



## A study on India's preparations for Climate Change Commitments

### KEYWORDS

Climate Change, Greenhouse gases, Carbon-di-oxide emission

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### ABSTRACT

Climate Change has now become a serious issue for the human community as a whole across the Globe. Thanks to the efforts of the United Nations Framework Convention on Climate Change (UNFCCC) there has been some concrete efforts being taken and hopefully they sustain in the days to come to yield the targeted results. While there are efforts initiated at the global level they need to be translated into action at the national level by the respective countries. Essentially the efforts are all revolve around reducing the greenhouse gases and more specifically the Carbon-di-oxide emissions in the environment.

This article aims to review the action plan India is taking to achieve the above cause that includes the commitment India has made in this regard. It also explores the obligations of the business firms in meeting the green targets and the need to explore ways and means to work together with government as it makes sense for the firm as such but also underscores the importance of the social obligations of the business firms

### Introduction

Climate Change also known as Global warming is affecting the lives of everyone. The rate at which the globe is getting hotter is having implications on the planet lives. Even the arctic region is getting warmer leading to melting of the ice. The highest temperature exceeding 50 deg is observed in countries like Libya. There are floods on one extreme and drought on the other side. Since it is a common issue affecting everybody on earth, all the global community needed to work together. Only the forum's like UN can handle this kind of issues and rightly resulted in the formation of United Nations Framework Convention on Climate Change. The challenge in this context is to create an awareness among all and take every one along and not an easy task.

At the Global level UNFCCC (United Nations Framework Convention on Climate Change) is taking all the efforts to bring about consensus among the member Nations The member nations on reaching consensus will have to get the same implemented in their respective nations. The challenge at this level is of different kind. It involves trading off between achieving the nations growth Versus fighting the climate Change impact. This article focuses on what India has committed at the UN conventions and how they plan to achieve the same. This phase of requesting countries to convey what they intend to do bring about reduction in emission levels are to be conveyed in the form of Intended Nationally Determined Contributions (INDC) and accordingly India conveyed its pledge to reduce the emission level intensity of GDP by 20 to 25 % by 2020 compared to 2005 levels as part of Copenhagen agreement. Similarly, India ratified Paris agreement on 2<sup>nd</sup> Oct 2016 and pledged to reduce the emissions intensity of GDP by 33% to 35% by 2030 below 2005 levels.

### Background

#### India's commitment:

India has pledged to reduce the emissions intensity of its GDP by 20-25 % in 2020 compared to 2005 levels. This target does not cover agriculture sector. This commitment by India is as part of its compliance against Copenhagen accord made on 30<sup>th</sup> Jan 2010. The quantification of this pledge covers a range of between 3.6 and 3.8 GtCo<sub>2</sub> in 2020.

#### What is Nationally Determined Contribution?

The idea of seeking what each country intend to contribute to the cause of climate change was initiated in the Conference of Parties –(COP-19) held in Warsaw IN 2013. After imitating this idea and deliberated extensively in COP-19 (Warsaw) and COP-20 (Lima-Portugal) it became a reality in COP-21 as part of Paris agreement. As per this agreement all the countries were obligated to convey in what

they termed as “Nationally Determined Contributions)” (NDC) and also indicate their action Plans.

India ratified Paris agreement exactly after one year after the submission of its intended Nationally Determined Contribution (INDC) on 2-10-2016. Accordingly, the country has committed for the following:

- To reduce the emissions intensity of GDP by 33% to 35% by 2030 below 2005 levels.
- To increase the share of non-fossil based energy resources to 40% of installed electric power capacity by 2030 with the help of technology and low cost international finance including from Green Climate Fund (GCF).
- To create an additional (cumulative) carbon sink of 2.5 – 3 GtCo<sub>2</sub>e through additional forest and tree cover by 2030.

#### What action Plan is in the offing?

The Government of India has formulated a guiding principle to adhere to in respect to Climate Change and based on such guiding principle has also come out with eight national missions in this respect.

The guiding principles are;

- Protecting the poor and vulnerable sections of society through an inclusive and sustainable development strategy, sensitive to climate change.
- Achieving national growth objectives through a qualitative change in direction that enhances ecological sustainability, leading to further mitigation of greenhouse gas emissions.
- Devising efficient and cost effective strategies for end use demand side management
- Deploying appropriate technologies for both adaptation and mitigation of greenhouse gases emissions extensively as well as at an accelerated pace.
- Engineering new and innovative forms of market, regulatory and voluntary mechanisms to promote sustainable development.
- Effecting implementation of programmes through unique linkages, including with civil society and local government institutions and through public-private partnership.
- Welcoming international cooperation for research, development, sharing and transfer of technologies enabled by additional funding and a global IPR regime that facilitates technology transfer to developing countries under the UNFCCC.

Keeping the above guiding principles, the Government of India has come out with an action plan to take it forward through the eight national missions given below;

- 1.National Solar Mission
2. national mission for enhanced energy efficiency
- 3.National mission on sustainable Habitat
4. National water mission
- 5.National mission for sustainable Himalayan Ecosystem
- 6.National mission for a Green India
- 7.National mission for sustainable agriculture
- 8.National mission on strategic knowledge for climate change

The above eight mission statements enable focusing on several fronts simultaneously and promoting understanding of climate change and adaptation and mitigation, energy efficiency and natural resource conservation.

It is known that greenhouse gases constitute the major source for carbon di-oxide emission in the environment and more so specifically carbon-di-oxide emission from fossil fuel used in the energy production and in fuels used in transportation sector. Hence there has to be increased emphasis on leveraging the energy sources using renewable sources like solar, wind etc.

The table below explains the high usage of coal for energy production which is but natural. Especially for country like India which as high abundance of coal it makes sense to use the same for meeting the energy needs. The challenge for India lies specifically in its ability to resist the temptation and come out in favor of enhancing the volume of production of renewable sources and also making it competitive with that of thermal sources.

**Table:1 Energy Sources**

Energy Source	% consumption
Coal	41.3
Natural Gas	21.7
Hydro	6.3
Nuclear	10.6
Oil	4.4
Others-Renewable sources	5.7

(source: EIA –energy information administration – (for 2013) in Wikipedia –last accessed on 30-11-2016)

On the positive side, there is an increased rate of growth in the renewable sources of generation in view of heavy investments being made in the recent decade. The evolution of this energy cycle moving slowly towards renewable sources from the current coal dominated system proves that the business firms have started focusing on their supply chain costs at the macro level and trying to become more and more greener. Consequent to Paris agreement on climate change World bank also has committed for funding the projects related to climate change. Reports suggest that 28% has been earmarked for climate change related projects by world bank. The type of projects may include renewable energy and energy efficiency.

As of now the reviews suggest that India is one of the top emitter of Co2 in terms of percentage share of co2 emission among the global nations.

**Table:2 Global Top emitters of Carbon di-oxide**

Country	% Share of Co2 emission
China	27
USA	17
India	5
Russia	5

(Source: Union of Concerned Scientists, a body of scientists, students of MIT, USA.)

Also to be noted is that according to BP Energy Outlook India's energy consumption is set to grow 4.2% a year by 2035, faster than that of all major economies in the world.

**Table:3 Major Energy Consumption countries**

Countries	Energy Consumption in 2015 (in Mtoe)	Energy Consumption in 2035 (in Mtoe)	% change 2015-2035
China	3,014	4425	47
US	Data N/A	Data N/A	1
India	701	1603	129
World	13147	17157	31

(Source: Economic Times dated 27th Jan 2017, p 11)

India needs to focus on this aspect alone as any improvement in this field either by reduction in fossil fuel consumption or by increased production of renewable sources of energy or ideally in both will go a long way in bringing down the greenhouse gas impact.

**Some examples of Major Indian Initiatives**

The international body of IPCC the Intergovernmental Panel on Climate Change is a specialized body jointly established by the United Nations Environmental Programme (UNEP) and the World Meteorological Organization mandated to prepare scientific assessments on various aspects of Climate Change. The IPCC is currently engaged in the preparation of sixth Assessment Report on Climate Change through three working groups.

The ministry of environment and forest, Government of India has a huge responsibility in this field and various actions and schemes are put in place with respect to climate change and has to act on the inputs given by bodies like IPCC. In that context some of the scientific initiatives include National Carbonaceous Aerosols Programme (NCAP), Long Term Ecological Observatories (LTEO), and Coordinated Studies on Climate Change for North East region (CSCCNE). The NCAP is a major activity involving multi-institutional and multi-agency study launched in 2011. In this initiative, Ministry of Environment and Forests will collaborate with the Ministry of Earth Sciences, the Indian Space Research Organization, the Ministry of Science and Technology and other associated agencies to enhance the understanding of the role of Black Carbon in climatic change through monitoring and assess the impacts of black carbon through various modeling techniques.

Conclusions: This study reveals that though there are plans in place based on the initiatives at the global and national levels, they need to be implemented by the business firms. We need to understand the drivers of the sources of greenhouse gases and mitigation plans need to be designed and implemented. Any reduction in usage of fossil based fuels are one of the major options for the industries engaged in power generation, automobile and other industries.

Secondly it is not possible that everything related to climate change mitigation can be carried out only by the government. The business firms also need to be playing their own role not only for their own commercial success but also as part of their social obligation. To make it sustainable opportunities should be explored for possible public-private partnerships. National governments must identify those business sectors or firms that can best support their climate change adaptation objectives. Success therefore is in implementation.

**References:**

1. B.L. Lakshmi Meera, Dr.P. Chitramani (2014 in their article "Environmental Sustainability through Green Supply chain management practices among Indian Manufacturing Firms with special reference to Tamilnadu", International Journal of Scientific and Research Publications, Volume 4, Issue 3, March 2014.
2. Subramaniam D (2012), Green Initiatives: Challenges in Sustainment, Prabandhan: Indian Journal of Management, Volume 5, Number 6, June 2012, pp 45-48.
3. UNEP (2015) annual report in <http://www.unep.org/annualreport/2015/en/index.html> last accessed on 30-11-2016
4. Ministry of forest, environment and climate change [http://envfor.nic.in/presnt\\_CC.pdf](http://envfor.nic.in/presnt_CC.pdf) last accessed on 1-12-2016.
5. [http://www.ucsusa.org/global\\_warming/science\\_and\\_impacts/science/each-country-share-of-co2.html#.WEP319J97cs](http://www.ucsusa.org/global_warming/science_and_impacts/science/each-country-share-of-co2.html#.WEP319J97cs) – last accessed on 4-12-2016
6. Werback Adam (2009), "Strategy for Sustainability-A Business Manifesto" Harvard University Press, Boston, Massachusetts, pp 43-89.