R&D and innovative projects that promote clean energy technologies. The mandate of the NCEF has recently been expanded to include other clean environment initiatives as well⁵.

1. Eight National Missions - Jawaharlal Nehru National Solar Mission, National Mission for Enhanced Energy Efficiency, National Mission for Sustainable Habitat, National Water Mission, National Mission for Sustaining the Himalayan Ecosystem, National Mission for a Green India, National Mission for Sustainable Agriculture, National Mission on Strategic Knowledge for Climate Change

2. Summary of Discussion National Consultation Workshop on Preparation of State Level Strategy and Action Plan on Climate Change (<http://www.moef.nic.in/downloads/others/SAPCC-workshop-summary-2010.pdf>)
3. India's progress in combating climate change: Briefing Paper for UNFCCC COP 20 Lima, PERU, December 2014
4. India's communication to UNFCCC in 2010 http://unfccc.int/files/meetings/cop_15/copenhagen_accord/application/pdf/indiaphaccord_app2.pdf

5. Section - 119, Finance Acts-2014, Amendment of Act 14 of 2010, http://www.incometaxindia.gov.in/_layouts/15/dit/Pages/viewer.aspx?grp=Act&cname=CMSID&cval=102120000000035273&k=&lsDlg=0; All conversions assume 1 USD = 60 INR

To incentivise energy efficiency in industries, the Ministry of Power (MoP), in consultation with the Bureau of Energy Efficiency, notified rules for a domestic market-based mechanism called the Perform, Achieve and Trade (PAT) scheme on 30 March 2012. The first three-year cycle of the scheme, that aimed to achieve energy savings of 6.686 million tonnes of oil-equivalent (about 26-28 million tCO₂e*) through a cap on specific energy consumption of 478 plants across eight energy-intensive industrial sectors concluded on 31 March 2015⁶.

In 2013, the National Electric Mobility Mission Plan (NEMMP) 2020 was launched to promote adoption of hybrid and electric vehicles in the country. In the Union Budget 2015-16, INR 75 crore (USD 12.5 million) was earmarked for manufacturing and adoption of electric vehicles under the Faster Adoption and Manufacturing of (Hybrid and) Electric Vehicles (FAME) scheme.

The MoP notified average fuel consumption standards for passenger cars in January 2014 which are expected to come into effect from April 2017 and are anticipated to result in a cumulative reduction of 22.97 million tonnes of

fuel consumption (approximately 66.4 million tCO₂e) by 2025⁷. Standards for heavy duty vehicles are currently under development.

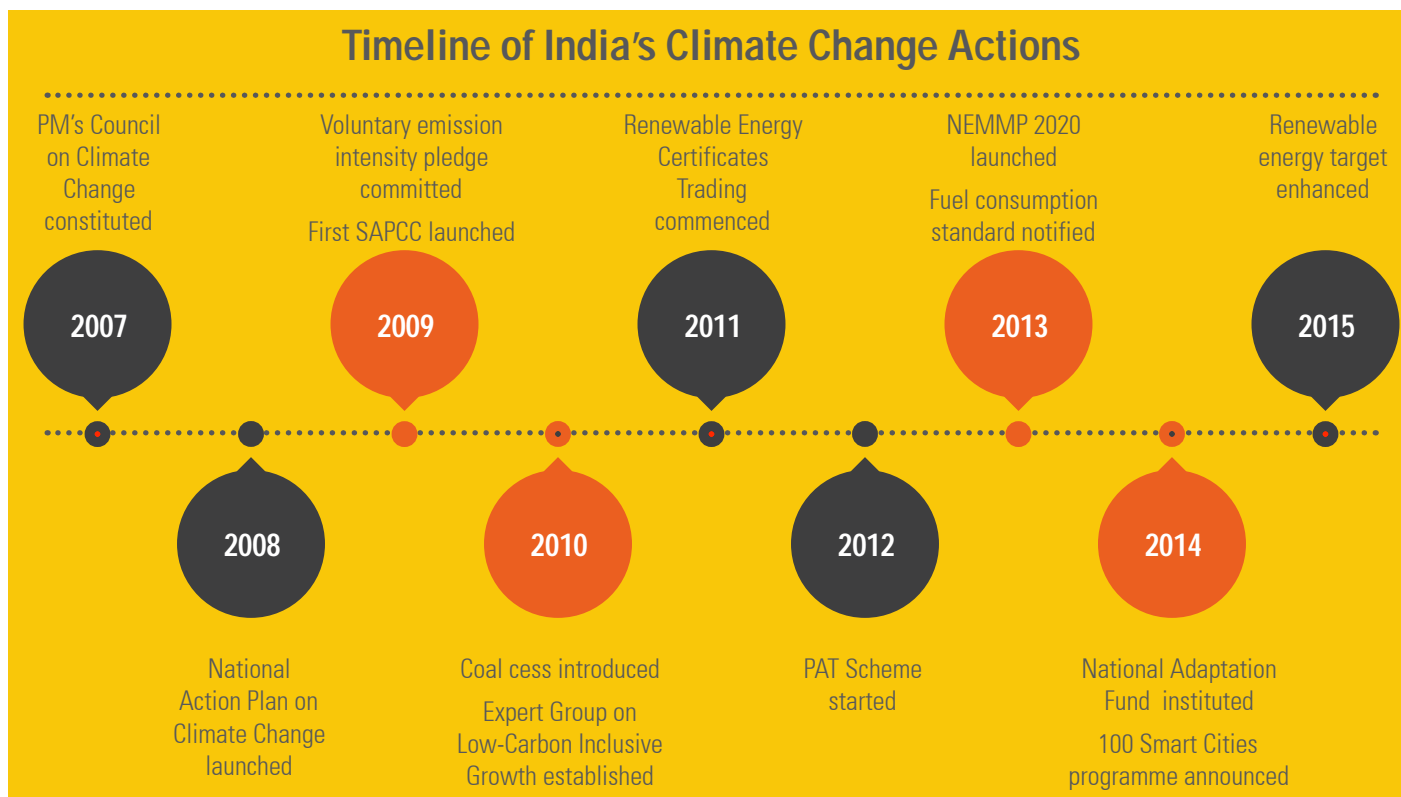
In 2014, the newly elected government introduced several institutional changes such as reconstituting the PMCCC, dissolution of the Planning Commission and renaming the Ministry of Environment and Forests to include 'Climate Change'. The government also announced its intent to develop one hundred 'Smart Cities' for which an outlay of INR 48,000 crore (USD 8 billion) over five years was approved⁸. The government also instituted a National Adaptation Fund for climate change with an initial outlay of INR 100 crore (USD 16.67 million)⁹. While the modalities for this fund are yet to be announced, a proposal for addressing climate risk in agriculture has been formulated and is in the advanced stages of processing¹⁰.

In 2015, the government substantially increased India's installed renewable energy capacity target to 175 GW by 2022, to be comprised of 100 GW of solar power, 60 GW of wind energy, 10 GW of small hydro power, and 5 GW of biomass-based power¹¹. The enhanced solar target by itself is anticipated to

save about 165 million tonnes of CO₂ emissions per year¹². The National Institution for Transforming India (NITI) Aayog, a new institution that replaced the Planning Commission, has released a roadmap for accelerated renewable energy deployment as its first initiative¹³.

India has also substantially curtailed subsidies on petroleum products in recent years. While the removal of petrol subsidy was initiated in 2010, followed by diesel in 2014, limits have also been placed on the amount of LPG that is subsidised. Additionally, recent declines in international oil prices have, to a large extent, been matched by increases in excise duty applied on petrol and diesel, with only about one-third of the benefit of declining prices passed on to consumers¹⁴.

Other domestic initiatives that have implications on climate change mitigation and adaptation include establishment of State Energy Conservation Funds, Renewable Purchase Obligation, Standards and Labeling Program, Municipal Demand-Side Management and Energy Conservation Building Code. More details on these initiatives will be provided in later editions of this series.



*million tonnes of carbon dioxide equivalent

6. Perform, Achieve and Trade (PAT) Booklet, Ministry of Power, July 2012
 7. India's progress in combating climate change: Briefing Paper for UNFCCC COP 20 Lima, PERU, December 2014; Emissions estimated assuming fuel to be diesel; Emission factors and GCV from CEA Baseline Carbon Dioxide Emissions Database Version 10.0
 8. Press Information Bureau, 29 April 2015, <http://pib.nic.in/newsite/PrintRelease.aspx?relid=119925>
 9. One Day Conference on "Climate Change Finance in India" by Ministry of Finance and Department of

Economic Affairs, http://finmin.nic.in/the_ministry/dept_eco_affairs/economic_div/Outcome%20Document%20of%20One%20Day%20Conference%20on%20Climate%20Change%20Finance%20in%20India%2019%20May%202015.pdf
 10. Implementation of Budget Announcements 2014-2015, <http://indiabudget.nic.in/ub2015-16/impbud/impbud.pdf>
 11. Schemes for Installing Large Solar Power Plants, April 27, 2015, <http://pib.nic.in/newsite/PrintRelease.aspx?relid=119779>

12. Communicated by Hon'ble Minister at the High Level Segment of UNFCCC COP-20 on December 9, 2014, <http://envfor.nic.in/content/statement-hon%E2%80%99ble-minister-high-level-segment-unfccc-cop-20-december-9-2014>
 13. Re Roadmap 2030 – NITI Aayog's First Initiative, <http://pib.nic.in/newsite/PrintRelease.aspx?relid=115487>
 14. Op-Ed by Arvind Subramanian, Chief Economic Advisor to the Government of India. <http://indianexpress.com/article/opinion/columns/green-road-to-paris/>

India's Performance on Committed Actions

India has launched several ambitious policy initiatives over the last decade that, if implemented effectively, will enable the country to make a noteworthy contribution to the global fight against climate change. While the performance of some of these initiatives is satisfactory, others have not fared as well due to a variety of technical, institutional and financial challenges. An update on some of the key initiatives is provided below.

India's voluntary commitment to reduce its emission intensity

The only official communication by the government related to India's progress in delivering on its emission intensity pledge is a response provided by the MoEFCC in March 2015 to a question raised in the Rajya Sabha, the Upper House of Parliament¹⁵. The response indicates that the emission intensity of the country had reduced by approximately 14 per cent between 2005 and 2010, suggesting that India is on track to achieve the 20-25 per cent reduction in its emission intensity of GDP, over its 2005 level, by 2020.

National Action Plan on Climate Change (NAPCC)

The NAPCC has been in existence for the past seven years, but apart from the Jawaharlal Nehru National Solar Mission (JNNSM) and the National Mission for Enhanced Energy Efficiency (NMEEE), other missions have not achieved considerable progress. Following are the highlights of the above missions:

- **JNNSM:** The mission was launched in January 2010 by the Ministry of New and Renewable Energy (MNRE); the implementation of its first phase was as scheduled. By 2013-14, it had reported an addition of 2,870 MW of grid connected solar power, 364.27 MW of off-grid solar applications and 8.42 million m² of solar thermal collectors, which is estimated to have resulted in a cumulative reduction of 15.5 million tonnes of CO₂e¹⁶.
- **NMEEE:** While the mission was approved in June 2010, the PAT scheme, which is its flagship programme, was launched in March 2012 after the completion of necessary benchmarking studies. The first cycle ran from 2012-13 to

2014-15 and its final evaluation is currently underway. The trading of Energy Saving Certificates (ESCerts) is expected to commence thereafter in August 2015. The second cycle of the scheme, which may be expanded to cover additional sectors, is also anticipated to be notified soon¹⁷.

Institutional mechanisms

The PMCCC played an instrumental role in the launch of the NAPCC and its operationalisation through national missions. Since then it was largely inactive, having not met for over three years until its reconstitution by the new government in 2014. The reconstituted council met in January 2015 where it critically reviewed the progress of the NAPCC missions and discussed the addition of four new missions on wind energy, health, coastal management and energy from waste¹⁸.

It has widely been acknowledged that the achievement of India's ambitious renewable energy targets, particularly the solar energy target, will be challenging. Meeting these targets will necessitate the establishment of an enabling policy framework, creation of supporting infrastructure and availability of skilled manpower, all of which is currently insufficient. Further, it is estimated that achievement of these goals will require an additional investment of about INR 9,000 lakh crore (USD 150 billion)¹⁹.

Climate change assessments

The Indian Network on Climate Change Assessment (INCCA) was set up by MoEFCC to bring together Indian institutions and scientists to undertake assessments on different aspects of climate change. In 2010, INCCA published India's GHG emission inventory for the year 2007 which was followed by the release of a report titled 'Climate Change and India: A 4x4 assessment'. Although the government had committed to publishing a national GHG inventory every two years, no further inventories have been released till date²⁰.

The Black Carbon Research Initiative launched in 2011 did not progress beyond the concept stage. The fate of the recommendations made by the Expert Group on Low Carbon Strategies for Inclusive Growth also remain unclear.

Climate finance

Project approvals under NCEF were very slow in the fund's initial years, however, this has improved recently with the total approval of more than 46 clean energy projects amounting to INR 16,511.43 crore (USD 2.75 billion)²¹. So far, the MNRE has been the largest recipient of these funds, with almost 70 per cent of sanctioned funds supporting solar energy technologies. However, the funds disbursed to the projects continue to be relatively low in comparison to the corpus.

With respect to adaptation activities, India has been able to obtain approval from the UNFCCC Adaptation Fund for financial assistance towards three projects related to inland fisheries, coastal management and agricultural practices, altogether valued at approximately USD 5 million²².

The MoEFCC has endorsed three financial institutions, which include the Small Industries Development Bank of India (SIDBI), National Bank for Agriculture and Rural Development (NABARD) and IDFC Limited, to apply to the Green Climate Fund (GCF) Board for accreditation as National Implementing Entities (NIEs). NABARD was recently accredited by the GCF Board. Other institutions are likely to be nominated by MoEFCC as well.



15. Rajya Sabha Unstarred Question No. 2439, Target set to reduce greenhouse gases emission, <http://www.indiaenvironmentportal.org.in/files/file/Target%20set%20to%20reduce%20greenhouse%20gases%20emission.docx>

16. Summary of targets and achievements during Phase-I of JNNSM (2010-13), Jawaharlal Nehru National Solar Mission, MNRE Annual Report 2014-15, http://mnre.gov.in/file-manager/annual-report/2014-2015/EN/Chapter%204/chapter_4.htm and Press Information

Bureau, 14 November 2014, <http://pib.nic.in/newsite/PrintRelease.aspx?relid=111425>

17. Outlook for the second cycle of the Perform Achieve and Trade Scheme: Understanding the Designated Consumer Viewpoint, <http://aeee.in/webinar-on-outlook-for-the-second-cycle-of-the-perform-achieve-and-trade-scheme-understanding-the-designated-consumer-viewpoint/>

18. First meeting of Reconstituted Executive Committee on Climate Change held, <http://pib.nic.in/newsite/PrintRelease.aspx?relid=111425>

19. <http://pib.nic.in/newsite/PrintRelease.aspx?relid=116472>

20. India's Greenhouse Gas Emissions 2007, http://www.moef.nic.in/downloads/public-information/Report_INCCA.pdf

21. Status as of Sep 2014, http://finmin.nic.in/the_ministry/dept_expenditure/plan_finance2/ProjStatement_IMG_underNCEF25092014.pdf

22. Funded Projects, https://www.adaptation-fund.org/funded_projects

In Focus: Intended Nationally Determined Contributions (INDCs)

The Indian INDC is currently under preparation. In the international negotiations preceding COP21 in Paris, India has been advocating for inclusion of adaptation, finance, technology and capacity building as core components of INDCs, in addition to mitigation. The MoEFCC has held consultations with central ministries, state environment departments, industry representatives and civil society organisations for inputs on drafting the INDC. The ministry has also commissioned technical studies with The Energy and Resources Institute

(TERI), the Integrated Research and Action for Development (IRADe) and the Institute of Economic Growth (IEG) to support the INDC development process. The results of these assessments have not been published in the public domain as yet.

While presenting its views in various public forums, the government has indicated that India is likely to present two INDCs, one containing commitments that can be attained with domestic resources and the other

containing commitments that would be contingent upon international support by way of technology and finance. India is also likely to endorse a ten-year timeline from 2020 to 2030 for achieving emission reduction goals under its INDC²³. The MoEFCC has indicated that Cabinet approval of the INDC will be obtained prior to its submission to the UNFCCC. India has also clarified that it does not support an ex-ante review of its INDC, citing that it is an issue of national sovereignty.

International Negotiations and Cooperation

Prior to the 35th meeting of the Open-Ended Working Group of the Parties to the Montreal Protocol, India submitted a proposal to amend the Montreal Protocol to phase down hydrofluorocarbons (HFCs). This marks a significant shift from its previous objection towards including HFCs under the purview of the Montreal Protocol²⁴. For developed countries, the proposal suggests that the reference level should be determined based on the level of HFC production and use in 2013-15, with phase down beginning in 2016 and reaching 15 per cent of reference levels in 2035. For developing countries, the suggested reference level is proposed to be determined based on the level of HFC production and use in 2028-30, with phase down beginning in 2031 and reaching 15 per cent of reference levels in 2050. It also proposes a grace period of 15 years to developing countries to provide their domestic industries enough time to switch over to cleaner, technically feasible and

economically viable alternatives. The proposal also calls for the Multilateral Fund of the Montreal Protocol to cover full conversion costs for their industries to move to cleaner alternatives as opposed to the current approach that covers only incremental costs²⁵.

The BASIC group (Brazil, South Africa, India and China), formed in November 2009, held its 20th ministerial Meeting on climate change in June 2015. The ministers noted the need for the Paris agreement to address all six elements identified in the Durban mandate - mitigation, adaptation, finance, capacity-building, technology development and transfer, and transparency of action and support - in a balanced manner. They also noted that the differentiation between developed and developing country parties must be maintained in each element of the agreement in order to achieve the requisite ambition and effectiveness.

23. CEEW (2015) Negotiating India's Climate Cliff - India's Climate Policy and Intended Nationally Determined Contributions, Conference Report, 3 February, 2015, New Delhi
24. MOP summary, <http://www.iisd.ca/ozone/mop25/compilation.pdf>
25. Proposed amendment to the Montreal Protocol submitted by India, <http://conf.montreal-protocol.org/meeting/oewg/oewg-35/presession/PreSession%20Documents/OEWG-35-4E.doc>

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