



TRACKING CLIMATE CHANGE POLICY: INDIA'S POSITION AND COMMITMENTS

NOVEMBER 2022

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List of Abbreviations		
S.No.	Abbreviation	Definition
1.	POP	Persistent Organic Pollutants
2.	CFC	Chlorofluorocarbons
3.	UNEP	United Nations Environment Programme
4.	HFC	Hydrofluorocarbons
5.	ODS	Ozone Depleting Substances
6.	UNFCCC	United Nations Framework Convention on Climate Change
7.	COP	Conference of Parties
8.	IPCC	Intergovernmental Panel on Climate Change
9.	INC	Intergovernmental Negotiating Committee
10.	INDCs	Intended Nationally Determined Contributions
11.	SDGs	Sustainable Development Goals
12.	GHG	Greenhouse Gas
13.	NEP	National Environment Policy
14.	EPA	Environment Protection Act
15.	VNR	Voluntary National Review

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EXECUTIVE SUMMARY

Exceeding temperature rise and heatwaves across the world are a clear indicator of the urgency of the climate change crisis. The sustainability goal 13 which was a marker for climate action now interlinks the need for climate action to Covid-19 recovery compelling governments to take climate positive actions in the process of rebuilding the economies. India has always advocated strongly for climate action and has also taken strong leadership to bring talks on justice, access, vaccine inequality among different nations.

“The world is reaching the tipping point beyond which climate change may become irreversible. If this happens, we risk denying present and future generations the right to a healthy and sustainable planet – the whole of humanity stands to lose.”
-Kofi Annan

The development of international climate change policy can be understood from the various international treaties, conventions and protocols that have been signed by the countries to create environment safeguards.

While the development of climate policy has been gradual and based on scientific evidence that has been found over the years, it has also over time led to varying principles of liabilities for countries with developed nations being held accountable for their contribution to climate change and precautionary measures being adopted for the developing nations to achieve the aims of sustainable development in the near future.

The climate change policies have included environment conservation aspects to the recognition of mitigation and adaptation strategies towards climate change. The formation of these policies at an international level have then influenced domestic policies for countries.

India has been an active voice for climate change mitigation at international, regional, and domestic levels. It has even been considered as a ‘defender’ of climate justice and ‘leader’ among developing nations compelling industrialized nations to take more proactive measures. It has also been equally reactive to the international development of policy and stayed updated on the innovation of new technology, need for climate finance and advocating strongly for least developed and most vulnerable countries in the world. In the many achievements of India in this domain numerous challenges have continued to face the nation especially in combating pollution, the energy efficiency sector and elimination of climate risks.

This report aims to highlight the historical development of international climate change policy and its relevance to the contemporary times assessing the roles of these commitments by nations on the current fight against climate change. It also looks at India’s commitments and the stand taken by the nation in the various stages of the development.

INTRODUCTION

The urgency of mitigating climate change has become increasingly apparent from the rise in global temperature, change in weather conditions, heatwaves across the globe and the more technically indicative aspects such as the melting of glaciers, shifting of rain patterns, rising sea levels and storm intensity.¹ Combating climate change has become one of the most important aims globally which requires cooperation between countries. Under various conventions and meetings, the member countries have been discussing and evolving frameworks to combat climate change related cooperation through international law and policy mechanisms.

From the early nineteenth century, scientists such as Joseph Fourier and Eunice Foote found evidence to suggest that the earth's temperature was rising because of an atmospheric insulating blanket. It was found that the insulating blanket composed of carbon dioxide and water vapor in the Earth's atmosphere which traps escaping infrared (heat) radiation.² With the industrial revolution the concentration of carbon dioxide and other greenhouse gases grew manifold and contributed to more heat being trapped in the atmosphere.

The global community started making note of these anthropogenic interventions and started developing plans and undertaking policy measures for shaping the way for a sustainable future. An Intergovernmental Panel on Climate Change (IPCC) was formed in 1988 with its headquarters in Geneva, Switzerland as an intergovernmental body of the United Nations which was primarily responsible for advancing knowledge on human-induced climate change.

The policymakers have been attempting to balance the climate related aspects with the advancement of scientific discovery. The initial actions were intended to conserve the environment and minimize the impact of human activity on the environment which meant limiting the contribution to pollution and overutilization of natural resources. However, gradually a more comprehensive framework was considered essential which included elements of conservation of the environment, recognizing the loss and damage which has already occurred, aspects related to mitigation of climate change and a well-rounded approach to the future with sustainable development principles.

Global Temperature Rise

The global average temperature has been continued to rise in the past few decades. Increased greenhouse gas emissions have resulted in higher average temperatures at the Earth's surface which

¹ Policy Brief, Climate Change, OECD, August 2007.

² Global Climate Change, Vital Signs of the Planet available at https://climate.nasa.gov/evidence/#otp_history (last accessed on July 20, 2022)

are expected to rise further. Majority of the pollution has been attributed to the industrial revolution which began in the 1700s and spread across the world.

In the past few decades, the rise in temperature has been observed at alarming rate, the IPCC in its special report on global warming recorded that roughly 2-degree Fahrenheit (1 degree Celsius) increase in global average surface temperature that has occurred since the pre-industrial era (1880-1900). The reference of the 'pre-industrial' baseline was made by the Intergovernmental Panel on Climate Change (IPCC) (Annexure 4) in its Assessment Reports. Although no formal definition has been given to the term it can be understood with context.

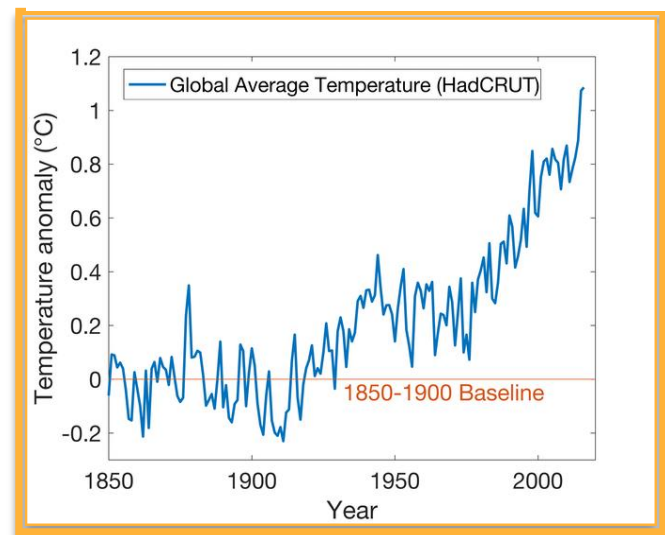
Why does one degree rise in global temperature matter?

While we know that local temperature goes on changing, the global temperature mainly depends on how much energy the planet receives from the Sun and how much it radiates back into space.³ The energy coming from the Sun fluctuates very little year by year, while the amount of energy radiated by Earth is closely tied to the chemical composition of the atmosphere—particularly the amount of heat-trapping greenhouse gases.⁴

A one-degree global change is significant because it takes a vast amount of heat to warm all the oceans, the atmosphere, and the land masses by that much. In the past, a one- to two-degree drop was all it took to plunge the Earth into the Little Ice Age.⁵

While the earth's climate has also been greatly affected by natural factors, the impact of human activity on the environment cannot be ignored. It is fifth assessment report, the IPCC marked the period of 1850-1900 as the baseline for climate change analysis, in the same report the estimation was made of the likelihood of increase in the temperature to exceed 1.5 to 2 °C from the baseline. The choice of selecting the baseline was made keeping in mind that the occurrence of past events such as volcanic eruptions that had disturbed the global temperature from its usual course. It was felt that this could potentially cause anomaly in future calculations which would result in misleading results of the global temperature and the targets set to control the growth in

Figure 1: Pre-Industrial Baseline (Source: IPCC)



³ Earth Observatory, NASA available at <https://earthobservatory.nasa.gov/world-of-change/global-temperatures>.

⁴ *Id.*

⁵ *Id.*

temperature.

Researchers at NASA have also found evidence to conclude that two-third of the warming has occurred since 1975.⁶

In view of the increase in global temperature, the Paris Agreement specifically mentions in its objective to “restrict the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C”

⁶ *Id.*

INTERNATIONAL DEVELOPMENTS IN CLIMATE POLICY

For this study, the development of climate policy has been divided into two phases- Phase I which covers the early development from 1972 to the Ozone Protection and the Earth Summit and Phase II which looks at products of the Earth Summit and through it a more organized and regular environment activism with mechanisms such as and United Nations Framework Convention on Climate Change and its bodies.

Phase I (1972-1992)

Conversations around climate change started off in early 20th century. In 1938, British engineer Guy Callendar for the first time presented evidence that the planet's temperature is rising due to measured rise in CO₂. This led to further studies which ultimately required a call for action. In this report, the international climate change policy, and associated developments under it shall be reviewed along with key goals set by member countries under each convention/ meeting.

United Nations Conference on Human Environment (1972)

The United Nations Conference on Human Environment is considered to be the first conference in the history of the world which placed environment as a central concern. A legally binding declaration known as the Stockholm Declaration as well as the Action Plan for Human Environment came out of this Conference in 1972. The Stockholm Declaration highlighted the need for developing countries to prioritize environment safeguards while making developmental advances and developed countries to make efforts to reduce environment damage caused by technological and industrial development. It was attended by representatives of 122 countries including USA, Canada, Australia and India. The Stockholm Declaration had 152 signatories and 185 parties.

The Declaration established 26 principles broadly covering aspects of human impact on environment and called for reduction of Persistent Organic Pollutants (POPs) while also making 109 specific recommendations for human settlements and protection of natural resources under the 'Framework for Environment Action.'

The 26 principles addressed issues relating to the environment such as:

- protection of the environment,
- management of natural resources,
- management of renewable resources,
- conservation of wildlife,
- pollution control,
- prevention of pollution of sea
- economic and social development, etc.

The Action Plan for Human Environment included three categories which included-

a) Global Environmental Assessment,

b) Environmental Management Activities and

c) International Measures to support assessment and management activities carried out at national and international levels.

On the completion of fifty years since the Conference, the Stockholm+50 event took place in June, 2022 in Sweden. The Stockholm+50 event was marked by leadership dialogues on environment development and youth-led webinars. The event marking a milestone concluded with a call for urgent action on environment concerns as well as the need for economic transformation. The Stockholm+50 recognized that there need to be adapted certain principles such as intergenerational responsibility, interconnectivity and implementing opportunity.

Protection of Ozone Layer: Vienna Convention (1985) and Montreal Protocol (1987)

In the 1970s researchers found evidence to suggest the thinning of the ozone layer. On further study, evidence revealed that this was due to the presence of chlorofluorocarbons (CFCs) and other halogen-source gases in the stratosphere mainly traced back to certain industrial and consumer applications related to refrigeration and air conditioning. The Vienna Convention for the Protection of the Ozone Layer was thus created as a framework convention on the principles agreed upon by the parties.⁷ This was the first convention to be signed by every country taking effect in the year 1988 and reached universal ratification in 2009. The Vienna Convention laid down the general principles, on the countries to cooperate in systematic knowledge sharing through research, observation, and information to better understand the depletion of the ozone layer.

Since the Vienna Convention was not legally binding as a protocol to the Convention, the Montreal Protocol was adopted in September 1987 which set out binding commitments for the parties. The Montreal Protocol under Article 12 along with the Vienna Convention under Article 7 set out bodies for the purpose of regulation and monitoring of the convention and obligations- Secretariat, Multilateral Fund, Scientific Assessment Panel and the Environment Affects Assessment Panel and the Ozon Action Programme (UNEP). It provided protection to Article 5 parties whose annual calculated level of consumption of the controlled substances in Annex A is less than 0.3 kilograms per capita and provided for specific control measures under Article 2 providing for transfer of production and consumption of CFCs.

It also provided different timetables for developed and developing nations for their phase out activities. While the Montreal Protocol was legally binding in nature, it provided the Article 5 parties some relaxation and allowed for delay of 10 years to lay out their phase out plans for developing countries such as India.

⁷ The Vienna Convention on the Protection of the Ozone Layer, Ozone Secretariat, Treaties, UNEP.

The countries took on the commitment to phase out the consumption and production of the hydrofluorocarbons (HFCs) under the Kigali Amendment, 2016. Although the HFCs are not considered to directly contribute to the depletion of the ozone layer, it is believed that their gradual increase especially in developing countries can negate the impact on climate change that phasing out of ODS has led to.

The purview of the Montreal Protocol was expanded to include hydrochlorofluorocarbons or HCFCs which are common chemical compounds used in foam, refrigeration and air conditioning sectors that were said to contribute to the depletion of the protective ozone layer and thus contributing to climate change.⁸ HFCs have now been included as a third generation of compounds under the Montreal Protocol, after chlorofluorocarbons (CFCs) and hydrochlorofluorocarbons (HCFCs). The ambitious phase down schedule will avoid more than 80 billion metric tons of carbon dioxide equivalent emissions by 2050—avoiding up to 0.5° Celsius warming by the end of the century, while continuing to protect the ozone layer. Under the amendment, developed countries will reduce HFC consumption beginning in 2019.⁹ The expanded norms have been adopted by 197 countries.

United Nations Conference on Environment and Development (UNCED) - 1992

Also known as the Earth Summit, the UNCED was the largest meeting of the world leaders with 117 heads of the state and representatives of 178 nations attending. Since the first environment conference in Stockholm, the level of environmental issues had multiplied as well as the awareness about climate change had increased manifold. This led to the second environment conference at Rio being focused on an approach to systematizing and restating existing normative expectations regarding the environment, as well as advancing the legal and political underpinnings of sustainable development.¹⁰

The Earth Summit led to key documents such as:

1. Rio Declaration-

A broad statement for principles on national conduct on environment protection and development, it essentially reaffirmed the Stockholm principles on development and environment and prevention of environmental harm (Principle 2). As part of the Rio Declaration, new ideas were introduced which increased the domain of liability as was previously recognized. Principles such as the precautionary principle (Principle 15) that increased liability based on the suspicion that any activity being

⁸ HCFC Phase out, United Nations Industrial Development Organization available at <https://www.unido.org/our-focus-safeguarding-environment-implementation-multilateral-environmental-agreements-montreal-protocol/hcfc-phase-out> (last accessed on July 25, 2022)

⁹ Recent International developments under the Montreal Protocol, United States EPA, available at <https://www.epa.gov/ozone-layer-protection/recent-international-developments-under-montreal-protocol> (last accessed on July 25, 2022).

¹⁰ Gunther Handl, *Introductory Note on the Rio Declaration on Environment and Development*, Audiovisual Library of International Law available at <https://legal.un.org/avl/ha/dunche/dunche.html> (last accessed on June 3, 2022)

conducted could have adverse effects on the environment brought strict liability principles in international climate policy and the 'common but differentiated responsibilities'¹¹ (Principle 7) which is now considered a cornerstone of sustainable development. The principles highlighted that while climate mitigation is a common goal for all countries across the world, the developed nations bear the burden of greater responsibility owing to the harm they caused to the environment during their developed process. It also emphasized on the role of indigenous people and highlighted their participation in environmental conservation.

In 2012, the parties met at Rio+20 United Nations Conference on Sustainable Development to assess progress. The parties formed a focus political outcome document that contained practical measures for implementing sustainable development. For developing countries, challenges to sustainable development were recognized in key areas of poverty eradication, energy, food security and cities.

2. The United Nations Framework Convention on Climate Change (enforced in 1994)¹².

While the formal discussion for an international convention for climate change began in 1988 with the formation of the Intergovernmental Panel on Climate Change (IPCC). However due to some disagreements between the countries, it was the Intergovernmental Negotiating Committee (INC)¹³ that took over the discussions after 1990. The United Nations Framework Convention on Climate Change (UNFCCC) was formed as the result of these negotiations. India signed the Convention in 1992 and ratified it in November 1993.

The main objective of the UNFCC was "to achieve [...] the stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system" as specified under article 2. The convention placed general obligations on all parties and specific obligations on the developed countries in Annex I and II. India has been placed under the Non-Annex I party.

The Conference of Parties (COP) was established as the apex decision making body under the Framework Convention. The COP takes regular decisions for promotion and implementation of the convention and meets annually for the same.

Four additional bodies were established namely, a Secretariat (article 8), which is now permanently located in Bonn, Germany; two subsidiary bodies, one for scientific and technological advice (article 9) and the other for implementation (article 10); and the Global Environment Facility was

¹¹ The 'common but differential responsibilities' principle elucidates that while all countries are responsible towards addressing climate change and environment degradation at global level, they do share equal responsibility. It is based on the fact that some industrialized nations have caused more harm to the environment and should now be held liable for the restoration of the environment and future mitigation aid.

¹² While the discussion for the UNFCCC found its root during the Earth Summit in 1992, it was enforced in 1994 and forms the basis for the Phase II of the development timeline as provided in this report.

established as a financial mechanism to provide financial resources on grant and concessional basis including transfer of technology. (Article 11).

Since its formation, the UNFCCC has been steering all climate policy and negotiations in contemporary times and is considered to be a backbone of international climate change development.

3. Convention on Biodiversity

The issues of biodiversity were merged to be handled by a single intergovernmental negotiating committee and devised to work on sustainable use of biological diversity.

4. Forest Principles

Statement of 17 non-binding principles for the conservation of all types of forests. The main aim of these objectives is to contribute to the management of the forests, their conservation and sustainable development. The principles also recognized the economic importance of forests and formed global consensus on their protection.

5. Agenda 21

A non-legally binding work plan signed at the UNCED for the agenda of environment and development. Agenda 21 recognized the role of non-governmental organizations and their role particularly in the participatory democracy which forms a grassroot level for environment action especially in a country like India.

Phase II (1993-2021)

As the understanding of the climate change crises grew in the 1980s it became central to many international public debates and discussions. With the Earth Summit in 1992, a more organized set up was required to deal with the issues faced due to Climate Change. The Conference of Parties was accordingly set-up as an apex body which allows parties under the UNFCCC to meet annually to carry out negotiations and discussions with respect to mitigation and adaptation to climate change. Therefore, the second phase of the international climate policy is primarily guided by decisions taken by the Conference of Parties (COP) as mentioned under the UNFCCC and its Institutional Mechanism under Phase I.

The COP is the governing body of the Convention and advances implementation of the Convention through the decisions it takes at its periodic meetings. Till date 26 COP since 1995 have taken place which have led to several instruments of climate policy.

Few of the important COP meetings which laid the future path of actions and initiatives taken by all member countries towards climate change are covered below:

Conference of Parties 3: Kyoto Protocol (1997)

The Conference of Parties in its third session led to the adoption of the Kyoto Protocol which aimed to operationalize the Framework Convention on Climate Change on the 11 December 1997. It called for the reduction of greenhouse gas emissions in Annex I countries and placed legally binding target of reducing greenhouse gas emissions by at least 5 per cent below the 1990 level between 2008 to 2012.

The Kyoto Protocol set up under its regulatory and monitoring mechanisms such as an inventory of anthropogenic emissions by sources and removals by sink of greenhouse gas (GHGs) for countries under Annex B which was set up to be given to expert bodies under COP as provided for under Article 7 and 8. Adaptation Fund was set up with the aim to finance concrete projects and programmes that help vulnerable communities in developing nations that are Parties to Kyoto Protocol.

The Doha Amendment to the Kyoto Protocol was adopted on 8 December 2012 in accordance with the Article 20 and 21 of the Protocol at the COP18.¹³ The main objective of the Doha Amendment was to renew the commitments made by the Annex B countries for a second commitment period.

The second phase of the Kyoto has been agreed to by 37 countries that aim to reduce their emissions by 18 per cent compared to the 1990 levels.¹⁴ A new UN Climate Change assessment shows that the targets seem fully achievable and are likely to be exceeded.¹⁵ The most recent data based on the information received from the parties shows that total aggregate GHG emissions in 2018 were 25.3 per cent lower than in 1990.¹⁶

The Kyoto Protocol also created what came to be known as 'flexibility mechanisms' such as the Clean Development Mechanism (Article 12) as an offset mechanism, Joint Implementation (Article 6) and International Emissions Trading (Article 17) and thus established a carbon market and a new commodity for trading. The key aspects of the flexibility mechanism included in the Kyoto Protocol is represented below:

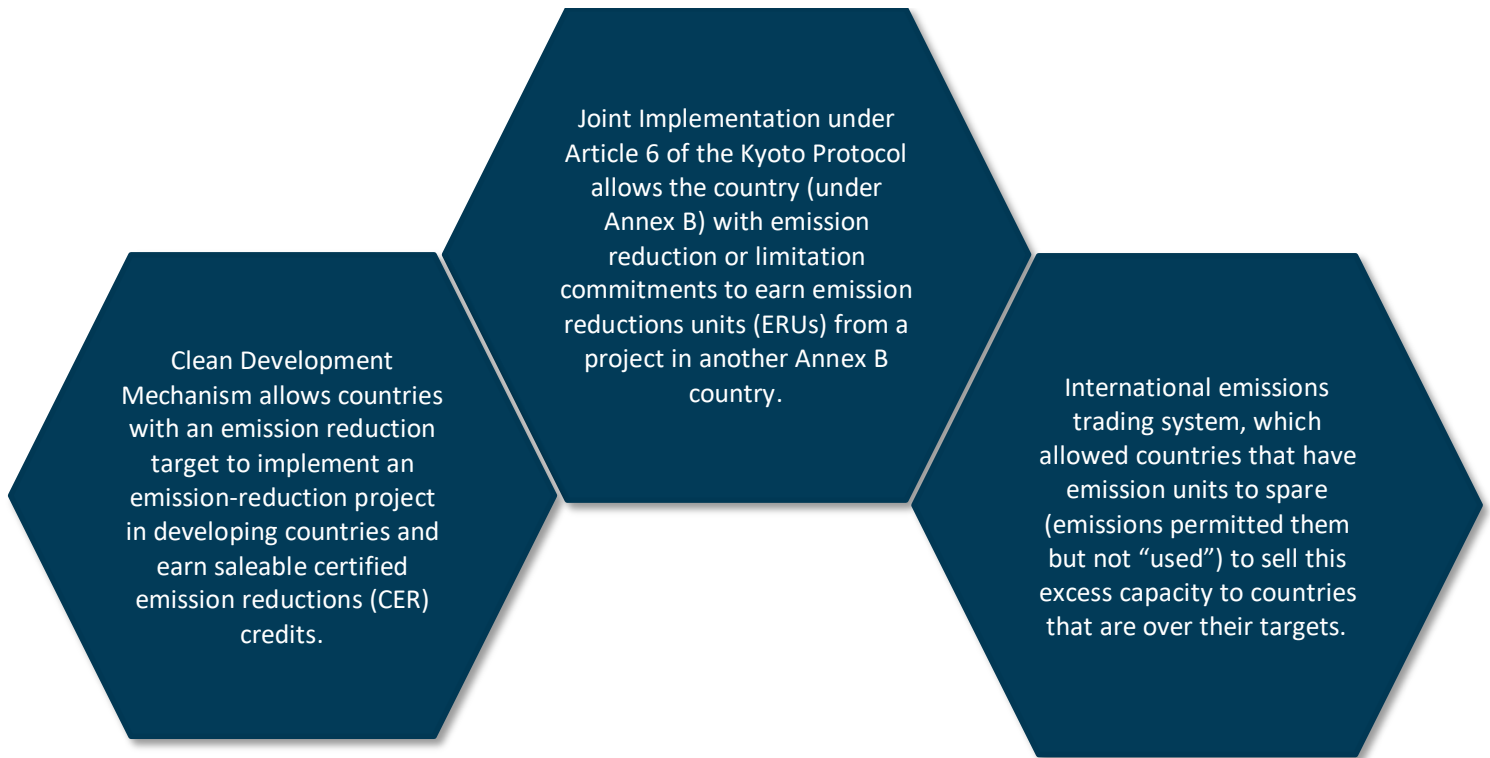
¹³. The Doha Amendment 2012, UNFCCC

¹⁴ Kyoto's Second Phase emission reduction achievable but greater ambition needed, UNFCCC, June 17, 2020.

¹⁵ *Id.*

¹⁶ *Id.*

Flexibility Mechanisms under Kyoto Protocol



Conference of Parties 13: Bali Action Plan (2007)

The UNFCCC Conference at Bali in December 2007 (COP13) led to the adoption of the Bali Action Plan which focused on disaster risk reduction and specified the need for climate resilient response and strategic development especially for the least developed countries and the Small Island countries. It also talked about the need for risk management strategies and transfer mechanisms such as insurance. The conference aimed to provide a roadmap to post-2012 climate change developments which marked the end of the first commitment period of the Kyoto.

India supported the Bali Action Plan and through it the access for climate justice for the least developed countries. At the subsequent conference at Bonn in 2008, India presented that it would not accept any pact that ‘erodes’ the Bali Action Plan and the difference between rich and developing nations set forth in it.¹⁷ It was felt that the developed countries were trying to dilute the Kyoto Protocol and make developing nations equally responsible in the mitigation steps however India strongly opposed the motion.

¹⁷ PTI, India not to accept any pact that erodes the Bali Action Plan, The Hindu, May 16, 2010.

Conference of Parties 19: Warsaw Outcomes

The adoption of the Intended Nationally Determined Contributions (INDCs) was formalized at the COP 19 in 2013 (Warsaw) where all countries were required to prepare their INDCs. The Warsaw climate conference was also seen as an important pathway to the formation on a new global climate agreement that is, the Paris Agreement of 2015.

At the conference, an international mechanism to provide the most vulnerable populations was established which led to the 'Warsaw international mechanism for loss and damages.'¹⁸ It also led to the 'The Warsaw Framework for REDD+' which was backed by pledges of 280 million dollars financing from the US, Norway and the UK.

Another major milestone reached at this conference was the finalization of a comprehensive plan by the poorest nations to deal with the inevitable impact of climate change.

Transforming our world: the 2030 Agenda on for Sustainable Development Goals SDGs (2015)

Apart from the COP meetings that led to major milestones, at the 70th session of the United Nations General Assembly, the 17 Sustainable Development Goals were agreed upon which are the baseline for all countries to mark their progress towards sustainable development. The agenda behind these goals was to establish the correlation between people, prosperity, planet while focusing on peace and encouraging partnership. The key goals focused on climate change recognized under the SDG Goals were:

- Goal 7 (Affordable and Clean Energy)
- Goal 11(Sustainable Cities and Communities)
- Goal 13(Climate Action)- urges countries to take action to combat climate change and its impacts

India has also committed for participating in the international review of the progress of SDGs on a regular basis and has been part of the annual review meetings since 2016. Further, India's commitment to the SDGs is reflected in its convergence with the national development agenda, as reflected in the motto of *Sabka Saath Sabka Vikaas* (Collective Efforts for Inclusive Growth).¹⁹

Conference of Parties 21: Paris Agreement (2015)

The Conference of Parties Twenty First Session was convened with the agenda of reviewing progress on various fronts including the reports by the Warsaw International Mechanism for Loss and Damage associated with climate change impacts, annual reports on the transfer of technology and implementation as well as the capacity building, gender and climate change, climate finance and the Durban Platform for Enhanced Action. It was during this conference that the Paris Agreement was formed in December 2015.

¹⁸ Closing Press Release, UN Climate Change Conference, Warsaw, 2013.

¹⁹ High Level Political Forum 2020, United Nations HLPF, Niti Ayog available at <https://www.niti.gov.in/un-high-level-political-forum> (last accessed on June 6, 2022)

The Paris Agreement aims to combat climate change through multilateral processes and limit global warming to well below 2 degrees Celsius, preferably 1.5 degree Celsius, compared to pre-industrial level. Some provisions of the agreement are legally binding while others are merely procedural.

The agreement provided for An Enhanced Transparency framework' (Article 13) for action and support through which by the year 2024 countries would start reporting transparently on actions taken and progress in mitigation of climate change, adaptation measures and support provided or/and received was set up under the agreement. Furthermore, a capacity building mechanism under the Agreement which talked of developing countries(especially those most vulnerable to climate change such as small island developing states) needs to take effective climate change action, including, inter alia, to implement adaptation and mitigation actions, and highlighted the need to facilitate technology development, dissemination and deployment, access to climate finance, relevant aspects of education, training and public awareness, and the transparent, timely and accurate communication of information. (Article 11)

The Intentional National Determined Contributions as mooted in COP 19 were formalized under the Agreement and emerged as the Nationally Determined Contributions (NDCs) which are a requirement under the Agreement for each party. To outline and communicate their post 2020 climate actions. These are to be submitted every five years to the UNFCCC Secretariat. (Article 4(2)).

The Katowice Conference under the COP24 fleshed out a framework for the detailed set of modalities, procedure, and guidelines (MPGs) for the countries to make the NDCs operational. This decision requested the Global Environment Facility to extend to support to developing countries to prepare their first and second biennial transparency report.

Conference of Parties 26: Glasgow Climate Pact (2021)

COP26 witnessed representation of 200 countries which conducted negotiations and call for actions for the 2020 decade. The global agreement led to the Glasgow Climate Pact that will lead to accelerated action and finally complete the Paris rulebook.

The pact focused on mitigation, adaptation, finance and technology and transfer thereof. It also gave special focus to collaboration by way of investment, business, finance, and technology. As part of the meeting, it was noted that the current provision of climate finance for adaptation remains insufficient to respond to worsening climate change impacts in developing countries. It also noted that the goal of developed country parties to mobilize jointly USD 100 billion Goal has not been met.

The COP also agreed on the phasing down of the unabated coal power by the parties for the first time. However, India argued for phasing down instead of a complete phasing out of coal power. The coal phase down will mean that a developing country like India will have time to meet its energy demands with its own coal sources without putting a timeline to end usage. This is important because India is still largely dependent on coal for its energy requirement.

It also further called for collaboration between organizations, indigenous people, community and appreciated the work of non-state actor zone for Climate Action platform to support accountability

and track progress of voluntary initiatives.²⁰ However, no legally binding commitment came out of the COP26.

The COP-26 also highlighted the UNEP's estimates that even with the current NDCs of the parties, the global temperature rise would not be on track as promised under the Paris Agreement and the world could see a temperature rise of 3°C.²¹ In October 2021, the IEA calculated that revised NDCs, and growing net-zero targets could bring the trajectory down to 2.1°C.²² And the IEA's most recent assessment in early November, which considered further pledges up to and including the first week of COP, suggested that if all such pledges were implemented in full and on time, the temperature rise would be held to 1.8°C by the end of the century.²³

The countries made pledges to halt deforestation (130 countries by 2030), global methane pledge (100+ countries by 2030), phase out carbon-beyond the pact (23 countries) and committed to stop public financing for fossil fuel projects by the end of 2022 (twenty-five countries along the five financial institutional).²⁴ At the COP26, the countries also discussed renewed climate commitments with many developed countries forwarding their net-zero pledges and timelines.

The negotiations at Glasgow also led to the revision of Article 6 and the Paris rulebook governing carbon markets which was long overdue. The negotiations on this aspect began in 2018 and continued over the next meetings. Article 6 allows the countries to voluntarily cooperate under the CDM to achieve emission reduction targets set out in their NDCs.²⁵ However, to tackle the problem of double counting the rulebook now establishes an accounting mechanism known as "corresponding adjustment".²⁶ A new Sustainable Development Mechanism will replace the Clean Development Mechanism set up under Kyoto Protocol.

Under which corresponding adjustment requirements may extend beyond compliance markets to the voluntary carbon markets, where demand is driven by the private sector's voluntary commitments to reduce emissions.²⁷

Net Zero means cutting emissions to as close to zero as possible, such as by moving to a green economy and clean, renewable energy. Any remaining emissions must be reabsorbed, including by healthy oceans and forests. It refers to the balance between the amount of greenhouse gas produced and the amount removed from the atmosphere. *

²⁰ Glasgow Climate Pact p. VIII. p.89.

²¹ Emission Gap Report 2020, UNEP, UNEP-CC December 09, 2020.

²² Dr. Fatih Bairol, *COP26 climate pledges could help limit global warming to 1.8 °C, but implementing them will be the key*, IEA, Paris, November 04, 2021

²³ *Id.*

²⁴ Lindsay Maizland, *COP26: Here's what the countries pledged*, Brief, Council of Foreign Relations.

²⁵ What you need to know about Article 6 of the Paris Agreement, The World Bank, May 17, 2022.

²⁶ *Id.*

²⁷ *Id.*

*Net Zero Coalition, Climate Change, UN Organization

Conference of Parties 27: Egypt (2022)

Following the COP26, the 27th session of the Conference of the Parties was held in Sharm El-Sheikh, Egypt from 6 to 18th November, 2022. The conference included high-level meetings and side events including Climate Innovation Zone and saw large scale participation from Heads of State and Governments as well as representation from industry leaders in climate action and different sectors across the world.

The thematic areas within the conference included negotiations and discussions on the common metrics to calculate the carbon dioxide equivalence of anthropogenic greenhouse gas emissions by source and removals by sinks, matters relating to actions for climate empowerment, report of the Green Climate Fund and guidance as well as report of the Executive Committee of the Warsaw International Mechanism for Loss and Damage associated with Climate Change Impacts.²⁸

One of the most important decisions to come out of the COP27 has been the agreement between nations to establish a fund for climate harms, to help vulnerable countries with disasters to recognize the loss and damage caused. The Egyptian Presidency also launched an Adaptation agenda in partnership with the UN Climate Change High-Level Champions and the Marrakech Partnership. Under this agenda a workplan for the global community has been specified which focuses on building resilience of more than 4 billion people against climate-related risks by 2030.²⁹ While proposing an Implementation Plan the presidency also made note of the importance of transitioning to a sustainable lifestyle and sustainable patterns of consumption and production. It made a call for enhancing ambition and implementation, emphasised the urgency in the energy sector for sustained reductions in the GHG emissions while recognizing the unprecedented global energy crisis which furthers the need to transform energy systems.

The plan also explored new avenues and pathways to implement a just transition and pushed for social dialogue and participation of all stakeholders. It noted with concern the growing gravity and frequency of loss and damages associated with the adverse effects of climate changes, resulting in devastating economic and non-economic losses including forced displacement and impacts on cultural heritage and welcomed for the first time, matters relating to funding arrangements responding to loss and damages.³⁰ It also noted that the climate finance flows have been relatively small in comparison to the overall needs of the developing countries.

The Global Methane Pledge which was launched at the COP26 in attempt to catalyse actions to reduce methane emissions was also focused on at the COP27 with US and EU as joint leaders of the pledge. It was announced by 150 nations that they are now committed to reducing methane emissions by at least 30 per cent by 2030. However, China, India and Russia were notably absent from the pledge.

²⁸ Decisions taken at the Sharm El-Sheikh Climate Change Conference-Advance unedited versions; UNFCCC available at <https://unfccc.int/cop27/auv> (last accessed on November 28, 2022).

²⁹ Draft Decision, Sharm el-Sheikh Implementation Plan, Proposal by the President, UNFCCC, November 20, 2022.

³⁰ Id.

TRACKING INDIA'S INTERNATIONAL COMMITMENTS AND ACHIEVEMENTS

International focus and efforts to mitigate Climate Change created what is understood as a global consciousness and momentum towards such ideas of growth. For most countries, developed as well as developing, it was the onset of the climate policy at the international level which pushed them to create national policies to go hand in hand which also enabled them to fulfill their commitments and obligations.

India has been committed to climate action from the start of these negotiations and has been proactive in its own endeavors at a domestic level as well. In fact, India was among some of the few countries to have environment related legislations as early as the 1970s.³¹ At an international level, the country displayed commitment towards the issue of climate change by participating at the various conferences and summits. It has also actively ratified the conventions and treaties and made efforts to fulfill its commitments thereunder.

Table 1: Status of India's ratification and participation

S.No.	Agreement/Convention	Ratification Status	Date/ Year	Legality for India
1.	Stockholm Declaration, 1972	Ratified	January 2006	Opt-out option available u/Art 25(4)
2.	Vienna Convention, 1985	Ratified	March 1991	Not binding
3.	Montreal Protocol 1987	Ratified	June 1992	Given grace period u/Art 5, binding
4.	Kigali Amendment 2016	Ratified	September 2021	Binding
5.	UNFCCC 1994	Ratified	November 1993	Not Binding
6.	Kyoto Protocol 1997	Ratified	August 2002	Exempt as non-Annex party.
7.	Doha Amendment	Ratified	August 2017	Not-binding
8.	Paris Agreement	Ratified	October 2016	Binding
9.	Glasgow Climate pact	Participated	NA	Not Binding

³¹ Wildlife Protection Act, 1972; Water (Prevention and Control of Pollution) Act, 1974.

Even as a growing economy and developing country, India has been an active participant in adhering and implementing to the various actionable steps to be taken as resulting from the Climate conventions and meetings. In the years since 1972, India has made commitments under different conventions and formulated policy measures to achieve these commitments.

1972- Phase Out Plans under Stockholm Declaration

India ratified the Stockholm Convention on the January 13, 2006, under Article 25(4). Subsequently, the Cabinet approved the ratification of seven chemicals recognized under the Convention in October 2020 which include (i) Chlordane, (ii) Hexabromobiphenyl, (iii) Hexabromodiphenyl ether and Heptabromodiphenylether (Commercial octa-BDE), (iv) Tetrabromodiphenyl ether and Pentabromodiphenyl ether (Commercial penta-BDE), (v) Pentachlorobenzene, (vi) Hexabromocyclododecane, and (vii) Hexachlorobutadiene.

Marking 50 years of the Convention the Stockholm+50 in June 2022 was held, India has been recognized as a key to the success of the Declaration by the UNEP owing to its share in population³² and natural resources.

This ratification will enable India to use financial resources under the Global Environment Facility³³ to review and update its National Implementation Plan. The previous National Implementation Plan submitted by India under the Convention was to phase out the POPs and spread over 12 years (2011-2022). India is now required to update its National Implementation Plan for the next period.

1987- National Commitments under Montreal Protocol

India ratified the Vienna Convention on March 18, 1991, and the Montreal Protocol to it in June 1992 which displayed the commitment showed by the country to the protection of the Ozone Layer.

India being a developing country, it had the levy of delayed compliance (10 years) to control measures set out in Articles 2A to 2E and subsequent amendment in London as per the provision of Article 5 of the Protocol.

As per a report published by the Government of India in 2021 on the observation of the 27th Global Ozone Day, India has successfully phased-out production and consumption of several major Ozone Depleting Substances (ODS) and met all the obligations of the Montreal Protocol so far, by accessing technical and financial assistance from the financial mechanism³⁴ of the Montreal Protocol.³⁵

³² India is second to China in being the most populated country in the world. The population of India is just under 1.4 billion as of August 2021.

³³ The Global Environment Facility is a financial mechanism, the role of the facility is to provide grant funds to developing countries for projects covering four focal areas: climate change, biodiversity, international waters, and the ozone depletion.

³⁴ India pushed for the amendment to the Protocol for the setting up for financial support mechanism for developing countries. This move proved to be a good measure for the success of the Protocol in other southern countries as well.

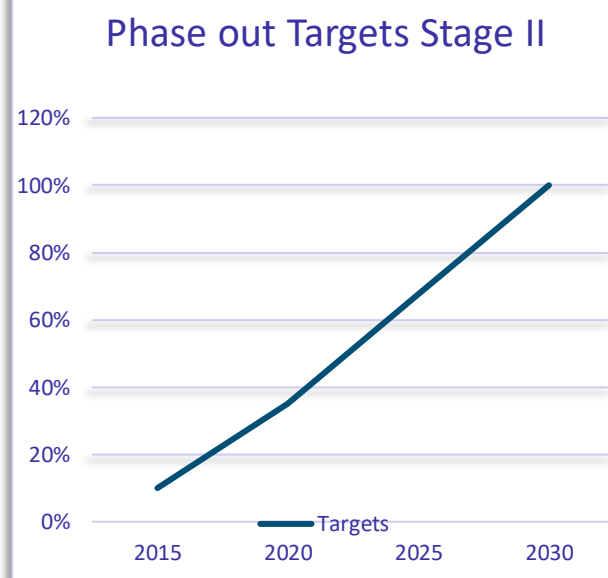
³⁵ PIB Delhi, 16 September 2021 available at <https://pib.gov.in/PressReleasePage.aspx?PRID=1755402> (last accessed on June 3, 2022)

The subsequent Kigali Amendment (2016) included phasing out of hydrofluorocarbons-greenhouse gas emissions used in refrigeration and air-conditioning as part of the next phase. Although these substances do not essentially contribute to the depletion of the ozone layer, India recently ratified the Kigali Amendment in view of the contribution of these gases on the global warming³⁶.

The phase down plan by India under the Kigali Amendment has the following key highlights:

- ◆ The ambitious phase down schedule will avoid more than 80 billion metric tons of carbon dioxide equivalent emissions by 2050—avoiding up to 0.4° Celsius warming by the end of the century—while continuing to protect the ozone layer.³⁷
- ◆ Action Plan for implementing recommendations of the India Cooling Action Plan (ICAP) which is the first of its kind in the world for the thematic Area Space Cooling in Buildings has been mapped out.

Figure 2: Article 5 parties Phase Out II
Targets in Percentage and Years



The India Cooling Action Plan was launched in March 2019 which made India the first country to address the cooling requirement across the sector and list out actions. The plan seeks to³⁸-

- (i) reduce cooling demand across sectors by 20% to 25% by 2037-38,
- (ii) reduce refrigerant demand by 25% to 30% by 2037-38,
- (iii) reduce cooling energy requirements by 25% to 40% by 2037-38,
- (iv) recognize “cooling and related areas” as a thrust area of research under national S&T Programme,
- (v) training and certification of 100,000 servicing sector technicians by 2022-23, synergizing with kill India Mission.³⁹

³⁶ The Kigali Amendment has been signed by 125 countries, initially India showed reluctance in signing the amendment due to the nature of the HFCs which does not contribute to depletion of ozone layer which was the original objective of the Montreal Protocol.

³⁷ World Ozone Day 2021, Ozone Secretariat, UNEP.

³⁸ PIB, India Cooling Action Plan Launched, Ministry of Forest, Environment and Climate Change, March 08, 2019.

³⁹ *Id.*

India has phased out Chlorofluorocarbons, Carbon tetrachloride, Halons, Methyl Bromide and Methyl Chloroform for controlled uses in line with the Montreal Protocol. Currently Hydrochlorofluorocarbons are being phased out as per the accelerated schedule.⁴⁰ The Montreal Protocol has also been instrumental beyond its agenda, as per expert estimates, GHG emissions have been reduced by more than 11 Giga tonnes CO₂ equivalent per year through the ODS phase-out activities.⁴¹

Hydrochlorofluorocarbons Phase out Management Plan (HPMP) Stage-I has been successfully implemented from 2012 to 2016 and Hydrochlorofluorocarbons Phase out Management Plan (HPMP) Stage-II is currently under implementation from 2017 and will be completed by 2023.⁴²

1997- Development under the Kyoto Protocol

The Kyoto Protocol established more firmly the principle of common but differential responsibilities which India has always advocated for. India ratified the Kyoto Protocol in August 2002. India being a developing country was not placed under Annex I countries and thus was not committed to the binding limits placed by the Protocol.

However, India has been benefitted under the flexibility mechanisms set up under it. In fact, India has emerged as one of the top host countries for Clean Development Mechanisms projects under Article 12. Following China, India has the largest number of CDM projects with a total number of 1685 projects as of March, 2022⁴³ and total 253 CERs in million units issued out of 1995 (12.7%) in the world.⁴⁴ These CDM projects have contributed greatly to the energy efficiency and renewable energy sectors in the country.

2009-2010 - Copenhagen Accord and Cancun Agreements

The Copenhagen Accord encouraged developing countries to do their part in emission reductions through voluntary targets. India officially communicated its climate mitigation target to the United Nations Framework Convention on Climate Change secretariat. The country submitted that it will voluntarily cut its emissions intensity by 20 to 25 percent by 2050 from 2005 levels.⁴⁵ According to the government report of July 2021, the emission intensity has reduced 28 per cent and so it can safely be said that the country has successfully met its mitigation target.

Another important development under these COP meetings was the establishment of Green Climate Fund (GCF). Under the GCF, India has a total financing of 523.8 million and a total number of 6 projects in

⁴⁰ PIB Delhi, *supra note at 10*.

⁴¹ PIB, 30th Anniversary of the Vienna Convention and 21st International Day for Preservation of Ozone Layer Celebrated, MoEFCC, GOI, September 16, 2015.

⁴² Id.

⁴³ Sai Krishna Muthyanolla, *Review: What is the status of Clean Development Mechanism (CDM) projects?* Factly, April 29, 2022.

⁴⁴ R.R. Rashni and Ritu Ahuja, *Discussion Paper: Clean Development Mechanism as Catalyst for Sustainable Development Mechanism under Article 6.4*, TERI, 2019.

⁴⁵ Anjali Jaiswal, India Records its Climate Actions by Copenhagen Accord Deadline, February 01, 2010.

the areas of mitigation, cross-cutting and adaptation.⁴⁶

India is a party in the Climate Investor Two Project which is a multi-country project which aims to support private sector to develop and construct climate-resilient infrastructure projects in developing countries in the water, sanitation and ocean sectors-areas which usually do not attract interest from the private sector.⁴⁷ The estimates by World Bank provide that by 2050, the water shortages caused by climate change could reduce the GDP of developing countries in Asia by USD 4.4 trillion.⁴⁸

The country is also the host for E-mobility Financing Program which aims to target the third highest GHG emitting sector in the country namely transportation which is contributing about 13 per cent of India's total CO2 emissions.⁴⁹ The project will provide tailored financing solutions to electric vehicle (EV) owners and operators including in ancillary areas, such as charging infrastructure, that will rapidly bring the long-term cost of EV ownership to a level comparable to conventional vehicles.⁵⁰ Other projects include green growth equity fund, enhancing climate resilience of India's coastal communities and line of credit for solar rooftop segment for commercial, industrial, and residential housing sectors as well as ground water recharge and solar micro irrigation to ensure food security and enhance resilience in vulnerable tribal areas of Odisha.⁵¹

2012 - National Inputs - Rio+20

In 2012, the parties met at Rio+20 United Nations Conference on Sustainable Development to assess progress.⁵² The parties formed a focus political outcome document that contained practical measures for implementing sustainable development.

As part of the Rio+20 India strongly advocated for a green economy while arguing against trade barriers and defining quantitative targets for sustainable development. Some of the key inputs highlighted by India are:

- ◆ Support for South-South Cooperation⁵³
- ◆ Augmentation of Overseas Development Assistance (ODA) as per Monterrey Consensus
- ◆ Creation of a Sustainable Development Fund.

⁴⁶ Country Portfolio, India, Green Climate Fund.

⁴⁷ Climate Investor Two, Green Climate Fund.

⁴⁸ *Id.*

⁴⁹ India's E-Mobility Financing Program, Green Climate Fund.

⁵⁰ *Id.*

⁵¹ Projects, India, Green Climate Fund.

⁵² United Nations Conference on Sustainable Development available at <https://sustainabledevelopment.un.org/rio20> (last accessed on June 6, 2022).

⁵³ The term South-South Cooperation is used to refer to the technical cooperation between the countries in the Global South. It was formed by the United Nations in 1978 and especially refers to collaboration on issues of political, economic, socio-cultural relevance.

2015 - Progress under the Sustainable Development Goals

In September 2015, 193 countries including India committed to the Sustainable Development Goals (SDGs) as detailed in the UN resolution, “Transforming our world: the 2030 Agenda for Sustainable Development”.⁵⁴

India has continuously made strides to achieve the SDG goals. Currently, India is ranked at 120 out of 192 nations on the 17 SDGs list with an overall score of 66 out of 100⁵⁵ in the Global Sustainable Development Report released by United Nations.

Despite 2020-21 being a pandemic year, India performed well on eight of the 15 SDGs measured by the NITI Aayog SDG India Index. These included – goal 3 (good health and well-being), goal 6 (clean water and sanitation), goal 7 (affordable and clean energy), goal 10 (reduced inequalities), goal 11 (sustainable cities and communities), goal 12 (responsible consumption and production), goal 15 (life on land) and goal 16 (peace, justice, and strong institutions).

In July 2020, the High-Level Political Forum on Sustainable Development was held in New York, in which India marked its presence by being among the 47 countries that presented their Voluntary National Reviews (VNR) for the second time.⁵⁶ In its VNR, India mentioned that this has been ‘decade of action’ for the country. The document focused on the approach to go from ‘global to local’ and highlighted the various programmes undertaken by the government for the promotion of the SDGs such as:

- ◆ Samagra Bharat, Saksham Bharat- Social and Financial Inclusion
- ◆ Sampanna Bharat, Samriddha Bharat- Prosperous and Vibrant India
- ◆ Satat Bharat, Sanatan Bharat- Sustainable India
- ◆ Atmanirbhar Bharat- Self-reliant India

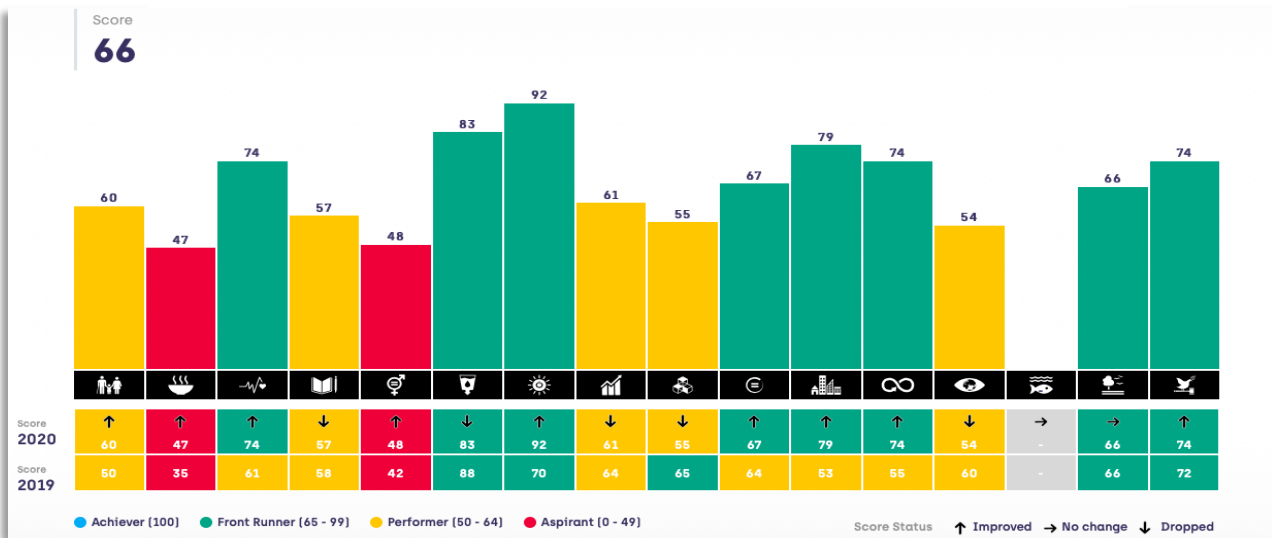
⁵⁴ Sustainable Development and Climate Change, Chapter 06, Economics Survey, India Budget 197 available <https://www.indiabudget.gov.in/economicsurvey/doc/eschapter/echap06.pdf> (last accessed July 14, 2022).

⁵⁵ Press Trust of India, India Slips three spots on 17 SDG adopted as 2030 agenda, Business Standard, March 2, 2022, New Delhi.

*Niti Ayog SDG Tracker Progress.

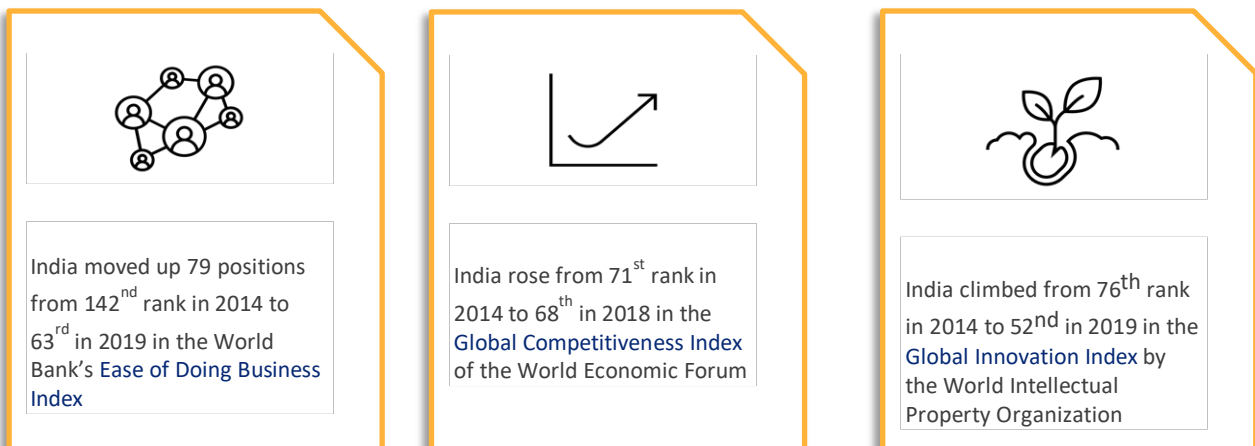
⁵⁶ India presented its VNR for the first time in 2017, two years after the SDGs were put in place.

Figure 3: India's Performance on SDGs (Source: Niti Ayog SDG Index)



India leads other countries with regard to Climate Action (Goal 13) and is ahead of other developed countries such as Sweden (Rank 3), United Kingdom (Rank 11) or Japan (Rank 19) which still face major challenges in meeting this goal.

Figure 4: India's Performance on various Global Indexes



2015 - Paris Agreement and INDCs

India ratified the Paris Agreement on the October 02, 2016, which encouraged countries to reduce their emission intensity from the 2005 level. As required under the Agreement and its enhanced transparency mechanism, the country provided its first Intended Nationally Determined Contribution (INDC) in the year 2015 on the 2nd of October to mark the event of Gandhi Jayanti. In its Intended Nationally Determined Contributions (INDC) made the following commitments-

- ◆ Reduce emissions intensity of its GDP by 33-35 per cent by 2030 from 2005 level – India has been able to achieve 28 per cent reduction in emission intensity over 2005 level as on July 23, 2021)⁵⁷
- ◆ 40 per cent of cumulative electric power installed capacity from non-fossil based/ renewable energy sources – India has been able to achieve 38.5 per cent of cumulative generation capacity from renewable sources as of July 2021. Including the renewable capacity under construction, India shall achieve 48 per cent of cumulative generation capacity from RE sources.⁵⁸
- ◆ A carbon sink expansion target of creating an additional (cumulative) carbon sink of 2.5–3 GtCO₂e through additional forest and tree cover by 2030 – As per report under Green India Mission compiled by the MoEFCC, afforestation is being taken up annually over 2.0 million ha since 2019-20.⁵⁹

Apart from the above measurable aspects, the country has also committed to undertake the following NDCs:

- ◆ To put forward and further propagate a healthy and sustainable way of living based on traditions and values of conservation and moderation.
- ◆ To adopt a climate friendly and a cleaner path than the one followed hitherto by others at corresponding level of economic development.⁶⁰
- ◆ To better adapt to climate change by enhancing investments in development programmes in sectors vulnerable to climate change, particularly agriculture, water resources, Himalayan region, coastal regions, health and disaster management.⁶¹ This formed an important aspect of India's NDCs as compared to other countries. It was unique as it was based on India's unique geographical diversity and focused on agriculture which is considered the basis of the economy of the country.
- ◆ To mobilize domestic and new & additional funds from developed countries to implement the above mitigation and adaptation actions in view of the resource required and the resource gap.⁶²

⁵⁷ PIB Delhi, G20 Energy and Climate Joint Ministerial Meeting, available at <https://pib.gov.in/PressReleaselframePage.aspx?PRID=1738317> (last accessed on June 07, 2022).

⁵⁸ *Id.*

⁵⁹ PIB, Implementation of the Green India Mission, GOI, Dec 16, 2021.

⁶⁰ Report of the sub-committee for the Assessment of the Financial Requirements for Implementation India's Nationally Determined Contributions (NDC), Department of Economic Affairs, Ministry of Finance, GOI, New Delhi, June 2020.

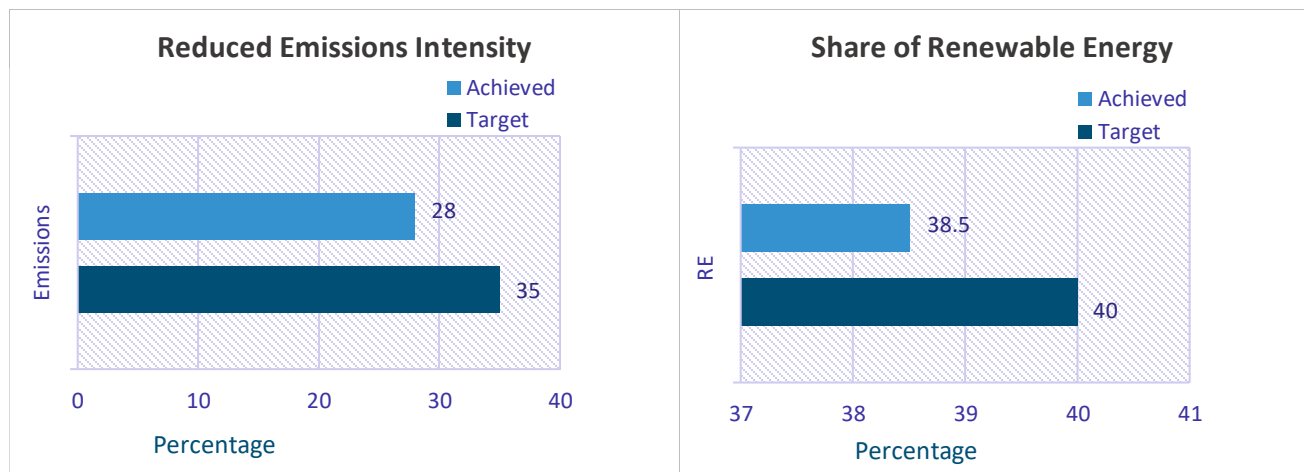
⁶¹ *Id.*

⁶² *Id.*

- ◆ To build capacities, create domestic framework and international architecture for quick diffusion of cutting-edge climate technology in India and for joint collaborative R&D for such future technologies.⁶³

Report released by the government for the G20 Energy and Climate Joint Meeting in July 2021 provided that India has already achieved emission reduction of 28 per cent over 2005 levels and is all set to exceed the target emission reduction of 33-35 per cent by 2030. When it came to renewable energy, India has already achieved an installed capacity of 38.5 per cent and when considering the under construction capacity goes up to 48 per cent which is way above the 40 per cent target under the Paris Agreement⁶⁴.

Figure 5: India's Commitment and Achievement under Paris Agreement



The Cabinet has recently approved the INDC for the second term. As per the updated NDC⁶⁵, India now stands committed to-

- To reduce Emission Intensity of its GDP by 45 percent by 2030 from 2005 level
- Achieve about 50 per cent cumulative electric power installed capacity from non-fossil fuel-based energy resources by 2030.
- To put forward and further propagate a healthy and sustainable way of living based on traditions and values of conservation and moderation, including through a mass movement for 'LIFE'— 'Lifestyle for Environment' as a key to combating climate change".

The updated NDC also represents the framework for India's transition to cleaner energy for the period 2021-2030. The government also specifies that the NDC does not bind it to any sector specific mitigation obligation or action but only to reduce overall emission intensity and improve energy efficiency.

⁶³ *Id.*

⁶⁴ PIB Delhi *supra* note 31

⁶⁵ PIB, Cabinet approves India's Updated Nationally Determined Contribution to be communicated to the UNFCCC, August 03, 2022.

2021-Glasgow Climate Pact

The Glasgow Climate Pact focused on mitigation, adaptation towards climate change finance and technology and transfer thereof, it gave special focus to collaboration. It noted that the current provision of climate finance for adaptation remains insufficient to respond to worsening climate change impacts in developing countries while also noting that the goal of developed member countries to mobilize jointly USD 100 billion Goal has not been met.

India led with the objection on the use of the term ‘phasing out’ and called for ‘phasing down’ of coal.⁶⁶ In this context, it was highlighted that the transfer of climate funds and low-cost climate technologies have become more important for implementation of climate actions by the developing countries.⁶⁷ The ambitions on climate finance (as promised under the GCF) by developed countries cannot remain the same as they were at the time of Paris Agreement in 2015.⁶⁸

On behalf of the developing countries, India voiced the concerns with respect to failure of the developed countries in their promise of providing climate finance and emphasized the role that UNFCCC could play in tracking climate finance in Glasgow.

India has initiated the mantra of LiFE- Lifestyle for Environment Mission a global initiative which invites scholarly focus on adapting practices to become more environment-conscious as a society. The Hon’ble PM also conceptualized an initiative for interconnected solar energy infrastructure at global scale. Taking this vision forward, the government of India along with the United Kingdom, International Solar Alliance with the support of the World Bank, has jointly launch the “Green Grids Initiative- One Sun One World One Grid” at the COP-26. ⁶⁹The aim of this initiative is to foster global cooperation and effective utilization of renewable sources across the globe.

2022- Conference of Parties 27

India’s Union Minister Shri Bhupender Yadav delivered the national statement at COP 27 to strengthen the countries’ national stand on climate action. He reflected that Hon’ble Prime Minister Shri Narendra Modi had at the previous COP meeting announced India’s aim of achieving net zero by 2070⁷⁰ adding that in the last year India has submitted its Long-Term Low Emissions Developments Strategy (LT-LEDS) to UNFCCC joining select list of less than 60 parties⁷¹ to do the same.

As in its Long-Term Low Emission Growth Strategy, India has considered four key considerations that underpin its long-term low carbon development strategy, there are:

⁶⁶ This can be considered to a negotiation by India based on its belief in the CBDR as well as its own energy needs which are highly dependent on coal power.

⁶⁷ PIB Delhi, India’s Stand at the COP-26, 03 February 2022.

⁶⁸ *Id.*

⁶⁹ Green Grids Initiative- One World One Sun One Grid, International Solar Alliance available at <https://isolaralliance.org/work/osowog/> (last accessed on July 21, 2022).

⁷⁰ PIB Delhi, India delivers National Statement at COP 27, 15 November 2022.

⁷¹ PIB, India Submits its Long-Term Low Emissions Development Strategy to UNFCCC, MoEFCC, 14 November, 2022.

1. The country has prefaced that it has contributed little to global warming as its historical contribution to cumulative global GHG emissions have been very little despite having a share of ~17% of the world's population.
2. As a developing country, India has a significant energy needs.
3. Showed its commitment to pursue low-carbon strategies for development as per national circumstances
4. India needs to build climate resilience.

India has dedicated the LT-LEDS towards two central themes of “climate justice” and “sustainable lifestyles” along with principles of Equity and Common but Differentiated Responsibilities and Respective Capabilities (CBDR-RC). The focus and some salient features on the strategy⁷² are-

1. Rational utilization of natural resources with due regard to energy security. Through the National Hydrogen Mission which was launched in 2021 the government intends to transition from fossil fuels which will be undertaken in a just, smooth, sustainable and all-inclusive manner. The Mission will be marked by milestones which include expansion of green hydrogen production, increasing electrolyser manufacturing capacity in the country, and three-fold increase in nuclear capacity by 2032 along with development of the power sector.
2. Increasing the use of biofuels for the low carbon development of the transport sector especially by blending ethanol in petrol and pushing for increase electric vehicle penetration. The country shall aspire to maximise the use of electric vehicles, ethanol blending to reach 20% by 2025 and a strong modal shift to public transport for passenger and freight.
3. Driving urbanisation trends to focus on continuing low base, future sustainable and climate resilient urban development through smart city initiatives , integrated planning cities for mainstreaming adaptation and enhancing energy and resource efficiency effective green building codes and rapid developments in innovative solid and liquid waste management.
4. Strong growth path of the industrial sector with ‘Aatmanirbhar Bharat’ and ‘Make in India’ without compromising on the energy security, energy access and employment. Increasing energy efficiency through schemes such as the Perform, Achieve and Trade (PAT), National Hydrogen Mission, high level of electrification in all relevant processes and activities, enhancing material efficiency and recycling leading to expansion of circular economy, and exploring options for hard-to-abate sectors, such as steel, cement, aluminium and others.
5. India is on track to fulfilling its commitment under its NDC of 2.5 to 3 billion tonnes of additional carbon sequestration in forest and tree cover by 2030. The country has shown a strong record of enhancing forest cover in the last three decades along with high economic growth. The forest fire incidence is well below global levels and the net sink absorbing stood at 15% of CO2 emissions in the year 2016.
6. Provision of climate finance by developed countries is essential for India to transition to low carbon development pathways for several costs pertaining to new technologies,

⁷² Id.

infrastructure and other transactions costs. India counts on the promise of climate finance in the form of grants, concessional loans in accordance with the principles of UNFCCC.

The Union Minister in his address also highlighted India's position in the International Solar Alliance and Coalition of Disaster Resilience Infrastructure fostering strong international cooperation. In reference to the Global Methane Pledge and India's notable absence from the same, the country leadership believes that the Pledge is outside the ambit of the UNFCCC and its Paris Agreement both of which India has shown great commitment towards. India maintains that while it is taking many measures to reduce methane emissions at the country level through 'The Gobar (Galvanizing Organic Bio-Agro Resources Dhan' scheme and New National Biogas and Organic Manure Programme as well as National Livestock Mission (by Department of Animal Husbandry and Dairying) the contribution of Indian livestock to global pool of enteric methane is very low.⁷³

The country also specified that the two predominant sources of methane emissions in India are enteric fermentation and paddy cultivation and in the context of food security, the methane emissions are 'survival' emissions and not luxury emissions. In exercise of its right of sovereign, national determination of its climate actions, and as per the assessments by the Ministry of Agriculture and Farmers' Welfare, the Ministry of Petroleum and Natural Gas, and the Ministry of Environment, Forest and Climate Change, the Government decided not to sign the "Global Methane Pledge".⁷⁴

⁷³ Questions, Unstarred Question, Emission of Methane, MoEFCC, December 13, 2021 available at <https://loksabhaph.nic.in/Questions/QResult15.aspx?qref=30895&lsno=17> (last accessed on November 29, 2022)

⁷⁴ Id.

INDIA'S NATIONAL CLIMATE POLICY FRAMEWORK

Constitutional Amendment and National Legislations

The development of any environment legislation in India started in the 1970s with the Water (Prevention and Control of Pollution) Act in 1974 and has then become a very thorough set of legislations. The United Nations Conference on Human Environment in 1972 further created the universality of need to take appropriate steps for environment protection which led to further legislations such as the Air (Prevention and Control of Pollution) 1981. In view of the importance provisions related to climate and environment, the Government of India further amended the Constitution and inserted two provisions which made the protection and conservation of the environment the duty of both the state as well as the citizens. The 42nd Amendment, 1976 inserted the following:

Article 48A – *“protect and improve the environment, and to safeguard the forests and wildlife of the country.”*

Article 51A(g)- *“protect and improve the natural environment including the forests, lakes, rivers, and wildlife and to have compassion for living creatures.”*

In 1984 the country was shaken by the Bhopal Gas Tragedy, which pushed for adoption of stricter liability principles. The Environment Protection Act (EPA), 1986 is often considered to be a response to these. It is referred to as an ‘umbrella’ legislation as it established a basic framework for development projects from their planning phase itself. It is also considered to fill in the gaps between other environment legislations and helps in connecting them with one another. The EPA 1986 also brought to the country the Environment Impact Assessment which is defined as *“the process of identifying, predicting, evaluating and mitigating the biophysical, social and other relevant effects of development protocols prior to major decisions being taken commitments made.”*⁷⁵

National Conservation Strategy and National Environment Policy

Subsequently the National Conservation Strategy 1992 and the National Environment Policy (NEP) 2006 were formulated to outline India's concerns for environment protection alongside development and other aspects such as poverty.

NEP 2006 focused on work towards conservation of the environment, intergenerational and intragenerational equity, environment governance, efficiency in resource use and integration with social & economic development. It also drew focus on the international concerns of climate change and depletion of the ozone layer.

National Action Plan on Climate Change

The 2008 National Action Plan on Climate Change created room for discussion beyond environment conservation and brought into the light mitigation and adaptation strategies towards climate change with eight missions that were introduced under this Action Plan which include National Solar Mission,

⁷⁵ International Association for Impact Assessment.

National Enhanced Energy Efficiency as well as National Mission on Sustainable Habitat, National Water Mission, National Mission for Sustaining the Himalayan Ecosystem, National Mission for a Green India, National Mission for Sustainable Agriculture and National Mission on Strategic Knowledge for Climate Change.

The National Solar Mission and the National Enhanced Energy Efficiency have been discussed below and the details for all the other missions are provided in the table below.

National Solar Mission

Government of India have launched several schemes and policy measures in the past 10-12 years to encourage generation of solar power in the country. Some of these schemes and policy measures for promoting solar generations include:

- **Schemes:** Solar Park Scheme, VGF Schemes, CPSU Scheme, Defence Scheme, Canal bank & Canal top Scheme, Bundling Scheme, Grid Connected Solar Rooftop Scheme etc.⁷⁶
- **Policy measures:** Renewable Purchase Obligation (RPO) for Solar power, Waiver of Inter-State Transmission System (ISTS) charges and losses for inter-state sale of solar and wind power for projects to be commissioned up to March 2022, Must run status, Guidelines for procurement of solar power through tariff based competitive bidding process, Standards for deployment of Solar Photovoltaic systems and devices, Provision of roof top solar and Guidelines for development of smart cities, Amendments in building bye-laws for mandatory provision of roof top solar for new construction or higher Floor Area Ratio, Infrastructure status for solar projects, Raising tax free solar bonds, Providing long tenor loans from multi-lateral agencies, etc.⁷⁷

The above policy measures and schemes of Government of India has helped the country in adding significant capacity of solar in a short time frame. Recently, India achieved 5th global position in solar power deployment by surpassing Italy. Solar power capacity has increased by more than 11 times in the last five years from 2.6 GW in March, 2014 to 30 GW in July, 2019.⁷⁸ Presently, solar tariff in India is very competitive and has achieved grid parity.⁷⁹

Conference of Parties 15: Copenhagen Accord (2009) and Conference of Parties 16: Cancun Agreements (2010)

At the fifteenth session of the Conference of Parties, deliberations took place for a new political accord shaped as the Copenhagen Accord. Although not legally binding, the Accord provided for explicit emission pledges by all major economies including China and other developing countries. The Copenhagen Accord was based on the IPCC Fourth Assessment Report and adopted a more bottom-up approach than the earlier treaties. At this meeting, climate finance was also quantified for

⁷⁶ Solar Energy, Ministry of New and Renewable Energy available at <https://mnre.gov.in/solar/current-status/> (last accessed on July 26, 2022)

⁷⁷ *Id.*

⁷⁸ Solar Energy, MNRE available at <https://mnre.gov.in/solar/current-status/> (last accessed on August 5, 2022)

⁷⁹ *Id.*

developing countries to scale up their mitigation actions and a flow of US\$ 100 billion a year by 2020 by the developed countries was mooted.

After the initial commitment by the developed countries, the OECD estimated the aggregate volume of public and private climate finance mobilised by developed countries reached USD 62 billion in 2014, up from the USD 52 billion in 2013, with an average for the two years of USD 57 billion per year in 2013-2014.⁸⁰

In accordance to the Copenhagen Accord, India under para 5 submitted its voluntary climate mitigation target which was to cut its emission intensity by 20 to 25 per cent by 2020 from the 2005 levels.⁸¹

Since the Copenhagen Accord included the developing nations in its purview for reducing emission intensity it led to some problems with the operation of mechanisms such as the Clean Development Mechanism under the Kyoto Protocol as these new targets led to double counting of the emission reductions under the mechanism, this led to the realization of a revised carbon market mechanism and the negotiations on the Article 6 are a testament to this development.

The Cancun Agreements at the sixteenth session of the COP led with the aim to establish ambitious climate change agreement for the post-Kyoto phase. The highlight of the agreement was the establishment of the new Green Climate Fund (which was shaped from the climate finance idea as mentioned under Copenhagen), new technology mechanism as well as the formal process of reporting mitigation targets into the UNFCCC. It also led to the agreement on monitoring, reporting and verification which was brokered by India's intervention.

The concept of a financial mechanism was introduced in the Copenhagen meeting, it was formalized and established as the Green Climate Fund (GCF) at the subsequent meeting at the sixteenth conference of parties. Under this GCF, several projects were developed :

- In 2016, the GCF developed 35 portfolio projects under it.
- IN 2017, with USD 663 million were accumulated in GCF resources with 19 projects under implementation.
- By 2018, a jump was made to USD 5 billion and the first ever replenishment launched.
- By 2019, USD 9.8 billion had been achieved and GCF-1 programming program launched with the ambition to deliver enhanced mitigation for each GCF dollar invested.*

⁸⁰ Climate Finance in 2013-14 and the USD 100 billion goal, OECD, and Climate Policy Initiative (CPI).

⁸¹ Anjali Jaiswal, *India Records its Climate Action by Copenhagen Accord Deadline*, NRDC, February 01, 2010; Accelerating Climate Action Together, Marrakech Partnership for Global Climate Action available at https://unfccc.int/sites/default/files/marrakech_partnership_for_global_climate_action.pdf (last accessed on June 8, 2022).

* About Green Climate Fund, Timeline

National Mission for Enhanced Energy Efficiency (NMEEE)

The Mission (implemented since 2011) seeks to upscale the efforts to unlock the market for energy efficiency which is estimated to be around Rs. 74,000 crore and help achieve total avoided capacity addition of 19,598 MW, fuel savings of around 23 million tonnes per year and greenhouse gas emissions reductions of 98.55 million tonnes per year at its full implementation stage.⁸² The NMEEE spelt out four initiatives to enhance energy efficiency in energy intensive industries which are as follows:

- **Perform Achieve and Trade Scheme (PAT)**, a market based mechanism to enhance the cost effectiveness in improving the Energy Efficiency in Energy Intensive industries through certification of energy saving which can be traded.⁸³
- **Market Transformation for Energy Efficiency (MTEE)**, for accelerating the shift to energy efficient appliances in designated sectors through innovative measures to make the products more affordable.⁸⁴
- **Energy Efficiency Financing Platform (EEFP)**, for creation of mechanisms that would help finance demand side management programmes in all sectors by capturing future energy savings.⁸⁵
- **Framework for Energy Efficient Economic Development (FEEED)**, for development of fiscal instruments to promote energy efficiency.⁸⁶

Apart from the mission other major steps have also been taken by the country to focus on Energy Efficiency and Conservation. The Energy Conservation Act (EC Act) was enacted in 2001 with the goal of reducing energy intensity of Indian economy. Bureau of Energy Efficiency (BEE) was set up as the statutory body on 1st March 2002 at the central level to facilitate the implementation of the EC Act.⁸⁷

Various other Schemes have also been introduced, some of them are-

(i) Standard and Labeling

The Bureau initiated the Standards and Labelling programme for equipment and appliances in 2006 to provide the consumer an informed choice about the energy saving and thereby the cost saving potential of the relevant marketed product.⁸⁸

(ii) Energy Conservation Building Code (ECBC)

⁸² Energy Efficiency, Ministry of Power, GOI available at <https://powermin.gov.in/en/content/energy-efficiency> (last accessed on July 26, 2022)

⁸³ National Mission for Enhanced Energy Efficiency (NMEEE), Ministry of Power, GOI.

⁸⁴ *Id.*

⁸⁵ *Id.*

⁸⁶ *Id.*

⁸⁷ Schemes to Promote Energy Conservation and Energy Efficiency, Ministry of Power, GOI.

⁸⁸ *Id.*

It sets minimum energy standards for new commercial buildings having a connected load of 100kW or contract demand of 120 KVA and above.⁸⁹

(iii) Demand Side Management (DSM) Scheme

The scheme focused on the Agriculture DSM, Municipal DSM as well as capacity building of the DISCOMs, Energy Efficiency in Small and Medium Enterprises sector (SME).⁹⁰

Table 2: National Missions under NAPCC

Mission	Ministry	Objective	Achievements
Jawaharlal Nehru National Solar Mission	Ministry of New and Renewable Energy	It was launched in 2010 with the primary aim of achieving grid parity by 2022 and with coal-based thermal power by 2030.	-establishing reverse bidding as the market-oriented procurement mechanism -capital subsidies India achieved 5 th global position in solar power deployment by Solar power capacity has increased s from 2.6 GW in March,2014 to 30 GW in July 2019.
National Mission for Enhanced Energy Efficiency	Ministry of Power	Based on the Energy Conservation Act, 2001. Aims to create market- based mechanism to enhance cost effectiveness of improvements on energy efficiency, switching to clean fuels and commercially viable technology transfers	-29 million bulbs replaced with CFL -3.598 Billion Units / per year Bureau of Energy Efficiency Flagship Programmes- Standard & Labelling, PAT, SME, DSM, etc.
National Mission on Sustainable Habitat	Ministry of Urban Development	Plans to make urban areas more climate friendly and less susceptible to climate	Climate Smart Cities Assessment Framework (CSCAF)” - a first-of-its-kind assessment framework on climate-relevant parameters

⁸⁹ *Id.*

⁹⁰ *Id.*

Mission	Ministry	Objective	Achievements
		change by a multi-pronged approach to mitigate and adapt to it.	
National Water Mission	Ministry of Water Resources, River Development and Ganga Rejuvenation	Ensures better integrated water resource management leading to water conservation, less wastage, equitable distribution forming better policies.	Database for water, missions with specified goals and state level awards.
National Mission for Sustaining the Himalayan Ecosystem	Department of Science of Technology	Created to protect the Himalay an ecosystem. The mandate is to evolve measures to sustain and safeguard the Himalayan glaciers, mountain ecosystems, biodiversity and wildlife conservation & protection.	It has been instrumental in facilitating formulation of appropriate policy measures and time-bound action programmes to sustain ecological resilience
National Mission for Green India	Ministry of Environment, Forest, and Climate Change	It has the mandate of reviving degraded forest land with a focus on increasing forest cover & density and conservin g biodiversity and enhancing carbon sinks.	State-wise list of achievements released by PIB Delhi with states like Orissa, Punjab, Sikkim, and Mizoram meeting their Creation of Plantation Advance Target.
National Mission for Sustainable Agriculture	Ministry of Agriculture	It works towards devising strategies to make Indian agriculture less	Ten dimensions for covering this aspect from mitigation and adaptation measures to research and development.

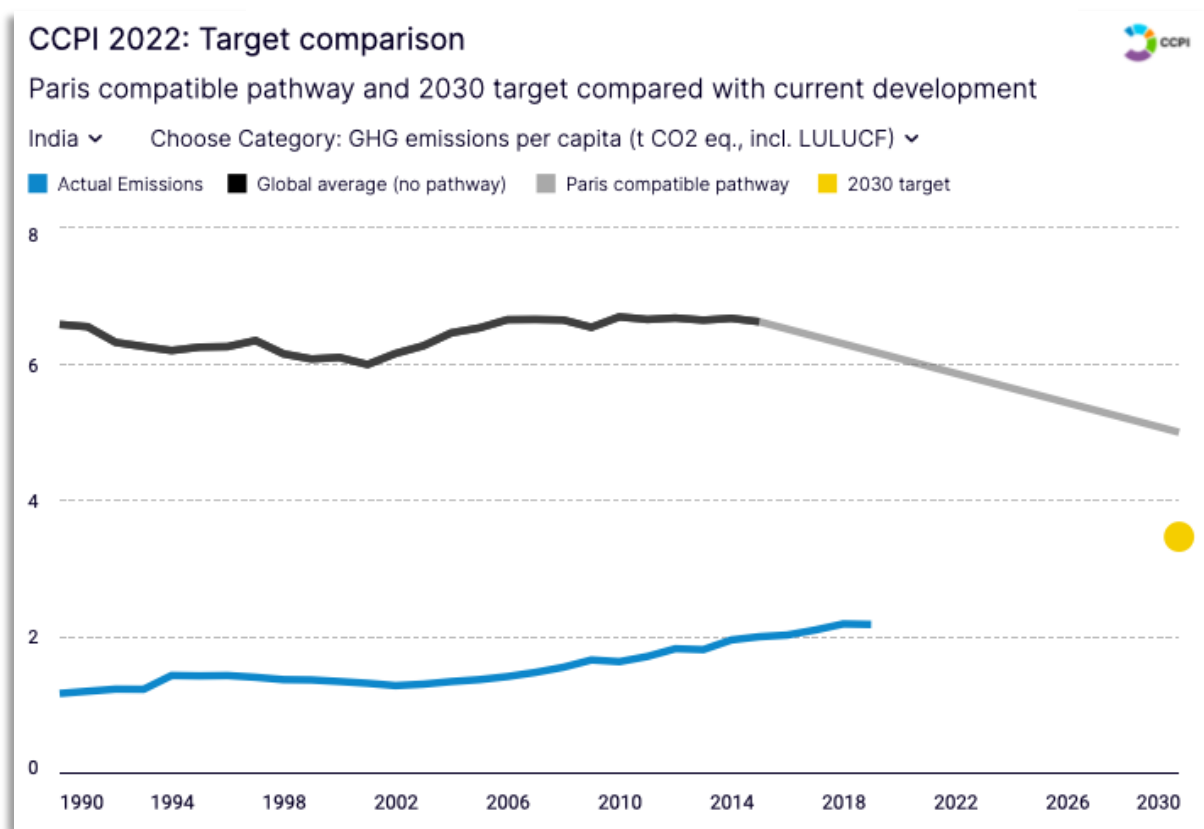
Mission	Ministry	Objective	Achievements
		susceptible to climate change.	
National Mission on Strategic Knowledge for Climate Change	Department of Science and Technology	It identifies challenges and requisite responses to climate change. This will be done through open international collaboration and would ensure sufficient funding for this research.	It has led to the sharing of information on climate change technology globally.

Accelerating India's Climate Policy

At an international level, India has shown great commitment to climate change mitigation. It has been a signatory to most climate change treaties and has shown potential in meeting its targets and has even overachieved beyond its commitments in some cases as can be shown by the example of the Montreal Protocol and more recently the Paris Agreement.

According to Germanwatch's Climate Change Performance Index 2022, India ranks at the 10th spot based on its high rates in the categories in GHG emissions, Energy Use and Climate Policy.⁹¹ The country also scored well in the Renewable Energy category.

Figure 6: CCPI India's Target Comparison (Source: CCPI)



India's Initiatives and Actions for combating Climate change

Even within the SDGs, climate action has remained one of the most significant achievements for the country. However, the responsibility of India has expanded in recent years with the country being considered a key player in determining the future due to its size and growing population.

⁹¹ India, Climate Change Performance Index available at <https://ccpi.org/country/ind/> (last accessed on July 15, 2022)

Initially, India's international stand was one of climate justice, where it strongly propagated for the developed nations to take actions to control climate change as they were considered largely responsible for the emissions in the previous decades. These principles established firmly under Kyoto Protocol with the common but differential responsibilities of nations. However, India has now arrived at a very crucial standpoint in recent times- owing to its population, size and economic growth, India has now become the fourth largest emitter of the greenhouse gas emissions with 3366.1 MtCO₂E (7.08 per cent of global emissions).⁹² However, in terms of per capita CO₂ emissions, India's emission still stands at 1.77 t which is well below the world average of 4.47 t in 2020⁹³.

The Government of India is continually focusing on policy and regulatory aspects to ensure that the country becomes self-reliant and attains its commitments with respect to climate change and reducing the emission intensity. Some of the recent programmes launched by Govt. of India to accelerate its path to achieve the climate targets by India include:

- The Prime Minister on the 75th Independence (2021) launched the National Hydrogen Mission with the objective of making India a hub for green hydrogen. Under the Mission several considerations and incentives have been provided by the Government for manufacturing of green hydrogen in India.
- The National Mission on Transformative Mobility and Battery Storage is another step taken by the country as a multi-disciplinary programme to manufacture EVs and expand mobility in a convenient, congestion-free and clean manner.

Future Roadmap for India

India's active measures and initiatives at the COP26 does put the nation in a leadership position at an international level, the action that needs to follow is marked with challenges on energy efficiency and implementation of current policy. Even with 'phasing down' of coal power and the global movement to towards clean energy, the coal power-based power generation must peak by 2040 and reduce by 99 per cent between 2040 to 2060 in the industry sector and 97 per cent between 2040 and 2065 in the industrial sector.⁹⁴ This will likely come at the cost of economic losses with shift in the investment patterns across the country. The transition to renewable energy also needs to be just in ensuring support to vulnerable communities including labor and households.⁹⁵ Decentralized Renewable Solutions provide good alternatives and could be key in fueling the growth of the country even in socio-economic conditions.

India should also focus on negotiating further over climate finance in the future climate conference as it establishes the importance of climate finance and for the developed countries to follow up on

⁹² Top 10 Greenhouse Gas Emitters, Preliminary global greenhouse gas emissions 2018 excluding land-use change and forestry (LUCF), Climate Watch Data, World Resource Institute available at <https://www.climatewatchdata.org/key-visualizations?visualization=8> (last accessed on June 07, 2022).

⁹³ As per India: CO₂ Country Profile, Our World in Data

⁹⁴ Vaibhav Chaturvedi and Ankur Malyan, Implications of a Net-Zero Target for India's Sectoral Energy Transitions and Climate Policy, Working paper, CEEW, October 2021.

⁹⁵ Pallavi Das and Vaibhav Chaturvedi, India at COP26 and Beyond, Institute of South Asian Studies, National University of Singapore, December 23, 2021.

their promises. The increase in green finance flows in India from a USD 21 billion in 2018⁹⁶ could potentially mean viable solutions for the country to meet its targets. India has shared its vision to be an active participant in the fight against climate change and make increasing transitions to clean and sustainable energy sources with this there is a need to increase the public private partnership (PPP) mechanisms in these areas to support this transition.

At same time, pollution poses a very big challenge for the country. According to the Air Quality Index, India is the second most polluted country in the world. The rapid urbanization in the country and the major movement of people to the cities is often considered to be the reason for pollution challenges. While the government has launched initiatives to declare a war on pollution through National Clean Air Programme which is currently underway, rapid action needs to be taken to minimize effect on human health.

Between increasing energy demand and a brave climate policy initiative at all stages, India is walking on a tightrope in the power sector decision making and while the climate change urgency is absolute, it is important to formulate policy and check implementation in a manner to ensure that the brave steps does not prove to be counterproductive for the needs of the country. In the years to come as India will continue to boost its economic strength, focus on sustainable development measures, move towards a green future, and assume its position as a true climate leader- it will also continue to support its southern neighbors and advocate strongly for climate justice.

⁹⁶ Dr. Arunabha Ghosh, India's Climate Leadership: Domestic Transitions and global opportunities, CEEW, October 2021.

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Annexure I: Brief of Climate Conferences and Milestones:

S. No.	Date/Year Place	Name of Conference	Outcomes & Legality	Framework Design	National Commitment	Remarks
1.	1972 Stockholm	United Nations Conference on Human Environment	Legally binding India- Art 25(4) UNEP	Declaration Global Monitoring Plan on POPs.	Ratified- January 2006. India to update NIP.	Recent Stockholm+50 conference to lead to newer pathways.
2.	1985 Vienna	Protection of Ozone Layer	Non-binding Reduction in CFCs	General Obligations	Ratified- 18 March 1991 India shares the global concern for protection of ozone and phasing out of the ODSs.	Was general in nature and led to the Montreal Protocol which operationalized the Convention.
3.	1987 Montreal	Substances that Deplete the Ozone Layer	Binding commitment to parties	Multilateral Fund, Assessment Panels and Ozon Action Programme	Ratified- 19 June 1992 Under Art 5–10-year grace period, reduction of ODS.	Has been one of the most successful international treaties in climate change mitigation. Next phase- Kigali Amendment (2016)-phasing out HFCs.
4.	1992 Rio de Janeiro	United Nations Conference on Human and Development	Non-binding, development of framework- Agenda 21, UNFCCC, Rio Declaration, Convention on Biodiversity, Forest Principles	Under the UNFCCC- Conference of Parties (COP) was institutionalized, advisory panels on science and technology and implementation	Ratified- 1 November, 1993 Committed to the agenda and general obligations. Submitted proposal at the Rio+20.	The Framework Convention has been the backbone for international climate change policy.

S. No.	Date/Year Place	Name of Conference	Outcomes & Legality	Framework Design	National Commitment	Remarks
				n monitoring set up. Global Environment Facility.		
5.	1997 Kyoto	Conference of Parties Third Session	Kyoto Protocol Legally binding	Expert Review, Adaptation Fund, Clean Development Mechanism, Joint Implementation and Emission Trading.	Ratified- August 26, 2002. Not considered an Annex I party. Under Art 10 committed to making progress in regional/national programmes in achieving sustainable development.	Led to creation of carbon market and small but first steps in recognizing responsibility.
6.	2012 Doha	Conference of Parties Eighteenth Session	Doha Amendment to the Kyoto Protocol	Renewed the commitments under Kyoto for a second period (2013-2020)	India ratified on 09 August 2017. Became 80 th country to accept second commitment period reaffirming support for climate action.	Only 37 industrialized countries including the EU signed up for the mandatory reduction of the GHGs.
7.	2015 New York	United Nations General Assembly	Agenda 2030: 17 Sustainability Development Goals	Outline of general endeavors to be taken by states.	India signed the agenda 2030 Committed to South-South support and through national policies focused on collective efforts for inclusive growth.	Movement towards a well-rounded approach towards sustainable development.
8.	2015 Paris	Conference of Parties Twenty First Session	Paris Agreement Legally Binding	Enhanced Transparency Framework for Reporting, Financial, Technological and Capacity-Building Mechanisms	October 02, 2016 Target emission reduction-33-35% from the 2005 levels Increase renewable capacity-40% by 2030, creating carbon sink of 2.5 to 3 billion tonnes of carbon dioxide equivalent by 2030	Set greater targets for countries while allowing them to scrutinize their positions and capacities through the NDCs.

S. No.	Date/Year Place	Name of Conference	Outcomes & Legality	Framework Design	National Commitment	Remarks
9.	2021 Glasgow	Conference of Parties Twenty Sixth Session	Glasgow Climate Pact	Focus on science and urgency, adaptation mitigation and transfer of technology for the same, assessing loss	Five nectar element-non-fossil energy capacity to 500 GW, 50% energy requirement from renewable, reduce total projected carbon emission by 1 billion Tonnes, reduce carbon intensity by less than 45 per cent by 2030. Achieve net zero by 2070.	Ambitious targets set by the country. It is essential to realize the increasing need to mobilize finance in meeting these targets.

Annexure II: List of Annex I countries under the Kyoto Protocol

	Australia		Austria		Belarus
	Belgium		Bulgaria		Croatia
	Cyprus		Czechia		Denmark
	Estonia		European Union		Finland
	France		Germany		Greece
	Hungary		Iceland		Ireland
	Italy		Japan		Latvia
	Liechtenstein		Lithuania		Luxembourg
	Malta		Monaco		Netherlands
	New Zealand		Norway		Poland
	Portugal		Romania		Russian Federation
	Slovakia		Slovenia		Spain
	Sweden		Switzerland		Türkiye
	Ukraine		United Kingdom of Great Britain and Northern Ireland		

Annexure III: Conference of Parties and Key Highlights

COP Meeting	Dates	Key Highlights-
COP 1- Berlin	28 Mar to 7 Apr 1995.	Voiced concerns about the adequacy of countries' abilities to meet commitments under the Body for Scientific and Technological Advice (BSTA) and the Subsidiary Body for Implementation (SBI) -"Activities Implemented Jointly", first joint measures in international climate action.
COP 2- Geneva	08-19 July 1996	The COP concluded by noting the "Geneva Declaration" which endorses the IPCC conclusions and calls for legally binding objectives and significant reductions in greenhouse gas (GHG) emissions.
COP 3- Kyoto	01-11 Dec 1997	Lead to the adoption of the Kyoto Protocol with binding commitments based on the previous meeting agenda.
COP 4- Buenos Aires	02 -13 Nov 1998	Aimed to resolve issues in Kyoto. However, the complexity and difficulty of finding agreement on these issues proved insurmountable, and instead the parties adopted a 2-year "Plan of Action" to advance efforts and to devise mechanisms for implementing the Kyoto Protocol, to be completed by 2000.
COP 5-Bonn	25 Oct - 5 Nov 1999	Technical Meeting
COP 6-The Hague	13–25 Nov 2000	United States' proposal to allow credit for carbon "sinks" from forests and agricultural lands towards emission reduction targets. However, no agreement was reached.
COP 7- Marrakech	29 Oct 2001 - 10 Nov 2001	Package of decisions known as the Marrakech Accords, negotiators wrapped up the work on the Buenos Aires Plan of Action, finalizing most of the operational details and setting the stage for nations to ratify the Kyoto Protocol.
COP 8- New Delhi	23 Oct 2002 - 01 Nov 2002	Approved the New Delhi work programme on Article 6 of the Convention. The COP8 was marked by Russia's hesitation, stating that it needed more time to think it over. The Kyoto Protocol could enter into force once it was ratified by 55 countries, including countries responsible for 55 per cent of the developed world's 1990 carbon dioxide emissions.
COP 9- Milan	01 - 12 Dec 2003	The parties agreed to use the Adaptation Fund established at COP7 in 2001 primarily in supporting developing countries better adapt to climate change and for capacity building.
COP 10- Buenos Aires	06 - 17 Dec 2004	To promote developing countries better adapt to climate change, the Buenos Aires Plan of Action was adopted. The parties also began discussing the post-Kyoto mechanism.

COP Meeting	Dates	Key Highlights-
COP 11-Montreal	28 Nov 2005 - 09 Dec 2005	First Conference of the Parties serving as the Meeting of the Parties to the Kyoto Protocol (CMP 1)- Montreal Action Plan to extend its life.
COP 12-Nairobi	06 - 17 Nov 2006	Certain strides including in the areas of support for developing countries and clean development mechanism were made. The parties adopted a five-year plan of work to support climate change adaptation by developing countries and agreed on the procedures and modalities for the Adaptation Fund.
COP 13- Bali	03 - 17 Dec 2007	Agreement on a timeline and structured negotiation on the post-2012 framework (the end of the first commitment period of the Kyoto Protocol) was achieved with the adoption of the Bali Action Plan (Decision 1/CP.13)
COP 14- Poznań	01 - 12 Dec 2008	Delegates agreed on principles for the financing of a fund to help the poorest nations cope with the effects of climate change and they approved a mechanism to incorporate forest protection into the efforts of the international community to combat climate change.
COP 15- Copenhagen	07 - 18 Dec 2009	The overall goal for the COP 15/CMP 5 United Nations Climate Change Conference in Denmark was to establish an ambitious global climate agreement for the period from 2012 when the first commitment period under the Kyoto Protocol expires. The seed for climate finance with quantification of USD 100 billion.
COP 16-Cancún	28 Nov 2010 - 10 Dec 2010	The outcome of the summit was an agreement adopted by the states' parties that called for the US\$100 billion per annum "Green Climate Fund", and a "Climate Technology Centre" and network. However, the funding of the Green Climate Fund was not agreed upon.
COP 17- Durban	28 Nov- 9 Dec 2011	The conference agreed to a start negotiation on a legally binding deal comprising all countries, to be adopted in 2015, governing the period post 2020. There was also progress regarding the creation of a Green Climate Fund (GCF) for which a management framework was adopted.
COP 18--Doha	26 Nov- 7 Dec 2012	The Conference produced a package of documents collectively titled The Doha Climate Gateway. The conference made little progress towards the funding of the Green Climate Fund.
COP 19- Warsaw	11 -23 Nov 2013	9th session of the Meeting of the Parties (CMP) to the 1997 Kyoto Protocol. All countries were required to prepare Intended Nationally Determined Contributions (INDCs).
COP 20- Lima	1 -12 Dec 2014	New urgency towards fast tracking adaptation and building resilience across the developing world—not least by strengthening the link to finance and the development of national adaptation plans. Discussions led to further clarity

COP Meeting	Dates	Key Highlights-
		on the INDCs which provided that they could include go beyond mitigation based on country priorities.
COP 21- Paris	30 - 12 Dec 2015	Led to Paris Agreement, which ended the work of the Durban platform, established during COP17.
COP 22- Marrakech	07 - 18 Nov 2016	Focal issue was that of water scarcity, water cleanliness, and water-related sustainability, a major problem in the developing world, including many African states.
COP 23- Bonn	06 - 17 Nov 2017	“Powering Past Coal Alliance”, led by the UK and Canada calling for phasing out of coal.
COP 24- Katowice	03 -14 Dec 2018	Outcome included hints at the need for more ambitious climate pledges before 2020.
COP 25-Madrid	02 -13 Dec 2019	There were moves to raise ambition by some non-state actors at the COP with, for example, 177 companies pledging to cut emissions in line with the 1.5C target as part of the Climate Ambition Alliance.
COP 26- Glasgow	31 Oct 2021 - 12 Nov 2021	Held after skipping 2020 due to the pandemic, talks on the failure of developed nations to contribute to the Climate fund, phasing down of coal.

Annexure IV: The Intergovernmental Panel on Climate Change

In November 1988, the Intergovernmental Panel on Climate Change was established by the World Meteorological Organization and UN Environment Programme. The IPCC took over the scientific insights and assessments of the developments. The reports are released by the Panel and till date all reports have fed into international negotiations and climate policy making. There have been five assessment reports till date and the sixth assessment report is underway.

1. IPCC First Assessment Report (1990)- Underlined the importance of climate change as a challenge with global consequences and requiring international cooperation. It played a decisive role in the creation of the UNFCCC, the key international treaty to reduce global warming and cope with the consequences of climate change.
2. IPCC Second Assessment Report (1995)- Provided important material for governments to draw from in the run-up to adoption of the Kyoto Protocol in 1997.
3. IPCC Third Assessment Report (2001)- Focused attention on the impacts of climate change and the need for adaptation.
4. IPCC Fourth Assessment Report (2007)- Laid the ground work for a post-Kyoto agreement, focusing on limiting warming to 2°C.
5. IPCC Fifth Assessment Report was finalized between 2013 and 2014- It provided the scientific input into the Paris Agreement.

Annexure V: Commitments by other major countries

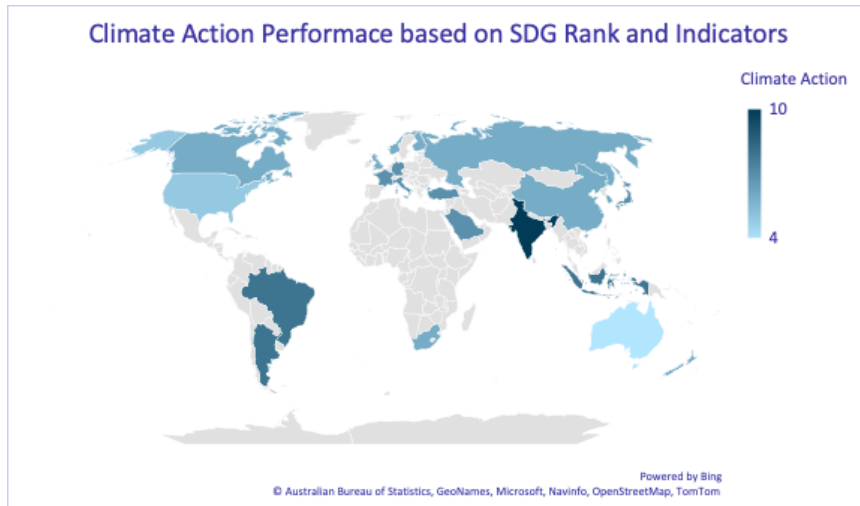


Figure 6- The representation on the map is based on indicators (4) as highlighted under the SDG ranking for Goal 13: Climate Action, which have been marked as moderately growing, stagnating growth, declining, improving and where major challenges remain for each of the following nations.

The indicators are the following-

- CO₂ emissions from fossil fuel combustion and cement production
- CO₂ emissions embodied in imports
- CO₂ emissions embodied in fossil fuel exports
- Carbon Pricing Score at EUR60/tCO₂

Among many major countries, India is one of the only countries to have achieved/is on the successful track of achieving this SDG.

Australia

The Australian Government has set the target that it will reduce the greenhouse gas emissions to 26-28 per cent below 2005 levels by 2030. The government aims to achieve the target through policies built on proven Direct-Action approach, which improve productivity, reduce costs, and drive innovation-such as the Emissions Reduction Fund, its Safeguard Mechanism and other complementary policies.

Although the government provides that it outperformed its Kyoto Protocol first commitment period target (2008-2012). The 2015 report by the government showed only two per cent fall in the GHG

emissions between 2000-2013.

The updated NDC of Australia commits it to⁹⁷

- the country will reduce greenhouse gas emissions by 43% below 2005 levels by 2030, which is a 15 percentage point increase on Australia's previous 2030 target
- reaffirms net zero emissions by 2050
- commits the government to providing an annual statement to parliament on progress towards these targets
- restores Australia's Climate Change Authority as a source of independent policy advice.

The Australian Government has also committed to \$2 billion until 2025 to support Pacific and Southeast Asian countries to enhance climate resilience⁹⁸. However, Climate Action Tracker provides that Australia's international public climate finance contributions have been very low compared to its fair share.⁹⁹

Canada

Under its new updated NDCs Canada has:

- moved from being a target of 30 per cent below 2005 level by 2030 to 40-45 per cent reductions below 2005 levels by 2030.
- committed to reducing its emissions to net-zero by 2050.
- enhanced accompanying information for clarity, transparency and understanding under Annex I.

In 2016, Canada's First Ministers adopted the Pan-Canadian Framework on Clean Growth and Climate Change (PCF), Canada's first national climate change plan to reduce GHG emissions, accelerate clean economic growth, and build resilience to a changing climate.¹⁰⁰ In 2015, prior to the PCF Canada's emissions were projected to increase indefinitely, reaching 815 megatonnes (Mt) in 2030 (12 % higher than 2005 levels). However, after the adoption of PCF Canada's 2030 emissions are now projected to be 468 Mt, 347 Mt lower than projects in 2015 (36 % below the 2005 levels).

At the 2021, G7 Leaders' Summit, Canada announced a doubling of its international climate finance commitment, to \$5.3 billion over the next five years, a commitment built on the successes of Canada's \$2.65 billion commitment between 2015-2021.

In 2020, 81% of Canada's climate-related bilateral official development assistance (ODA)

⁹⁷ Australia submits new emission targets to UNFCCC, June 12, 2022, Australian Government, Dept. of Industry, Science and Resources.

⁹⁸ Doubling Climate Finance for Pacific and Southeast Asian countries (2020-2025), PM Australia available at <https://www.pm.gov.au/media/increasing-support-regions-climate-action-and-economic-growth>

⁹⁹ Climate Action Tracker, Australia.

¹⁰⁰ Canada's 2021 Nationally Determined Contribution under the Paris Agreement available at https://cuspnetwork.ca/wp-content/uploads/2021/07/Canada%27s_Enhanced_NDC_Submission_EN.pdf (last accessed on August 10, 2022).

commitments focused on climate change mitigation.¹⁰¹ Climate change adaptation accounted for 32%. As is apparent from the relative size of these percentages, there is also a significant overlap between the two markers since projects can target both adaptation and mitigation.

European Union-

In addition to the pandemic, the EU has had to face new added urgency due to Russia's invasion of Ukraine. However, the EU has been committed to its responsibility in mitigating climate change. EU submitted its first NDC to the UNFCCC Secretariat on March 06, 2015. In its now updated NDCs, the EU has laid the objective of climate neutrality with the following main elements:

- union-wide climate neutrality by 2050.
- at-least 55 per cent net GHG emissions reductions by 2030 compared to 1990 levels.
- long term low greenhouse gas emission development strategy of the EU and its Member States.
- mechanism for setting a 2040 target, taking into account an indicative GHG budget for 2030-2050 to be published by the European Commission
- process for voluntary sectoral decarbonisation roadmaps.

However in its commitment to climate finance it is noteworthy that in 2020, the European Union Institutions (EUI; including the European Commission and European Investment Bank, EIB) spent US\$4.6 billion in bilateral allocable ODA on projects which targeted action against climate change as a principal or significant objective, making them the fourth-largest Organisation for Economic Co-operation and Development (OECD) Development Assistance Committee (DAC) donor to the issue, in absolute terms.¹⁰²

Key sectors receiving the EUI's climate financing in 2020 included agriculture (23%), energy (17%), other multi-sector initiatives (11%), and infrastructure (10%).¹⁰³The EUI spent 20% of their bilateral allocable ODA on climate finance in 2020. ¹⁰⁴This is slightly lower than the (Development Assistance Committee) average of 23%, and puts the EUI in thirteenth place out of 30 DAC members.¹⁰⁵

Germany

As an EU member state, Germany did not submit its own Intended Nationally Determined Contribution (INDC) or emissions reduction target towards COP21.

However, based on the Sustainable Development Report Climate Action remains a challenge for the country with indicators CO₂ emissions from fossil fuel combustion and cement production, CO₂ emissions embodied in imports present some major challenges for the nation.¹⁰⁶

However, Germany is the second-largest donor country to climate projects in absolute terms. US\$8.2

¹⁰¹ Donor Tracker, Canada- Climate available at <https://donortracker.org/canada/climate> (last accessed on August 11, 2022).

¹⁰² Donor Tracker-EU available at <https://donortracker.org/eu/climate> (last accessed on August 11, 2022)

¹⁰³ *Id.*

¹⁰⁴ *Id.*

¹⁰⁵ *Id.*

¹⁰⁶ Sustainable Development Report, Germany.

billion of its official development assistance (ODA) was spent on targeted action against climate change as a principal or significant objective in 2020.¹⁰⁷ Germany's funding in this sector has increased over the last five years, rising by 10% since 2016 when it allocated US\$7.5 billion to climate.¹⁰⁸

United States

With internal political leadership changes, US had to rejoin the Paris Agreement in early 2021 on the first day in office of President Biden. In its INDC the United States aims to:

- Achieve an economy-wide target of reducing its GHG emissions by 50-52 percent below the 2005 levels in 2030.¹⁰⁹

The climate ambition set by the country is low considering that US is among the top GHG emitters in the world by a large margin¹¹⁰. According to the Climate Transparency Report the USA's NDC is not on track to meet the target under the Paris Agreement. The country has **not set forth a net zero target** yet. Even the climate spending in the proposed American Jobs Plan is being scaled back.¹¹¹ Being among one of the wealthiest countries in the world, the US should have made active contribution towards international climate finance. Instead, the country has made significantly less contribution for developing countries, the US Congress has approved a **mere \$1 billion** in international climate finance for 2022-falling far short of Biden's pledge to **provide \$11.4bn** by 2024.¹¹²

The Sustainability Development Report also reflects that major challenges remain at the Climate Action for the country with CO₂ emissions from fossil fuel combustion and cement production and Carbon Pricing Score at EUR60/TCO₂ remaining stagnant or showing less than required progress.¹¹³

United Kingdom

As an EU member state till 31 January 2020, the UK was committed to contributing to the EU NDC¹¹⁴, given its withdrawal the UK and Northern Ireland has submitted its first NDC which provides the commitment:

- Economy-wide greenhouse gas emissions by at least 68% by 2030, compared to 1990 levels.¹¹⁵

The sectors covered under the NDC are energy (including transport); Industrial Processes and Product Use (IPPU); Agriculture; Land-use, Land-Use Change and Forestry (LULUCF); and Waste.¹¹⁶ The UK has

¹⁰⁷ Donor Tracker-Germany-Climate at <https://donortracker.org/germany/climate> (last accessed on August 11, 2022).

¹⁰⁸ *Id.*

¹⁰⁹ USA- NDC, UNFCCC

¹¹⁰ Cumulative emissions from 1750-2020, Each Country's Share of CO₂ Emissions, Union of Concerned Scientists, Published Jul 16, 2008 (Updated Jan 14, 2022).

¹¹¹ Climate Transparency report-USA, 2021.

¹¹² Chloe Farand, US approves just \$1bn climate finance for developing countries in 2022, March 11, 2022, Climate Home News.

¹¹³ Sustainability Development Report- US

¹¹⁴ Climate Transparency Report-UK, 2020.

¹¹⁵ UK-NDC, UNFCCC

¹¹⁶ *Id.*

reversed its 2015 ban on onshore wind and solar PV projects applying for support in renewable energy auctions, starting from the next round of auctions in 2021.¹¹⁷

UK International Climate Finance has been the government's commitment to building resilience and accelerating transition. The UK committed to spend £5.8 billion over the previous five years and has now doubled that to spend £11.6 billion between April 2021 and March 2026, £3bn of which will contribute to protecting and restoring nature.¹¹⁸ There are various programmes under the International Climate Finance such as the Climate and Resilience Framework Programme (CLARE) and Forest Governance Markets and Climate (FGCM).¹¹⁹

France

Even though the country ranks 7 on the SDG Index, Climate Action remains a challenge for the country. With some challenges remaining in certain sectors such as stagnating movement in CO₂ emissions embodied in imports, some growth in carbon pricing score at EUR60/tCO₂ indicator for assessment and moderately improving CO₂ emissions from fossil fuel combustion and cement production. France's national target is to reduce emissions 40% below 1990 levels, or approximately 329 MtCO₂e, by 2030. The country also has set forth a net zero target by 2050. Energy efficiency is the central pillar of France's National Low-Carbon Strategy, and the government is aiming to halve final energy consumption between 2012 and 2050.¹²⁰ At COP26 in November 2021, France pledged US\$7.0 billion in annual climate finance to support partner countries.¹²¹ The French Development Agency (AFD) committed to disbursing 50% of its financing to climate-related programming: a target which it successfully hit in 2019.¹²² France's climate-related ODA mainly focuses on climate-change mitigation (72% of total climate-related financing) while interventions aimed at climate change adaptation account for 56% of France's climate funding.¹²³

Russian Federation

The Russian Federation has reiterated its commitment towards the climate through its updated NDC under which it commits to:

Limiting anthropogenic greenhouse gases in Russia to 70-75% of 1990 levels by the year 2030 might be a long-term indicator, subject to the maximum possible account of absorbing capacity of forests.

The Russian Federation has received ample criticism because of its lack of climate research and low mitigation efforts even though the country has participated in all climate negotiations on the international front and is a signatory to international treaties.¹²⁴ Russia's March 2020 "Energy

¹¹⁷ Climate Transparency Report-UK.

¹¹⁸ UK International Climate Finance, HM Government, November 2021.

¹¹⁹ *Id.*

¹²⁰ France needs to invest more in energy efficiency, renewables and nuclear to put itself on track for net zero by 2050, IEA policy review says, IEA Press Release, No 30, 2021.

¹²¹ Donor Tracker- France available at <https://donortracker.org/france/climate> (last accessed on August 11, 2022).

¹²² *Id.*

¹²³ *Id.*

¹²⁴ Georgy Safonov, Back to the Future? Russia's Climate Policy Evolution, CSIS, March 1, 2021.

Strategy – 2035” may well signal an extended commitment to this inaction as it envisions a substantial increase of Russian fossil fuel production, combustion, and exports within next 15 years.¹²⁵ Most of the new legal initiatives related to carbon emission regulation have been controlled and carefully watered down by the fossil fuel lobby.¹²⁶

The Climate Action Tracker marks the Russian Federation overall rating as critically insufficient with their highly insufficient policies and action and critically insufficient climate finance targets.¹²⁷

Saudi Arabia

The Kingdom of Saudi Arabia (KSA) reaffirmed its commitment to Paris Agreement goals and achieving mitigation co-benefits through economic diversification and adaptation.¹²⁸ The ambition laid down by the country:

Reducing and avoiding GHG emissions by 278 million tons of CO₂eq annually by 2030, with the year 2019 designated as the base year for this NDC. This ambition is more than a two-fold increase versus the previous one as outlined in the Kingdom’s INDC (130 million tons of CO₂eq). The renewable energy projects will contribute to the diversification of the energy mix used in electricity production.¹²⁹

The country has taken initiatives for carbon capture utilization and storage build upon the experience in the CO₂ Enhanced Oil Recovery (EOR) project. However, the Climate Action Tracker gives KSA highly insufficient domestic target and insufficient policies. The country is still facing some major challenges in the achieving Goal 13 Climate Action.¹³⁰

Recently KSA leadership has pledged to cut its carbon emission to net zero by 2060 joining 100 other countries in these pledges and has said to invest more than \$180bn to reach the goal.¹³¹

Norway

Norway was one of the first developed country to submit an updated NDC on February 7, 2020, in which, the country strictly focused on mitigation. The target specified by the country is to:

- Reduce emissions by at least 50 per cent and towards 55 per cent compared to 1990 levels by 2030.

The NDC also mentions the countries aim of achieving “the enhanced ambition through climate cooperation with the European Union.” It also specifies that in case, “the enhanced target specified by Norway goes beyond the updated determined contribution of the European Union, Norway

¹²⁵ *Id.*

¹²⁶ *Id.*

¹²⁷ Climate Action Tracker- Russian Federation.

¹²⁸ Kingdom of Saudi Arabia, Updated First NDC, UNFCCC

¹²⁹ *Id.* at 4.

¹³⁰ Sustainable Development Report- Saudi Arabia.

¹³¹ Saudi Arabia commits to net zero emissions by 2060, BBC News, October 23, 2021.

intends to use voluntary cooperation under Article 6 of the Paris Agreement to fulfill its part that goes beyond what is fulfilled through the climate cooperation with the EU.”¹³²

The country also has an overall rating for almost sufficient policies and actions and a Paris Agreement Compatible domestic target.¹³³ It has also received a high ranking on the SDGs in the SDG Report with good performance on five goals and shown visible growth in other goals including sustainable cities and communities. Within Climate Action, the country still faces some major challenges pertaining to CO₂ emissions from fossil fuel combustion and cement production and stagnating growth in CO₂ emissions embodied in imports. Norway is the ninth-largest donor country, spending US\$4.2 billion on official development assistance (ODA) in 2020 (current prices; US\$4.7 billion in 2019 constant prices).¹³⁴ The country also committed to double climate finance by 2026, reaching US\$1.6 billion which primarily aimed at supporting lower-middle-income countries in financing both the reduction of greenhouse gas emissions and strengthening resilience to future climate change.¹³⁵

Brazil

Brazil communicated its updated nationally determined contribution (NDC) on the 11 March 2022 which provides its commitment to:

- Reduce its greenhouse gas emissions in 2025 by 37% compared with 2005 and emissions in 2030 by 50% compared with 2005.
- Long-term objective to achieve climate neutrality by 2050.

The country has shown promise in climate action through maintaining SDG achievement in CO₂ emissions from fossil fuel combustion and cement production and embodied in imports.¹³⁶ The country has been one of the top host countries for CDM projects. Yet, the Climate Action Tracker rates the country's policies and action insufficient and internationally supported target as highly insufficient. Brazil is tapping \$70 million in grant and near-zero interest financing from the FIP to promote sustainable management and use of previously anthropized savannah woods areas, to maintain carbon stocks and reduce GHG emissions, and to improve the collection and management of information on the Cerrado biome.¹³⁷

Japan

Japan is one of the countries that has faced some of the harsh realities of climate change. Owing to that the country has adapted strong climate initiative. The country updated its nationally determined contribution and aims to:

¹³² Update of Norway's nationally determined contributions, UNFCCC

¹³³ Climate Action Tracker- Norway.

¹³⁴ Donor Tracker-Norway.

¹³⁵ *Id.*

¹³⁶ Sustainable Development Report-Brazil.

¹³⁷ Climate Investment Funds-Brazil.

- Reduce its greenhouse gas emissions by 46 percent in fiscal year 2030 from its fiscal year 2013 levels
- Net-zero by 2050.

Japan aims to contribute to international emission reductions and removals at the level of a cumulative total of approximately 100 million t- CO₂ by fiscal year 2030 through public-private collaborations.¹³⁸ The government of Japan has also renewed its commitment on Climate Finance 2021-25 totaling JPY 6.5 trillion over the next 5 years, from 2021 to 2025 and the country will enhance its assistance for adaptation which will include development of basic infrastructure contributing to disaster prevention and support for capacity building.¹³⁹ Japan has been actively supporting developing countries. During the Leaders Event at COP 21 held in Paris in 2015, Prime Minister Abe announced the Action for Cool Earth 2.0 (ACE 2.0), Japan's new set of contribution for reinforcing the world's strategy against climate change.¹⁴⁰ He also stated that, as part of the contribution, Japan will mobilize approximately 1.3 trillion yen of public and private climate finance to developing countries in 2020.¹⁴¹

Argentina

Argentina has signed and ratified the Paris Agreement, submitting the ratification document on September 21st, 2016. The country which has a significant biodiversity as well as distinctive and diverse geomorphic and climatic conditions. The country has submitted its updated NDC which resulted from a participative process. The goals mentioned under the NDC are as follows:

- Unconditional goal: Reduce GHG emissions by 15% in 2030 with respect to projected BAU emissions for that year. The goal includes, inter alia, actions linked to: the promotion of sustainable forest management, energy efficiency, biofuels, nuclear power, renewable energy, and transport modal shift.¹⁴²
- Conditional goal: Argentina could increase its reduction goal under the following conditions: a) Adequate and predictable international financing; b) support for transfer, innovation and technology development; c) support for capacity building. In this case, a reduction of 30% GHG emissions could be achieved by 2030 compared to projected BAU emissions in the same year.¹⁴³

Argentina is considered a developing country based on its economic performance. Under the Green Climate Fund, the country currently has two projects- Argentina's REDD+ and Argentinian Small and Medium-sized Enterprises (SMEs) in renewable energy and energy efficiency.¹⁴⁴ Through these

¹³⁸ Japan's NDC, UNFCCC

¹³⁹ Japan's Renewed Commitment on Climate Finance 2021-25 available at <https://www.mofa.go.jp/files/100200521.pdf> (last accessed on August 12, 2022)

¹⁴⁰ Japan's climate-related support, Climate Change, Ministry of Foreign Affairs of Japan, July 26, 2021.

¹⁴¹ *Id.*

¹⁴² Argentine Republic, Intended Nationally Determined Contributions (INDC), Non-Official Translation, UNFCCC

¹⁴³ *Id.*

¹⁴⁴ Argentina Portfolio, Green Climate Fund

projects, Argentina is increasing the share of renewable energy in the country's energy mix to 20 percent by 2025, will reduce energy consumption by 5.9 percent by 2025¹⁴⁵ and has reduced 18.73 million tonnes of carbon dioxide equivalent (MtCO₂eq) in emissions through reducing deforestation.¹⁴⁶

Italy

Italy has provided its nationally determined contributions as a member-state of the European Union. Italy plans to cut its carbon emissions by around 60% by 2030 after using 80 billion euros (\$96 billion) of EU funds for energy transition in the next years.¹⁴⁷

The country signed its contribution agreement with the GCF and World Bank in October 2015 and subsequently amendments were made to the agreement in January 2017. The terms of the agreement read that 'the Contributor agrees to make available to the Trust Fund for the benefit of the Fund a supplement contribution in the amount of one hundred fifty million Euro in the form a Grant Contribution in accordance with the terms of this Amendment.'¹⁴⁸ Even though the country announced a \$1.4bln dollars per year for the next five years in later October 2021 in climate finance. Some think tanks estimate the country's fair contributions towards the \$100bln dollar fund should considerably more.¹⁴⁹

China

As the world's largest emitter China's INDC were highly anticipated. In its INDC the country has put forward two new goals for 2030:

- Reducing CO₂ emissions per unit of GDP (known as carbon intensity) by 60 to 65 percent below 2005 levels, and
- Increasing its forest carbon stock volume by around 4.5 billion cubic meters from 2005 levels.¹⁵⁰

The new carbon intensity target builds on China's existing target to reduce intensity 40-45 percent by 2020, and its roughly consistent with scenarios showing China's CO₂ emissions peaking in 2030.¹⁵¹ The country is also largely coal-dependent for its energy needs. It accounts for nearly half of coal consumed globally and is also the world's largest coal producer. The country is also the largest financier of fossil fuel infrastructure with massive Belt and Road Initiative (BRI) which some

¹⁴⁵ Argentina REDD-plus RBP for results period 2014-2016, GCF

¹⁴⁶ Promoting risk mitigation instruments and finance for renewable energy and energy efficiency investments, GCF available at <https://www.greenclimate.fund/project/fp064> (last accessed on August 16, 2022).

¹⁴⁷ Reuters, Italy says it plans to cut carbon emissions by 60% by 2030, Environment, March 11, 2021.

¹⁴⁸ Italian Republic, Contribution Agreement, Finance, Green Climate Fund.

¹⁴⁹ Reuters, Italy hikes climate finance contribution to \$1.4bln per year for the next five years, Environment, November 1, 2021.

¹⁵⁰ China's INDC, WRI, July 2, 2015

¹⁵¹ Taryn Fransen et al, A closer look at China's New Climate Plan (INDC), WRI, July 2, 2015.

researchers have found could drive the global average temperature to increase by 2.7°C significantly higher than the Paris Agreement's goal.¹⁵²

For Climate Action, the country has been overcoming several challenges however CO₂ emissions from fossil fuel combustion and cement production remains a staggering challenge for the country as mentioned above as well.¹⁵³ The Green Climate Fund, provides that the total financing of China currently stands at 100million with one project under implementation. The project will catalyse private finance by offering adequate returns thanks for the blending of public finance, concessional donor finance, and private finance.¹⁵⁴ With China being one of the most powerful economies, the country should reconsider its climate finance initiatives and take more stringent measures to meet the objectives of international climate policy.

Republic of Korea

The Republic of Korea submitted its INDC in June of 2015 and in the years that followed the republic introduced sectoral implementation plan by implementation plan by establishing the *2030 Basic Roadmap for Achieving the National Greenhouse Gas (GHG) Reduction Target*.¹⁵⁵ In its updated 2030 target at an ambitious level and specifies the following:

- Achieve the goal of carbon neutrality by 2050 despite the country's manufacturing-oriented industry structure
- Reduce total national GHG emissions by 40% from the 2018 levels, which is 727.6 MtCO₂eq by 2030.

The Republic of Korea has also enacted the *Framework Act on Carbon Neutrality and Green Growth for Climate Crisis Response* which enshrines the minimum level of a mid-term national GHG emission reduction target as well as a robust implementation mechanism in law to ensure faithful implementation of its NDC.¹⁵⁶

The country has also provided for various adaptation measures to be undertaken, to improve climate resilience, the government will establish and implement measures to manage 84 climate risks in 6 sectors including water management, ecosystems, national land and coastal areas, agriculture and fisheries, health and industry and energy.¹⁵⁷ It also aims to strength monitoring, forecasting and assessment based on science-based assessment and improving climate vulnerability and risk assessment tools.¹⁵⁸

South Africa

¹⁵² Lindsay Maizland, China's Fight Against Climate Change and Environment Degradation, Council on Foreign Relations

¹⁵³ Sustainable Development Report- China.

¹⁵⁴ Catalyzing private finance to maximize mitigation and adaptation impacts, Green Climate Fund available at <https://www.greenclimate.fund/project/fp082> (last accessed on August 16, 2022).

¹⁵⁵ The Republic of Korea's Enhanced Update of its First Nationally Determined Contribution, UNFCCC, Dec 23, 2021.

¹⁵⁶ *Id.*

¹⁵⁷ *Id.*

¹⁵⁸ *Id.*

South Africa has shown commitment to addressing the concerns of climate change and even though some challenges remain in its climate action especially those relations to emission from fossil fuel and cement production it has shown moderate improvement in achieving these goals. The country is set forth its national priorities and circumstances. It highlights that the country needs to focus on both its development needs and climate change imperatives.¹⁵⁹

In its INDC the country provides for both adaptation and mitigation components and sets certain goals such:

Adaptation¹⁶⁰

- Goal 1: Develop a National Adaptation Plan, and begin operationalisation as part of implementing the NCCRP for the period of 2020 to 2025 and for the period of 2025 to 2030.
- Goal 2: Take into account climate considerations in national development, sub-national and sector policy framework for the period of 2020 to 2030
- Goal 3: Build the necessary institutional capacity for climate change response planning and implementation for the period of 2020 to 2030.
- Goal 4: Develop an early warning, vulnerability and adaptation monitoring system for key climate vulnerable sectors and geographic areas for the period of 2020 to 2030 and reposting in terms of the National Adaptation Plan with rolling five-year implementation periods.
- Goal 5: Development of a vulnerability assessment and adaptation needs framework by 2020 to support a continuous presentation of adaptation needs.
- Goal 6: Communication of past investments in adaptation for education and awareness as well as for international recognition.

Mitigation

- South Africa's updated mitigation targets represent a significant progression from the first NDC: the country commits to a fixed target for greenhouse gas emissions levels of 398-510 MtCO₂e by 2025, and 350-420 MtCO₂e by 2030, compared to 398 and 614 Mt CO₂e between 2025 and 2030 as communicated in the first NDC.¹⁶¹

The country is considered highly susceptible to adverse effects of climate change, such as extreme droughts and rainfall fluctuations. In a press release on the 22 August, 2019 the Green Climate Fund (GCF) and Development Bank of Southern Africa (DBSA) announced the signing of an agreement which was intended to launch a programmes to break market barriers and accelerate investments into climate projects.¹⁶²

¹⁵⁹ South Africa's INDC, UNFCCC.

¹⁶⁰ South Africa's INDC, UNFCCC.

¹⁶¹ South Africa, Climate Promise, UNDP available at <https://climatepromise.undp.org/what-we-do/where-we-work/south-africa>.

¹⁶² GCF and DBSA partnership to boost climate investments in the Southern Africa region, GCF, August 22, 2019.

It is estimated that in South Africa alone, more than USD 349 billion will be needed to reach national 2050 goals established in the country's Nationally Determined Contributions (NDC).¹⁶³

The DBSA Climate Finance Facility (CFF), into which GCF is investing USD 56 million, will break these barriers by providing credit enhancements such as subordinated debt tranches and tenor extensions to de-risk and increase the bankability of climate projects to crowd-in significant investments from commercial banks and projects sponsors.¹⁶⁴

Indonesia

The country is highly vulnerable to climate change impact, including extreme events such as floods and droughts, and long-term changes from sea level rise, shifts in rainfall patterns and increasing temperature.¹⁶⁵ Indonesia is a nascent yet stable democracy and the fourth most populous country in the world.¹⁶⁶ While the country is still making economic progress, it has also been set on taking enhanced actions and transitioning to a low carbon future. In 2009, Indonesia voluntarily pledged to reduce emissions by 26% on its own efforts, and up to 41% with international support, against the business-as-usual scenario by 2020.¹⁶⁷ In energy sector, Indonesia has embarked on a mixed energy use policy, with at least 23 % coming from new and renewable energy by 2025.¹⁶⁸

In its new updated INDC the country has provided that:

- Unconditional Reduction- Indonesia has committed to reduce unconditionally 29% of compared to the business as usual (BAU) scenario by 2030, as a fair reduction target scenario based on the country's most recent assessment of the 2010's National Action Plan on GHG reduction. The BAU scenario is projected approximately 2.881 GtCO₂e in 2030.
- Conditional Reduction- Indonesia's additional 12% of intended contribution by 2030 is subject to provision in the global agreement including through bilateral cooperation, covering technology development and transfer, capacity building, payment for performance mechanisms, technical cooperation, and access to financial resources.

The country has shown progress in its commitment for climate action. The country has shown moderately improving scores however challenges remain, in emissions from fossil fuel combustion and cement production and emissions embodied in fossil fuel exports.¹⁶⁹

¹⁶³ *Id.*

¹⁶⁴ *Id.*

¹⁶⁵ Indonesia, Climate Change Knowledge Portal, World Bank.

¹⁶⁶ Indonesia, INDC, UNFCCC

¹⁶⁷ *Id.*

¹⁶⁸ *Id.*

¹⁶⁹ Sustainable Development Report-Indonesia.



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