POLICY FRAMEWORK FOR CLIMATE CHANGE IN INDIA: TRIUMPH OR FIASCO

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Abstract

Global climate change has already had observable effects on our environment. Temperature is rising, glaciers are melting, seasons are shifting, and sea level is rising. India has emerged as a global player in number of fields. In a country like India climate change is directly posing a threat to the pace of development. So far as India's position with regard to combating climate change is concerned, India has been showing its commitment through number of policies backed by financial soundness. Broadly these policies are directly related to action plans relating to various aspects viz. agriculture, energy, eco-system, forest, fuel contributing as a major factor affecting our climate. Whether Indian policy framework addressing all the issues has given a fruitful result or still there is a amending scope to improve its outcome. It is high time to ponder upon our policies before it's too late. This research paper is a bonafide attempt to analyse various policies dealing with the issue of climate control, their impact, outcome and scope of amendment.

Key words

Climate Change, Action Plan, Solar Mission, Renewable Energy and Forest.

I. INTRODUCTION

India has grabbed the attention of world by showing consistent growth in its economy. India is leading on the path of development while maintaining the democratic structure. The development is observed in infrastructure, agricultural sector and industrial sector. It is to note that all these forgoing sectors represent majority of carbon emissions. Being the 7th largest country in world in terms of land and number 2nd in terms of population, the demand for energy in these sectors will grow and emissions are bound to be there. India has taken positive steps by adopting the climate change related policies for promoting clean energy and energy efficiency. It is to be noted that India's carbon emissions have been rising sharply since last three decades and increased demand for energy will also accelerate the emissions. India holds the prerogative of being in the couple of nations of the planet to accommodate the security and development of

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environment by protecting the forests and wild life of the country through constitution.[1]

While addressing climate change issue, India has shown its commitment by taking various measures that fulfills the objectives of the UNFCCC.[2] India has adopted several policies and measures that are relevant to climate change which manifests the voluntary commitment made by India towards the international community.

Almost 700 million rural population of India directly count upon the climate sensitive segments like agriculture, forests, fisheries and natural resources for their survival and livelihood.[3] It is worthy to note that developing countries are emitting around 2/3 share of global carbon[4] and India is leading country among developing countries, making it major player to initiate climate change policies and relevant framework.[5]

II. NATIONAL ACTION PLAN FOR CLIMATE CHANGE

The NAPCC is an ambitious initiative by India. India has given a push to sustainability approach by adopting the NAPCC. Although, India is under no obligation to reduce its per capita emission as it is far below the world average level. The NAPCC is divided into 8 sub-missions for maintaining the overall growth to key sector in a sustainable manner.[6]

National Mission for Sustainable Agriculture

Currently, the risk of climate change represents a test for sustainable agriculture expansion[7] for guaranteeing food security, equitable access to nourishment resources, improving sustenance options and providing fiscal stability at the national level.[8]

The issues to be looked under this Mission are dry land agriculture, access to qualified data, bio-technology and risk management.[9] It provides for: to devise key plans at the Agro Climatic Zone level so that full proof mechanisms are placed to territorial scales for Research and Development, Technology and Practices, Infrastructure and Capacity Building, and to improve agri-produce through planned methods, for example utilization of bio-technology to improve range of crops and livestock, advertising effective irrigation

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[1]The Constitution of India, Art. 48A-Protection and improvement of environment and safeguarding of forests and wild life. "State shall endeavor to protect and improve the environment and to safeguard the forests and wild life of the country". (Inserted by the Constitution 42nd Amendment Act, 1976, sec. 10) (w.e.f. 3-1-1977). Art. 21, 51-A also guarantees the environment.

[2]India signed the UNFCCC on 10 June 1992 and ratified it on 1 November 1993. India acceded to the Kyoto Protocol on 26 August 2002.

[3]Jayant Sathaye, et. al., *Climate Change, Sustainable Development and India: Global and National Concerns,* 90 Current Science, No. 3, 314, 318 (February 10,2006)

[4]Center for global development "Developing Countries Are Responsible for 63 Percent of Current Carbon Emissions" 8/18/15, Available at https://www.cgdev.org/media/developing-countries-are-responsible-63-percent-current-carbon-emissions (Last accessed on 18-02-2017)

[5]*Id. at* 4

[6]Prime Minister's Council on Climate Change , Government of India " National Action Plan on Climate Change", available at: http://www.moef.nic.in/downloads/home/Pg01-52.pdf (Last accessed on 18-02-2017)

[7]National Mission For Sustainable Agriculture- Strategies for Meeting the Challenges of Climate Change, 15, Department Of Agriculture And Cooperation Ministry Of Agriculture New Delhi (August 2010), at 2.

[8]*Id* at II.

[9]National Action Plan on Climate Change, Prime Minister's Council on Climate Change,(2008), at 35.

frameworks, exhibition of proper technology, capacity building and skill advancement.[10]

NMSA also included Rashtriya Krishi Vikas Yojana (RKVY),[11] National Horticulture Mission (NHM),[12] National Food Security Mission (NFSM) and National Agricultural Insurance Scheme (NIAS).[13] In addition to above issues, one of the important aspects is to focus on "on-farm and off-farm" agricultural technologies to combat with climatic catastrophe.[14]

National Mission for Enhanced Energy Efficiency[15]

The Mission includes several new initiatives. Perform Achieve and Trade (PAT) is to enhance the cost effectiveness in improving the energy efficiency of energy Intensive industries through certification of energy saving which can be traded".[16]

It incorporates issuance of Energy Savings Certificates (ESCerts) to units for energy efficiency upgraded in addition to their targets, which will include processes that require more than 50 percent of the fossil fuel consumption in India, and help in limiting CO2 emission. About 700 large energy consuming units and electricity generation plants in India would be put under obligation to limit their energy consumption by a fixed percentage.[17]

For maintaining the finance viability of this mechanism, establishments which can limit emission more than what is specified under the mechanism, such establishments will be issued ESCerts for the amount of energy saved. These ESCerts could be utilized by different energy intensive entity for meeting the mechanism's mandate, assuming that they find it exorbitant to meet their own specified targets.[18] Energy efficiency ratings were made mandatory for 4 key appliances i.e. refrigerators, air conditioners, tubelights and transformers.[19] The results of PAT Cycle I are outstanding, it not only achieved the

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[10]See NMSA, *supra* note 6, at 11.

[11]Launched under XI five year plan. In the XI Five year Plan, Rs 27447 crores has been sanctioned under RKVY for taking up 5768 projects across various sectors, *available* at http://164.100.47.132/paperlaidfiles/AGRICULTURE/State%20of%20Indian%20Agriculture%202012-13%20(English)%20with%20cover.pdf

[12]*Id*.at. 86. The NFSM is currently under implementation in 482 districts of 19 States of the country.

[13]At present the scheme is being implemented by 24 states and two UTs. *See* Economy, available at: http://www.indiainbusiness.nic.in/economy/agriculture2.htm

[14]National Mission on Sustainable Agriculture, available at http://nmsa.dac.gov.in/

[15]India's cabinet approved the National Mission on Enhanced Energy Efficiency (NMEEE) on 24th June, 2010. India: Taking on Climate Change Post-Copenhagen Domestic Actions, 2, available at: http://moef.nic.in/downloads/public-information/India%20Taking%20on%20Climate%20Change.pdf

[16]S.P.Garnaik, *National Mission for Enhanced Energy Efficiency, Bureau of Energy Efficiency*, 3, (2010) *available* at http://www.moef.nic.in/downloads/others/Mission-*SAPCC-NMEEE*.pdf

[17]Sanjay Dube, et al., *Can the Learning's from International Examples Make the 'Perform Achieve and Trade (PAT) Scheme' Perform Better for India,* 11, (March, 2011), available at http://www.emergent-ventures.com/docs/A%20Discussion%20Paper%20on%20India-s%20Perform%20%20Achieve%20and%20Trade%20(PAT)%20Scheme.pdf

[18]*Id.*

[19]India's cabinet approved the National Mission on Enhanced Energy Efficiency (NMEEE) on 24th June, 2010. India: Taking on Climate Change Post-Copenhagen Domestic Actions, 2, available at : http://moef.nic.in/downloads/public-information/India%20Taking%20on%20Climate%20Change.pdf at 3.

target set for the years 2012- 2015, rather exceeded by more than 30 percent in terms of oil saving.[20]

The other initiatives of NMEE include *Market Transformation for Energy Efficiency, the Programme of Activities, Energy Efficiency Financing Platform, Framework for Energy Efficient Economic Development.* The NMEE has saved 700 Billion INR till March 2017[21] through "The Ujala Scheme"[22] and PAT both.[23]

National Mission for a Green India

The Green India Mission acknowledges the potentials and impacts that the "*forest and other natural ecosystems have on atmosphere adaptation/mitigation and food, water, environmental and employment security of tribal and forest dwellers, in particular, and the country at a greater level*" in the relation to climate change.[24] The objectives of the Mission are: to increase forest blanket on 5 m. ha. of forest/non-forest terrains and enhanced quality of forest cover on an additional 5 m. ha., and to increase yearly CO2 sequestration by 50 to 60 million tonnes in the year 2020.[25]

Under the budget of 2011-12, the central government has allotted Rs. 200 crores from National Clean Energy Fund for the initiation of GIM.[26] A sum of Rs. 4,500 crores for every year has been reserved for the GIM, and breaks in prerequisite, if any, will be met from outside financing.[27] In the year, 2014, government has allocated a sum of Rs. 460 Billion for GIM for next 10 year.[28] The financial commitment by government shows positive approach for combating climate change issues.

National Mission on Sustainable Habitat

The NMSH plans to make urban areas sustainable by enforcing changes in "*energy efficiency in buildings, management of solid waste and shift to public transport*".[29]

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[20]Press Information Bureau ,Government of India, Ministry of Power, Ministry of Power issued more than 38 lakhs Energy Savings Certificates to Industries , issued on 22-March-2017, available at http://pib.nic.in/newsite/PrintRelease.aspx?relid=159670

[21]M. Ramesh, Energy efficiency 2.0', available at http://www.thehindubusinessline.com/specials/energy-efficiency-20/article9631198.ece

[22]In this scheme, the replacement of incandescent bulbs are done with LED bulbs

[23]M RAMESH, Energy efficiency 2.0', available at: http://www.thehindubusinessline.com/specials/energy-efficiency-20/article9631198.ece,

[24]National Mission for Green India, at 1.

[25]*Id*. at 6.

[26]Pranab Mukherjee, Ministry of Finance, Budget of 2011-2012, (Feb 28, 2011), *available* at: http://indiabudget.nic.in/budget2011-2012/ub2011-12/bs/bs.pdf, at 19.

[27]Sujatha Byravan & Sudhir Chella Rajan, *An Evaluation Of India's National Action Plan On Climate Change*, 21, (July 2012), available at: http://www.indiaclimatemissions.org/download/NAPCC%20 Evaluation.pdf

[28]Neha Sethi, CCEA approves Rs.46,000 crore Green India Mission, available at: http://www.livemint.com/Politics/vmQa48zjStIKQiLx5m6wWN/CCEA-approves-46000-crore-Green-India-Mission.html

[29]*PM Approves Mission On Sustainable Habitat,* The Economic Times, Jun 20, 2010 available at: http://economictimes.indiatimes.com/features/dateline-india/pm-approves-mission-on-sustainable-habitat/ articleshow/6069320.cms

Sustainable habitat underlines the idea that "*achieving a balance between the economic and social development of human habitats together with the protection of the environment, equity in employment, shelter, basic services, social infrastructure and transportation*".[30] The NMSH covers following aspects: extension of the Energy Conservation Building Code which provides for design of new and bigger commercial buildings to manage energy consumption in best possible way;[31] better Urban Planning and Model Shift to Public Transport providing long run transport plans to promote the development of medium and small urban areas in best possible manner that affirms competent and suitable public transport;[32] recycling of Material and Urban Waste Management, the target would be the improvement of technology for generating electricity from waste. This also includes a major R&D programme, concentrating on "*bio-chemical conversion, waste water use, sewage utilization and recycling options, plasma conversion of waste of biological origin to liquid fuels*" that can be used as an alternate for conventional fuels wherever possible.[33]

Provision of Rs. 260 billion has been made for urban local bodies under the 13th Finance Commission.[34]

National Mission for Sustaining the Himalayan Ecosystem

The Himalayan ecology is important for the livelihood of near about 1.3 billion people in Asian region. Natural geological wealth such as "*forestry, wild life, flora, fauna and biodiversity, snow, water bodies, traditional knowledge and mountain agriculture*", portrays the peculiarity of region.[35] The NMSHE would endeavor to develop measures for maintaining and protecting the Himalayan glaciers and mountain ecological system by: increasing supervision of Himalayan ecological system with a focus on melting of Himalayan glaciers and its effect on downward water channels and other downstream socio-ecological activities;[36] and Facilitating community-based administration for safeguarding and developing the forest cover in the region.[37] In year 2014, government approved Rs. 4.5 billion for the same.[38]

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[30]National Mission on Sustainable Habitat, at 6.

[31]*Id*. at 13-14

[32]*Id*.

[33]*Id*.

[34]Section 2, Summary record of discussions at the meeting chaired by the Principal Secretary to PM on 22.3.2010 to discuss the draft Mission Document for the National Mission on Sustainable Habitat.

[35]National Mission for Sustaining the Himalayan Eco-System-Mission Document, at 7.

[36]*Id*. at 12.

[37]*Id*.

[38]Press Information Bureau, Government of India, Ministry of Science & Technology, "Approval for the National Mission for Sustaining Himalayan Ecosystem launched under the National Action Plan on Climate Change" 28-2-2014, available at http://pib.nic.in/newsite/PrintRelease.aspx?relid=104353

National Mission on Strategic Knowledge for Climate Change

Science plays a central role in addressing the issues related to environment and it is expected that technology should provide best possible and feasible remedy at the same time legal measure should observe the national response.[39] The fundamental objective of this mission is to firm the base and facilitate research capacity and giving strategic knowledge for climate change.[40]

The scientific programme under the mission includes "*National Carbonaceous Aerosols Programme; setting up of Long Term Ecological Observatories for Climate Change Studies; Coordinated Studies on Climate Change for North Eastern Region; and setting up of Centre for Climate Change Studies*".[41]

Jawaharlal Nehru National Solar Mission

The Government of India formally started the JNNSM in November 2009 with certain aims to achieve 20,000 megawatts of on-and off-gird solar energy based on PV and CSP technologies by 2022 and increasing numeric count of solar oriented applications for example solar lighting, heater, and water pumps.[42]

The JNSSM plans to deal with the inadequacies of former plans through updated and more alluring feed-in-tariffs, a single window application process, and RPOs providing solar purchase mandate. Under the JNNSM, the NVVN is under an obligation to buy the costly solar power from developers and club it with low price coal based power before distributing the integrated power to the different enterprises at an attractive cost.[43] The cost of solar based electricity has been an important concern for the stakeholders but with the passage of time and technological development the tariff rates per unit have fallen up to 2.62 per unit and this is a positive sign for JNNSM.[44] JNNSM is divided into 3 phases, viz:

Phase 1: (2010-2013) sets target of500 MW of grid-connected and 200 MW of off-grid solar PV will be installed.[45]

Phase 2: (2013-2017) sets target of additional installations of 3,000-10,000 MW of combined PV and CSP capacity. For Phase 2, it will be mandatory to use cells and modules manufactured in India.[46]

Phase 3: (2017-2022) sets target of the off-grid solar capacity installations will reach 2,000 MW, on-grid capacity will reach 20,000 MW, 20 million m2 of solar thermal

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[39]National Mission on Strategic Knowledge For Climate Change-Mission Document, at 8.

[40]Rs. 1050 Crore on Strategic Knowledge for Climate Change, available at: http://hexagreen.com/environment/rs-1050-crore-on-strategic-knowledge-for-climate-change

[41]*Id.*

[42]Jawaharlal Nehru National Solar Mission-Towards Building Solar India, at 3.

[43]D S. Arora et al., Indian Renewable Energy Status Report-Background Report for DIREC . 78. 2010, Oct. 2010, *available* at: http://www.nrel.gov/docs/fy11osti/48948.pdf

[44]Srikanta Tripathy, Solar tariff plunges to new low at Rs 2.62 per unit', May 10, 2017 Available at http://timesofindia.indiatimes.com/city/jaipur/solar-tariff-plunges-to-new-low-at-rs-2-62-per-unit/articleshow /58608089.cms

[45]*Supra* note 44.

[46] *Id.*

collector area will be installed, and 20 million solar lighting systems will be deployed in rural households.[47] Progress under JNNSM[48] is as follows:

Solar PV Pump	Street Lighting System	Home Lighting System	Solar Lantern Lantern	Power Plants
7,373 Unit	2,04,523 Units	7,48,676 Units	7, 31,202 Units	9,142.60 KWP

National Water Mission

The objective of National Water Mission is "*conservation of water, minimizing wastage and ensuring its equitable distribution both across and within States through integrated water resources development and management*".[49] Five objectives have been recognized by the NWM are: detailed water data base in public sphere and evaluation of the impact of climate change on available water resources, advancement of citizen and state efforts for "*water conservation, augmentation and preservation*";[50] proper care to susceptible region incorporating the over exploited territories; expanding water use efficiency by 20 percent; and advancement of basin level joint water resources management.[51]

A two-tier framework has been advised, one at the Central level and the other at the State level for making the regulation and road map for execution of the NWM.[52]

III. FOREST POLICIES

National Forest Policy, 1988

It acknowledges that "*forests in the country have suffered serious depletion. This is attributable to relentless pressures arising from ever-increasing demand for fuel-wood, fodder and timber; inadequacy of protection measures*".[53] The basic objective of the policy is to "*increase the forest/tree cover in the country through massive afforestation and social forestry programmes, especially on all denuded, degraded and unproductive lands*".[54] The NFP has set the goal of at least "*one-third of the total landscape of the nation should be under forest or tree cover, while in the hills and in mountainous regions, it should be two-third of the area under such cover in order to prevent erosion and land degradation and to ensure the stability of the fragile eco-system*".[55]

In order to tackle the fuel, wood and fodder demand, a time bound plan of afforestation

[47] *See* Jawaharlal Nehru National Solar Mission-Towards Building Solar India

[48] Central Statistics Office Ministry of Statistics and Programme Implementation, Government of India, Energy Statistics 2012 (Nineteenth Issue), at 29, available at: http://mospi.nic.in/mospi_new/upload/Energy_Statistics_2012_28mar.pdf

[49] Comprehensive Mission Document of National Water Mission-Volume II, at iii-v.

[50] *Id.*

[51] Ministry of Water Resources, available at: http://www.pib.nic.in/newsite/erelease.aspx?relid=71513

[52] *Id.*

[53] *See* Preamble to the National Forest Policy 1988.

[54] *See* Basic Objective of the National Forest Policy 1988.

[55] National Forest Policy1988, para 4.1.

and tree planting is need of the hour in national interest.[56] The Indian forests reported to have 6,662 mt carbons sink, enlisting a yearly augmentation of 38 mt of carbon since 1995 to 2005.[57]

The National Afforestation and Eco-Development Board

The NAEB[58] is accountable for "*promoting afforestation, tree planting, ecological restoration and eco-development activities in the country, with special attention to the degraded forest areas and lands adjoining the forest areas, national parks, sanctuaries and other protected areas as well as the ecologically fragile areas*".[59]

National Environmental Policy, 2006

The NEP sets out climate change as a major challenge.[60] The substantial amount of resources would basically be needed for adaptation of measures for climate change impact, if human miserableness is to be hedged.[61] The NEP charts out certain measures to address climate change: relying on various approaches which are beneficial in nature; supremacy to right to development; equitable claim over planet's environmental resources to all; to trace out the important areas which poses threat to India pertaining climate change, specially the likely effect on "*water resources, forests, coastal areas, agriculture, and health*"[62] and promote domestic industry to engage in clean development mechanism.[63]

The Compensatory Afforestation Fund Management and Planning Authority

The Hon'ble Supreme Court has directed for the creation of a body for Management of Compensatory Afforestation Fund and collection of Net Present Value of forest lands[64] and in pursuance of the above direction, Indian government constituted an authority called CAMPA.[65] The apex court also ordered the Adhoc-CAMPA in absence of CAMPA.[66] The Indian government has constituted National CAMPA council to chart out guidelines for the performance of state CAMPA.[67] The CAMPA is "*a funding mechanism for enhancing forest and tree cover and conservation and management of wildlife*".[68]

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[56] *Id*. at para 4.2.1.

[57] India's Forest and Tree Cover Contribution as a Carbon Sink, *available* at: http://envfor. nic.in/ modules/ about-the-ministry/CCD/Contri_carbon_sink.pdf

[58] It came into existence in October, 1992.

[59] Ministry of Environment & Forests, Annual Report 2004-2005-Regeneration And Eco-Development, at 75, available at: http://envfor.nic.in/report/0405/Chap-06.pdf

[60] The National Environment Policy, 2006 at.7.

[61] *Id*. at 42.

[62] *Id*. at 43

[63] *Id*. at 43.

[64] In the case of T.N. Godavarman Thirumulpad vs. Union of India, AIR2005SC4256, Supreme Court issued direction for the creation of CAMPA.

[65] *See* Vide Extraordinary, Notification dated 23.04.2004, Ministry of Environment and Forest.

[66] *See* Guidelines for Investment Policy and Procedure for Investment of funds lying with Ad-Hoc CAMPA.

[67] *See* Ministry of Environment and Forest, F.No.13-1/2009-CAMPA, *available* at: http://envfor.nic.in/ downloads/public-information/CAMPA-order-dated-13.8.pdf

[68] See Guidelines on State Compensatory Afforestation Fund Management and Planning Authority (State CAMPA).

III. EMISSION REDUCTION POLICY

National Policy on Biofuel, 2009

India shares the privilege of being in the fastest thriving economies on the globe, where it requires the adequate supply of energy to maintain the same. The major chunk of energy demands are met by the fossil fuels, which in term accelerate the carbon emission. In order to become independent in term of fossil fuels the NPB promotes the Bio-fuels (biodiesel and bio-ethanol) as an attractive renewable alternative to conventional fossil fuels.[69] The NPB provides that by the year 2017, a target of 20 percent combination of biofuels, both for the bio-diesel and bio-ethanol should be achieved.[70]

IV. ENERGY POLICIES

There have been major shifts in the way governments deal with energy related climate issues in recent years. Inclusion of sustainable development and tackling climate change have become the inherent part of energy planning, analysis and policy making in number of countries.[71] On a factual note, commercial energy demand in India has increased by 70 percent in the recent four decades.[72] So, it has become imperative to adopt detailed energies policies in India, the energy related policies and programmes are as follows:

National Electricity Policy, 2005

The aim of National Electricity Policy is to speed up the growth of the energy, giving supply of energy to all regions and ensuring the stake of consumers and different stakeholders at the same time acknowledging the accessibility of energy sources and technology to use natural resources.[73] The policy stresses upon harnessing the energy from renewable sources of power as its one of the goal.[74]

The policy outlines following measures for the promotion and generation of renewable energy: non-conventional sources of energy being the most environment friendly there is an urgent need to promote generation of electricity based on such sources of energy";[75] efforts need to be made to reduce the capital cost of projects based on nonconventional and renewable sources of energy";[76] the strict application of Renewable Energy Purchase Obligations.;[77] the SERC is empowered to fix relevant tariffs for renewable energy based

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[69]Policy Brief- National Policy on Biofuels, available at: http://www.indiaclimateportal.org/component/option,com_policybrief/view,policybriefdetail/id

[70]National Policy on Biofuels 2009, Ministry of New & Renewable Energy, Government of India.

[71]See IEA, *supra note* 42, at 3.

[72]Clean Technology Fund Investment Plan For India, 21, *available* at http://moef.gov.in/downloads/public-information/IP-CTF-2011.pdf

[73]National Electricity Policy -03-Feb-2005,*available* at: http://pib.nic.in/archieve/others/2005/nep20050209.pdf

[74]*Id.*

[75]National Electricity Policy-2005, para, 5.12.2, at 16.

[76]*Id.*

[77]*Id.*

power generations and purchase of electricity by DISCOMs, keeping in mind the competitive bidding process.[78]

National Energy Labeling Programme, 2006

Energy efficiency labeling on consumer appliances is an enlightening instrument that is extensively promoted and used over the European Union to increase awareness of environmental concerns, for example global warming.[79] The programme provides that "*the potential benefit of the scheme is substantial, as it could spur consumers to select more energy efficient products, which in turn would reduce the national electricity*".[80] This programme addresses measures to promote the manufacturers to manufacture the energy efficient products and on the other hand this will also provide consumer to go for informed choice before finalising the energy appliances.[81]

Energy Conservation Building Code

The ECBC sets minimum energy standards for building, "*which is having a connected load of 100 kw or contract demand of 120 kw and above and is used or intended to be used for commercial purposes*".[82] Three categories of buildings i.e. a) Day use office buildings, b) BPOs, c) Shopping malls have been put in public sphere for labeling programme.[83] Currently 136 buildings have been earmarked for eligibility for issuance of label, while ESCO model[84] is being implemented for promoting energy efficiency measures in existing buildings through performance contracting.[85]

V. OTHER POLICIES FOR ENERGY SAVINGS

Bachat Lamp Yojana, 2008

The BLY is an ambitious programme which endeavours to encourage the use of CFLs as a substitute for normal bulbs used in homes and otherwise. The CFL is to cost rupees 15 (the present rate for per CFLs varies from Rs. 80 to Rs. 100) which in turn likely to boost the use of these energy efficient product for every household.[86] A target of replacing 400 million normal bulbs has been set out which in turn likely to reduce around 4000 MW of

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[78] *Id*.

[79] National energy labelling programme launched for electrical appliances, Jul 15, 2006, available at: http://www.downtoearth.org.in/node/8086

[80] Shri Sushilkumar Shinde, Union Minister of Power, Launch Of National Energy Labeling Programme, New Delhi, 2-3, (May 18, 2006) *available* at: http://powermin.nic.in/whats_new/pdf/Minister_speech_on_National_Energy.pdf

[81] *Id*.

[82] The Energy Conservation Act, § 2 (c) (amended 2010).

[83] Energy Conservation, available at: http://powermin.nic.in/acts_notification/energy_conservation_act/introduction.htm.

[84] An ESCO, or Energy Service Company, is a business that develops, installs, and arranges financing for projects designed to improve the energy efficiency and maintenance costs for facilities over a seven to twenty year time period. ESCOs generally act as project developers for a wide range of tasks and assume the technical and performance risk associated with the project, available at: http://www.naesco.org/resources/esco.htm

[85] See Energy, *supra* note 79.

[86] *Id*.

energy demand and a total reduction of 24 mt of CO2 per year.[87] The BEE has taken major promising step by developing a wide framework "BLY-PoA" for "*key CDM requirements, including the project baseline, additionality, methodology, monitoring protocols*" by which the assessment of reduced CO2 emissions would be carried out.[88] The major benefit for employing PoA methodology is that it minimizes the time and processing costs for registered projects.[89]

Clean Energy Cess on Coal

A clean energy cess has been levied on coal at the price of 1 USD per ton, applicable to domestic coals as well as imported coal. The fund generated will be accounted to the NCEF for carrying out research of new projects in clean energy technologies and environmental remedial programmes.[90]

Clean Development Mechanism

In pursuant to decision take at COP-7, the Central Government has constituted the National Clean Development Mechanism (CDM) Authority for the purpose of safeguarding and improving the environment.[91] Around 959 projects have been approved by the NCDMA.[92]

REDD

The REDD is an international endeavour to generate encouragement for developing nation to save and manage their available forest resources, in order to combat climate change and to contribute in global movement. The REDD just not only provide for examining the deforestation and forest degradation but it also "*includes incentives for positive elements of conservation, sustainable management of forests and enhancement of forest carbon stocks*".[93] India is has no specific policy in this regards, but it is looking forward to implement it with the help of UNEP.

VI. CONCLUSION

India's geographical position and going on social changes makes it highly susceptible to climate change, this compelled it to take serious interest for reducing the threat of climate change by making various legal and social initiatives. Indian position on emission cut is not synced with its energy, security, and economic growth law and policy. India has its genuine apprehensions about the impacts of climate change. Majority of Indian population are still do the cultivation and this is most sensitive sector with regard to impact of climate change. Decline in glacier levels, reduction in precipitation and frequent flooding in fertile lands results in shortage of usable water and that is directly related to crop production and livestock growth. Apart from this various national growth

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[87] *Id.*

[88] *Id.*

[89] See India, *supra* note 10 at 7.

[90] See India, *supra* note 10.

[91] National CDM Authority, available at: http://www.cdmindia.gov.in/constitution.php

[92] No. of Approved Reports, available at: http://www.cdmindia.gov.in/approved_projects.php

[93] Jaimini Sarkar, REDD, *REDD+ and India*, 101 Current Science, No. 3, 265, 266 (Aug. 10 2011)

indicators such as health, energy demand, infrastructure development etc., will also not remain unaffected.

Indian growth tempo is strong today, but still many social and socio-economic problems are till date unaddressed. In Indian society there is a critical gap between rich and poor. The problems of poverty, unemployment and lack of education are the pest on human development tree for the healthy growth, for this we need promising efforts and this can be achieved by harmonizing the industrial growth with climate. Increasing levels of GHG emission has direct relation with industrialization. But lack of harmony between the later and human growth often results in conflict. Thus, India has to find a fine balance between economic growth and reduction in emissions.