



**INDIA'S
EXPERIENCES IN
ASSESSING
NEEDS AND
PRIORITIES IN
RELATION TO
MITIGATION
ACTIONS**

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INTRODUCTION



- India's climate change policy is located within the framework provided by the National Environment Policy, 2006, which promotes sustainable development within the constraints imposed by ecology and imperatives of social justice.
- India believes that environmental conservation can go hand in hand with development and assured that while putting the country on a high growth path.

The Government will Keep Sustainability At The Core of India's Growth Path.



**STEPS
TAKEN**

PRE-2020

National Action Plan on Climate Change (NAPCC-2008)

- This brought a sharper focus on climate change interventions with various focused missions.

State Action Plans on Climate Change (SAPCC)

- States/UTs have also prepared SAPCC in line with the NAPCC taking into account State's specific issues relating to climate change. So far, 33 States/UTs have prepared their SAPCCs.

Expert Group by the Planning Commission (2010)

- This was set up for evolving Low Carbon Strategies for Inclusive Growth in the backdrop of India's voluntary commitment to reduce emission intensity of its GDP by 20%-25% by 2020 over 2005 levels . The cumulative costs of low carbon strategies have been estimated to be around 834 billion US dollars at 2011 prices, over the two decades between 2011 and 2030.

Climate Change Action Programme (CCAP-2014)

- A Central sector scheme has been launched with a total cost of approx. **USD 42.384 million** with the objective to build and support capacity at central & state levels, strengthening scientific & analytical capacity for climate change assessment, establishing appropriate institutional framework and implementing climate related actions in the context of sustainable development. **The budget outlay of CCAP scheme for the period of three years from 2017-18 to 2019-20 is approx USD 19.3 million.**

PROGRESS UNDER MISSIONS AND ACHIEVEMENTS

Jawaharlal Nehru National Solar Mission

- **Aims:** To increase share of solar energy in the total energy mix through development of new solar technologies. The Mission has adopted a three-phase approach.
- **Target:** Target of Grid Connected Solar Power Projects is 100 GW by 2022 (40 GW Grid connected Rooftop projects and 60 GW large and medium size land based solar power projects).
- **Finance:** Total required investment in setting up 100 GW will be around USD 87.69 billion.
- In I phase, the Government of India has provided approx. USD 2.2 billion as capital subsidy to promote solar capacity addition in the country. In II (2013-2017) and III (2017-2022) phases, capacity has been aggressively ramped up.
- **Achievement:** 8740 MW grid connected solar, 360 MW off-grid and 8.872 million sq. meters of solar thermal collector area has been achieved. A total of 27GW of solar electric generation capacity has been installed.

National Mission for Enhanced Energy Efficiency (NMEEE)

- **Aims:** To promote innovative policy, regulatory regimes, financing mechanisms and business models for energy efficiency to achieve growth with ecological sustainability.
- **Target:** PAT cycle I (2012-15) resulted in energy savings of 8.67 Mtoe from 427 DCs against the targeted energy saving of 6.886 Mtoe. PAT Cycle II (2016-19) targeted to achieve 8.869 MTOE energy savings from 621 DCs and PAT cycle III (2017-20) targets to achieve 1.06 MTOE energy savings from 116 new DCs. The energy consumption of new DCs is 35.00 MTOE. In total, there are 737 DCs (621 DCs of PAT Cycle II and 116 DCs of PAT Cycle III) participating under PAT scheme.
- **Achievement:** 82.78 lakh street lights and 32.38 crore LED bulbs have been deployed so far. The Star labeling program for variable speed air conditioners (inverter ACs) have been made mandatory since January 2018.

National Mission for a Green India

- **Aims:** To protect, restore and enhance India's diminishing forest cover and responding to climate change by a combination of adaptation and mitigation measures.
- **Target:** To increase forest cover on 5 million hectares of forest/non-forest lands, improved quality of forest cover on a total of 10 million hectares and also to increase forest-based livelihood income of about 3 million households. It also envisages enhanced annual CO₂ sequestration by 50 to 60 million tonnes in the year 2020.
- **Finance:** Collectively, a sum of approx. USD 6.02 million has been released to 6 states in 2016-17.
- **Achievement:** Activities in 32451.72 hectares area of forest and non-forest lands in four states namely, Chhattisgarh, Odisha, Manipur and Karnataka in the financial year 2015-16 have been carried out. Convergence Guidelines with MNREGS and CAMPA have been issued.

National Mission on Sustainable Habitat

- **Aims:** To promote sustainability of habitats through improvements in energy efficiency in buildings, better urban planning, improved management of solid and liquid waste, modal shift towards public transport, improved resilience of infrastructure and conservation.
- The Mission is being implemented through four flagship programmes- Atal Mission on Rejuvenation and Urban Transformation (AMRUT), Swachh Bharat Mission, Smart Cities Mission. Energy Conservation Building Code 2007 has been made mandatory. Waste to Energy plants with capacity of 88 MW are functional. Another 56 plants with capacity 405 MW are under construction/ tendering stage.
- Under Swachh Bharat Mission (Urban)- 4041 urban local bodies with financial outlay of approx. USD 9.2 billion are being supported including Solid Waste Management. A sum of approx. USD 0.6 billion has been released till date to all states.
- Under AMRUT Mission, 500 cities with population of 100,000 and above are covered for water supply, sewerage and sanitation schemes. Out of State Annual Action Plan (SAAP) of approx. USD 11.3 billion, outlay of approx. USD 7.3 billion approved and approx. USD 595.42 million has been released to various states.
- Under, Smart Cities Mission - A financial outlay of approx. USD 7.3 billion with a coverage of 100 cities.

POST 2020

In 2015, India submitted its Nationally Determined Contribution

NDCs under the Paris Agreement, wherein India voluntarily pushed up its target of reducing emission intensity of its GDP by 33 - 35% from 2005 levels by 2030. As a result of India's multiple mitigation actions, the emission intensity has already reduced by 21% between 2005 and 2014.

India's NDC includes an ambitious plan to achieve 40% cumulative electric power installed capacity from non-fossil fuel based energy resources by 2030.



OUTCOMES



India's energy intensity of GDP started declining at a much lower level of per capita GDP as compared to the developed world. India's primary energy intensity of GDP has fallen from 0.0004 toe in 1990 to 0.0002 toe in 2017.



With the adoption of major flagship energy efficiency programs, energy saving has resulted in total cost savings worth USD 7.8 billion (approx) and contributed in reducing 108.57 MT of CO₂ emission. The overall electricity savings are 7.21% of the net electricity consumption, total thermal energy saved is 2.7% of the net thermal energy consumption and 2.0% of the net energy supply in 2017-18. In terms of electrification of households, India has achieved almost 100 per cent electrification.



The India's Second BUR submitted to UNFCCC in Dec 2018 shows that emission intensity of India's GDP came down by 21% between 2005 & 2014 and it's achievement of climate goal for pre-2020 period is on track.



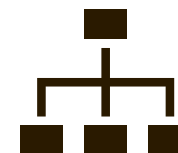
In order to promote electric mobility, NEMMP with an objective of a total electric vehicle sales of 6-7 million units by 2020 and FAME scheme were launched. With this, electric two wheelers sales have increased to around 54,800 in 2018 as compared to around 2000 in 2017.



The share of renewables in total generation has increased from 6 per cent in 2014-15 to 10 per cent in 2018-19.



At the national level, the roadmap for implementation of India's NDC is being prepared. Nationally Determined Contribution (NDC) implementation Committee constituted comprising of relevant Ministries and stakeholders. Six Sub-Committees for specific areas of work including Sub-Committee on Finance were constituted.



To mobilize domestic and new & additional funds to implement the mitigation and adaptation actions in view of the resource required and the resource gap.

CHALLENGES




- **Finance Needs in Achieving NDC in India:**

1. NDC preliminary total estimates for meeting climate change actions between now and 2030 are at USD 2.5 trillion (at 2014-15 prices). This roughly corresponds to an annual requirement of USD 0.17 trillion per year which amounts to around 8 per cent of India's GDP in 2014-15.
 2. Study by ADB indicates that approximate adaptation cost for India in energy sector alone would roughly be about USD 7.7 billion in 2030s and also projects the economic damage and losses in India from climate change to be around 1.8% of its GDP annually by 2050.
 3. Estimates by NITI Aayog- Mitigation activities for moderate low carbon development would cost around USD 834 billion till 2030 (at 2011 prices).
 4. International Finance Corporation (IFC)- Estimated USD 3.1 trillion climate investment in key sectors between 2018 and 2030, to fully meet its NDCs.
- **Current Financing:** Climate actions have so far been largely financed from domestic resources.



DETAILING NDC FINANCE REQUIREMENTS

- Need for financial assessment of the available resources and additional financial requirements and the type of investments that would be financially viable part for low carbon development to achieve international climate commitments by 2030.
 - This requires proper assessment of financial gap that would required to be filled up through international climate finance, private sector financing and different financial instruments.
 - As the new quantified goal of climate finance that has to be set before 2025, developing countries should be ready with concrete assessment of its financial needs.
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- **Access to energy**


1. India accounts for around 18% of world's population and uses only around 6% of the world's primary energy. India's per capita energy consumption is at 0.6 toe as compared to the global per capita average of 1.8 toe. It's energy intensity of GDP started declining at a much lower level of per capita GDP as compared to the developed world.
 2. Access to energy is important not just in its own right but also due to its linkages with other social indicators and with HDI. A country with 100 Gigajoules of per capita energy consumption has on average an HDI of around 0.8. India has a per capita energy consumption of 24 Gigajoules and an HDI of 0.64 in 2017. Therefore, India would have to increase its per capita energy consumption to around 4 times its current level to reach an HDI of 0.8.
 3. While energy intensity of India's GDP has been declining in the recent past, India cannot become an upper-middle-income country without rapidly raising its share of the global energy consumption.
 4. Increasing access to energy must come at much lower costs to the environment.
- Country has the responsibility of lifting around 360 million people out of poverty and raising the standard of living.

**LESSONS
LEARNT &
WAY
FORWARD**



- To mobilize domestic and new & additional funds from developed countries to implement the mitigation and adaptation actions in view of the resource required and the resource gap.
 - Suggest policies and actions needed to generate required resources and manage/ deploy them through appropriate mechanisms/ agencies in achieving the goals of NDC.
 - Mapping and detailing the existing and proposed policies and actions needed to generate required resources and deploy them through appropriate mechanisms to achieve the NDC goals.
 - India's climate actions have so far been largely financed from domestic resources. The Government's budget is the main source of climate related finance in India. Substantial scaling up of these plans would require greater resources.
 - **International climate finance, private sector and financial instruments**
 1. **International Assistance:** India has consistently argued that new, additional and predictable finances from developed to developing countries for mitigation, adaptation, technology transfer and capacity building.
 2. **Private Sector:** Private sector financing is likely to be concentrated in sectors like that of renewable energy and energy efficiency where there are considerable co-benefits. The major issue is acquiring information about the total available private sector finance that is devoted to climate change activities and therefore predicting it for the future.
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- **Market Mechanisms**

1. Market mechanisms, especially, cap and trade schemes have been used worldwide, especially at sub-national levels, induce the optimal level of emissions at the least cost.
 2. India should have a clear plan of action ready for how domestic mechanisms can be used in conjunction with the international setup to the best of its advantage.
 3. India already has the experience of the Perform Achieve and Trade as a market mechanism in the case of energy efficiency for select industries.
 4. It is important to deliberate what role market mechanisms could play in helping India achieve its mitigation targets and what sectors such a mechanism should cover and the geographical scope of such mechanisms.
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Questions Yet To Be Answered

- 1. What could be the possible mechanisms for raising necessary financial resources?**
- 2. What could be the possible options for financial instruments that can be thought of for climate financing?**
- 3. What role can different forms financial instruments play in raising finance to support climate investments?**





*Thank
You!*