THE ROAD FROM PARIS: INDIA’S PROGRESS TOWARD ITS CLIMATE PLEDGE

India, one of the largest economies in the world, is taking strong strides towards achieving its climate goals under the Paris Agreement. The country is on track to meet, and likely exceed, its key commitment of cutting its greenhouse gas (GHG) emissions intensity by 33 to 35 percent below 2005 levels by 2030, and to achieving 40 percent of its installed electric power capacity from non-fossil sources by the same year. In September 2019, the Prime Minister of India committed to a target of 450 gigawatts (GW) of renewable energy installations, likely by 2030 – equivalent to five times more than India’s current installed renewable capacity and bigger than the size of India’s electricity grid size in 2019. However, more work is required on India’s carbon sink target.

NATIONAL OVERVIEW

India is an emerging economic powerhouse. It is also the world’s third-largest energy consumer and greenhouse gas (GHG) emitter, although its per capita emissions, and historical emissions are low. For instance, India’s per capita emissions in 2017 at 1.61 tons of carbon dioxide (tCO₂) are just over a third of the global average (4.37 tCO₂/capita), and around a fourth of China’s at 6.67 tCO₂/capita in the same year. The Government of India is working to combat climate change while sustaining rapid development and providing energy for cities and villages. Despite significantly improved electrification levels over the last decade, providing reliable electricity supply to the millions of households in India remains a challenge.

To build a low-carbon future and curb climate change, the Indian government has committed to deploying expansive solar and wind energy capacity and adopting an array of ambitious climate actions. As a result, the country has made good progress towards meeting its Paris Agreement targets. India’s non-fossil fuel electricity capacity, which includes renewables, large hydro, and nuclear, was 38 percent of its total installed electricity mix, as of September 2019. Of this, the share of installed renewables alone (grid-connected solar, wind, small hydro, biomass, and waste-to-energy) is 23 percent.

India’s emission intensity has reduced by 21% over the period 2005-2014. India’s emission intensity reduction by 2030 is projected to be even lower – in the range of 35 to 50 percent. Thus, India is on track to not only achieve but likely exceed its 40 percent non-fossil fuel electricity capacity, and its targeted reduction in emission intensity of...
its GDP by 33 to 35 percent below 2005 levels by 2030. At the same time, India has more work to do on creating an “additional carbon sink” of 2.5 to 3 billion tons of CO₂ equivalent through additional forest and tree cover by 2030.11

To further affirm its commitment to safeguarding the environment, India is implementing a comprehensive India Cooling Action Plan (ICAP), released in early 2019. The ICAP marks a key milestone in India’s effort to provide climate friendly, energy efficient, and affordable cooling for all. The plan links the problem of ozone depleting refrigerants used in cooling with climate change and aims to integrate energy efficient solutions while meeting India’s rapidly rising cooling demand.12

INDIA’S CLIMATE PLEDGE

India ratified the Paris Agreement on 2nd October 2016.13 The agreement is based on a framework of climate pledges, or NDCs, from individual countries that outline domestic plans to reduce GHG emissions by 2030, or by 2025 for some countries.

India’s pledge lays out a comprehensive approach to limit climate impacts while fostering economic growth, increasing energy access, creating jobs, protecting biodiversity, building resilience in communities to climate impacts, and providing cleaner air and water for its citizens. India’s pledge includes the following commitments:14

- 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 path that is climate-friendly and cleaner than the one followed hitherto by others at a corresponding level of economic development.
- To reduce the emissions intensity of its GDP by 33 to 35 percent by 2030 from 2005 levels.

FIGURE 1 India’s Historical, Current, and Projected Future Emissions; and emission reduction pledges

Source: Climate Action Tracker, 201915
• To achieve about 40 percent cumulative electric power installed capacity from non-fossil-fuel energy resources by 2030 with the help of technology transfer and low-cost international finance, including support from the Green Climate Fund.

• To create an additional carbon sink of 2.5 to 3 billion tons of carbon dioxide equivalent through additional forest and tree cover by 2030.

• To better adapt to climate change by enhancing investments in development programs in sectors vulnerable to climate change, particularly agriculture, water resources, the Himalayan region, coastal regions, health, and disaster management.

• To mobilize domestic funds and new or additional funds from developed countries to implement the above mitigation and adaptation actions, in view of the resources required and the resource gap.

• To build capacities and create domestic and international frameworks for quick diffusion of cutting-edge climate technology in India and for collaborative research and development for future technologies.

India's NDC is one of the few rated by the Climate Action Tracker as compatible with limiting temperature rise to below 2 degrees Celsius.16

CLIMATE MITIGATION POLICY

Renewable Energy

Renewable energy is the centerpiece of India’s strategy to meet its Paris goals. Domestically, India aims to install 175 gigawatts (GW) of renewable energy (100 GW solar, 60 GW wind, and 15 GW biomass and small-hydro) by 2022. Additionally, achieving the 175 GW goal could create up to 1 million job opportunities for over 300,000 workers in the country by 2022.17 To develop a skilled workforce and meet the needs of the renewable industry, the Government of India established the Skills Council for Green Jobs (SCGJ) under the National Skill Development Mission in 2015.

As of September 2019, India is about halfway toward meeting its 175 GW by 2022 goal with renewables capacity reaching 82.6 GW, representing nearly 23 percent of India’s total installed capacity.18 Between April 2018 and March 2019, India added about 9.3 GW of renewable energy capacity to the grid. This is more than installed coal-fired and hydro capacity added (totaling 5.9 GW) during the same period.19 Investments in renewables in 2018 also exceeded those for fossil-fuel-based power generation.20

Currently, around 31.1 GW of renewable capacity is under various stages of construction, and another 39 GW, likely to be installed by 2021, is in the bidding stage.21 The sum of renewable energy currently installed, in the pipeline, and in the bidding stage is approximately 152.7 GW by 2021, relative to India’s 2022 NDC target of 175 GW. In September 2019, at the United Nations Climate Action Summit, Prime Minister Modi announced a further scale-up in India’s domestic renewable energy target to 450 GW, likely by 2030. This target is over five times India’s current installed renewables capacity and more than India’s total grid-size in 2019 (362 GW).22

Solar Energy

India’s solar energy capacity increased dramatically from 2.6 GW in 2014 to 31.1 GW by September 2019, with over half of this capacity added between April 2017 and September 2019.23 The flagship National Solar Mission, which originally aimed to install 20 GW of solar power capacity by 2022, now targets 100 GW of solar by 2022.24 The 450 GW of renewables goal announced by the Prime Minister of India suggests an even higher share of solar in the future. Although these goals are ambitious, future solar energy growth far beyond them is possible, given India’s 750 GW of solar energy potential.25

Tariffs for solar projects reached record-lows again in 2018.26 The lowest tariff was ₹2.44 ($0.04) per kilowatt-hour (kWh) quoted for Bhadla Phase-III solar park auction in Rajasthan, which is lower than the average coal-based electricity rate of about ₹3.4 ($0.05).27 However, the solar sector has faced some challenges – safeguard duties on solar panels leading to an increase in tariffs, land availability issues, slow development of power evacuation infrastructure, uncertainty of power purchase agreements, outstanding dues from distribution companies, and low ceilings on solar tenders. A slowdown in India’s expected power demand has also affected solar industry. These issues are dampening market progress.28 The central and state governments are addressing some of these issues, but more needs to be done to get the market back on track.29

While large-scale solar is growing steadily, grid-interactive rooftop solar installations are lagging behind – reaching around 3.8 GW of the total 40 GW target.30 To scale clean energy, especially for underserved markets and emerging technologies, such as battery storage, a strong rooftop solar policy framework needs to be adopted.31

Wind Energy

India is the world’s fourth-largest wind energy market, with nearly 37 GW of installed capacity by September 2019, representing about 10 percent of its total installed power capacity.32 India plans to install 60 GW of utility-scale wind power and 1 GW of off-shore wind power by 2022. Capacity
growth in the wind sector slowed from 5.4 GW in 2017 to 1.7 GW in 2018 and 1.5 GW in 2019. The wind sector has struggled with changes in policy from feed-in tariffs (FiT) to reverse auctions with tariff caps. This resulted in unsustainably low tariffs. But the sector is recovering – 13.3 GW of bids awarded in 2019 are likely to come online by March 2022. The government plans to auction another 15 GW between 2020 and 2021 bringing the total to 64 GW of planned wind capacity by 2022.34

Energy Access and the Power Sector

In 2011, around 70 percent of India’s population primarily relied on tradition biomass for their cooking needs.35 To improve access to cleaner cooking sources and reduce exposure to harmful indoor air pollutants, the Pradhan Mantri Ujwala Yojana, a flagship program of the government, aims to provide 80 million liquefied petroleum gas (LPG) connections to women from low-income households by 2019. As of September 2019, this target was met and surpassed by over nearly 340,000 more connections.36 However, many low-income households are unable to refill their LPG cylinders regularly, and return to primarily using traditional cooking energy options such as biomass.37 Concentrated efforts on enabling affordability of LPG refills, and improving service delivery will be important in ensuring that households do not revert to using biomass for cooking.38

To expand electricity access, Prime Minister Modi launched the Saubhagya Yojana, a 163 billion ($2.5 billion) program that aims to electrify all households by December 2018.39 According to government estimates, as of October 2019, India achieved nearly 100 percent household electrification. Around 18,000 households, all in the state of Chhattisgarh in hard-to-access areas, are yet to be electrified.40 Yet, providing reliable, affordable, quality, and continuous electricity supply remains a significant challenge.41

The Government launched a flagship scheme in 2018 – Pradhan Mantri Kisan Urja Suraksha evam Utthaan Mahabhiyan (PM-KUSUM) – with the aim of promoting solar-based irrigation for agriculture and boosting farmer incomes. To achieve this goal, the scheme aims to promote around 10 GW of ground mounted grid-connected decentralized renewable energy plants by 2022. In addition, it aims to enable install over 1.75 million standalone and around 1 million grid-connect solar powered agriculture pumps. If the targets of the scheme are met, 25.7 GW of solar capacity can be added by 2022.42 Currently, there are approximately 30 million irrigation pumps used in India – 70 percent are electrical, and the rest are powered by diesel. To improve the financial health of nearly bankrupt distribution companies (DISCOMs), Ujjwala DISCOM Assurance Yojana (UDAY) program, launched in 2015, works with state governments to cover up to 75 percent of DISCOM debt and pay back lenders, and improve technical efficiencies.43 The scheme has made progress in 21 states on reducing Aggregate Technical & Commercial Loss (AT&C) by 22 percent. According to the Ministry of Power, the scheme has also revised tariff rates for 25 states and UTs.44 Additionally, billing and collection efficiencies have risen over 85 percent.45 However, payments owed by DISCOMs to generation companies have increased. DISCOM debts are once again on the rise, and a market report suggests, may reach pre-UDAY levels.46 As India seeks to enhance electricity access, electricity tariff reforms and policy measures are required, both at the central and state levels, to strengthen the health of the distribution and generating companies.

Building an Energy Efficient Economy

Currently, India has the second largest urban population in the world currently. This is expected to grow to twice its current size by 2050, adding 416 million people. The move to already resource-stressed urban areas by 2050 will trigger extraordinary growth in energy-intensive construction and infrastructure.47 But this urbanization also presents a tremendous opportunity for energy efficiency.

India has created and implemented a National Mission for Enhanced Energy Efficiency (NMEEE), which encompasses a variety of programs designed to improve efficiency across all sectors of energy use. The NMEEE is delivering savings of millions of tons of fuel and conserving gigawatts of energy while reducing greenhouse gas emissions.48 The Perform Achieve Trade (PAT) scheme to improve energy efficiency in industries under the NMEEE resulted in avoided emissions of 31 million tons of CO₂ in phase one of implementation between 2012 and 2015. Phase two is expected to avoid another 60 million tons between 2016-19, this is around 4 percent of India’s overall emissions.49 Three more phases of the PAT Cycles with overlapping years of implementation are planned till 2022.50

Green Buildings

Residential and commercial buildings in India account for nearly 30 percent of total electricity consumption and this is expected to increase to 48 percent by 2042.51 One major opportunity for energy efficiency expansion in India involves new building construction. In 2017, Bureau of Energy Efficiency extensively reviewed and updated the 2007 Energy Conservation Building Code (ECBC). The updated 2017 code is scheduled to be added as an amendment to the Energy Conservation Act.52
India ranks third in the world for Leadership in Energy and Environmental Design (LEED)-certified buildings, with almost 900 projects certified overall. If states across India adopt energy-saving building codes and leading developers go beyond minimum code requirements for commercial buildings, an estimated 3,453 terawatt-hours of electricity could be saved cumulatively by 2030. This is the equivalent of powering as many as 358 million Indian homes annually between 2014 and 2030.

**Green Appliances**

India has also made significant progress on energy-efficient appliances. BEE’s Standards and Labeling program for equipment and appliances was initiated in 2006. It comprises both mandatory and voluntary schemes. Ten appliances fall under the mandatory scheme including refrigerators, air conditioners, tube lights, color televisions and electric geysers. Looking ahead, ensuring widespread awareness and access to these appliances will essential for driving energy-efficiency savings. India successfully implemented one of the largest light-bulb replacement programs in the world, which replaced inefficient incandescent lamps with over 350 million LED lights by 2019, mitigating around 37 million tons of carbon dioxide annually. This program was implemented by Energy Efficiency Services Limited (EESL), a public sector company.

Improving the efficiency of space cooling systems is especially important because their use is expected to grow dramatically in the coming decades, and cooling systems both consume significant amounts of energy and use highly potent climate-damaging hydrofluorocarbons (HFCs). Building on the success of LED lights program, EESL launched a Super-Efficient Air Conditioning (ACs) Program. A pilot program, lasting one year and targeting 2.5 million residential and institutional customers in South and West Delhi was launched in early 2019. If successful, the program can reduce peak electricity demand by 22 MW. These air conditioners are reported to be 40 percent more efficient than the current 3-star air conditioners offered in the market. EESL aims to sell 250,000 super-efficient ACs in two phases through a joint venture under the Ministry of Power.

India’s Cooling Action Plan prioritizes efficient, climate-friendly, and affordable cooling for all. The plan brought together cooling experts and stakeholders to formulate a national cooling framework setting ambitious goals in key areas of cooling demand. India was a key player in negotiating the Kigali amendment to the Montreal Protocol, and has committed to freeze HFC use at 2024 levels, starting reductions in 2028. In 2017, six of India’s largest air conditioner manufacturers announced plans to leapfrog from outdated R-410A refrigerants to more climate-friendly and lower-global warming potential refrigerants, such as R-32 and R-290.

More recently, several multi-national companies such as Daikin, Panasonic, Mitsubishi, Toshiba, Hitachi, Fujitsu and Sharp have started using R-32.

**Transportation Sector**

In 2018, India was the fourth-largest market in the world for passenger vehicle sales by volume. Automobile sales in India between April 2018 and March 2019—including passenger and commercial vehicles, three-wheelers, and two-wheelers—totalled around 26.2 million. However, access to motorized transport remains constrained for a large section of the population. Urbanization, growth in incomes, and rising aspirations are likely to propel this growth further.

To boost sustainable transport, the Indian Government is putting in place several policy measures. It has decided to leapfrog the current Bharat Stage (BS) IV vehicle emission standards straight to much cleaner BS VI (equivalent to Euro VI) emission standards by 2020. Vehicles that fail to meet the standards will not be sold after March 2020. Delhi was the first city to roll-out BS-VI petrol and diesel standards. In addition, fuel consumption standards came into force for passenger vehicles in India in April 2017. These standards are based on Corporate Average Fuel Efficiency (CAFE) system and require 18 percent improvement in fuel consumption of passenger vehicles by 2022 as compared to 2012. India’s draft Auto Fuel Policy 2018 advocates a roadmap to define corporate average CO2 efficiency targets for all passenger vehicle manufacturers from 2020 onwards.

Electric vehicles have garnered momentum in India backed by the Indian government’s ambition and support from the industry. Reducing air pollution in major cities and dependence on oil imports are important drivers for India’s EV push. The National Electric Mobility Mission Plan 2020 was launched in 2013 to subsidize the cost and facilitate the sale of 6 to 7 million hybrid and electric vehicles over five years.

India launched the Faster Adoption and Manufacturing of (hybrid and) Electric vehicles (FAME) scheme in 2015 under the Department of Heavy Industries (DHI). Now in its second phase, FAME-II aims to expand shared and mobility...
in the country. FAME-II started in April 2019 and will be implemented over the next three years. Under the scheme, public transportation fleets, registered commercial vehicles for buses, four-wheelers and three-wheelers, and privately owned two-wheelers are eligible for the incentives. In addition, the scheme requires half of the vehicle parts to be locally sourced in India to boost local industry. $1.4 billion over three years are allocated for this scheme. Gujarat, Telangana, Uttar Pradesh, Rajasthan and Kerala are a few of the states that have already submitted proposals to the government to purchase electric buses under the FAME-II program.

Efforts are underway to strengthen the availability of charging infrastructure. In October 2019, the Ministry of Power issued revised guidelines and standards for electric vehicles charging infrastructure. These guidelines will support initial establishment of the charging infrastructure, with the eventual goal of creating a market for the electric vehicles charging business. In addition, the central government has also initiated the deployment of over 6,000 public charging points.

Further supporting sustainable mobility, battery powered three-wheeled e-rickshaws are fast gaining prominence in India. While the Indian government is developing a national-level program to accelerate electric vehicles, states and cities are taking a lead on electric mobility. As of June 2019, eight states have published their draft or final electric vehicle policies. 12 states have published tariffs for electric vehicle charging. Some states like Karnataka are aiming for 100 percent e-mobility by 2030.

Building mass transit systems across urban centers will further reduce emissions from the transportation sector. For example, Delhi’s mass-transit system serves around 2.6 million daily riders, reducing the number of vehicles on the streets and avoiding the associated emissions. Other major cities such as Chennai, Bengaluru, Gurgaon, Mumbai, Kochi, Hyderabad, Ahmedabad, Lucknow, Pune, Nagpur, Varanasi, Jaipur, and Kolkata are following Delhi’s lead to upgrade their metro rail networks.

MOBILIZING GREEN INVESTMENT

India needs around $80 billion in renewable energy infrastructure (without transmission lines) until 2022, and around $250 billion between 2023 and 2030 to meet its clean energy targets. Thus, India’s annual clean energy investment requirement for the next decade will equate to around $30 billion annually.

India is working to provide funding for clean energy through government programs, private investments, and international assistance. In addition, strategies such as increased user charges, tax collection and savings from local sources will prove to be important if sufficient capital is raised for green investments. For instance, India quadrupled the coal cess (tax), introduced in 2010, to approximately $6 per metric ton in 2016. A portion of this cess was allocated to a fund called National Clean Energy and Environment Fund (NCEF). The coal cess transferred over 860 billion (around $12 billion) between 2010 and 2018 to the NCEF. The fund has supported several clean energy projects in the country; but since July 2017, the government has used the NCEF funds and coal cess collections to compensate states for losses under India’s new Goods and Services Tax.

Catalytic finance is emerging as a major need to expand clean energy market. Catalytic finance leverages limited public funds to bring in greater private investment. India is exploring ways that this system can help foster low-carbon economic growth and development. The Indian Renewable Energy Development Agency Limited (IREDA), a leading financial institution, is planning to pilot one such catalytic finance solution – “Credit Enhancement Guarantee Scheme.” The scheme will help project developers raise capital through the bond market. Green Bonds can also be beneficial for long-term investments in India by reducing risks for investors. IREDA and National Thermal Power Corporation (NTPC) have used masala bonds to increase the number of green bonds in the market. By 2019, $7.15 billion of green bonds were issued in India, amounting to around 20 issuances overall. Apart from IREDA and NTPC, Greenko, Yes Bank, and the Indian Railway Finance Corporation have been integral to issuing green bonds.

However, securing finance is more challenging for near commercial technologies with few demonstrable projects, and small-scale renewable systems such as rooftop solar and off-grid renewables. For instance, cumulative investment in rooftop solar from 2013 to 2016 was only $600 million, much less than the needed $48 billion. Catalytic financial mechanisms and institutional facilities, such as clean energy finance dedicated teams called “green windows,” can be effective in transforming clean energy markets in the country. IREDA is designing a green window to drive private investments into such underserved clean energy market segments to help them grow.

STRENGTHENING CLIMATE RESILIENCE AND ADDRESSING AIR POLLUTION

Recognizing the growing threat of climate change, cities and states are developing resilience programs to expand disaster planning for extreme weather. For example, the city of Ahmedabad implemented its first-ever Heat Action Plan in
2013, providing an early warning and preparedness system to increase residents’ resilience to extreme heat events. Since then, more than 23 states and over 100 cities in India have followed suit.82

Climate solutions, such as cool roofs, are critical for protecting communities from extreme heat. Cool roofs also find a mention in the draft India Cooling Action Plan.83 In 2017, Hyderabad and Ahmedabad implemented cool roofs program pilots. Encouraged by the results, states of Telangana and Gujarat have planned to scale up the program. In 2019, Telangana developed a Draft Cool Roofs Program which is awaiting public comments.84 India’s National Adaptation Fund on Climate Change aims to support resilience activities in states that are particularly vulnerable to climate change impacts.85

Alarming air pollution levels continue to threaten public health in India. To protect communities, cities such as New Delhi, Mumbai, Pune, and Ahmedabad have adopted real-time air quality monitoring and alert systems.86 For instance, Ahmedabad implemented a voluntary Air Information and Response (AIR) Plan in 2017, which includes a school flags program that increases awareness among children about air quality.87 The AIR Plan is based on Indian Institute of Tropical Meteorology’s SAFAR program which provides the Air Quality Index (AQI) data. The plan aims to reduce exposure to air pollution and develop longer-term pollution reduction strategies.

The New Delhi government has also taken multiple steps during peak through the Graded Response Action Plan (GRAP). Some of the measures that come into effect based on the severity pollution include shutting down thermal power plants, freezing industrial activities reliant on fossil fuels, and stopping construction activities that leads to dust pollution. In January 2019, the Ministry of Environment, Forest, and Climate Change released the National Clean Air Program (NCAP) which aims to reduce particulate matter by 20-30 percent by 2024, compared to 2017 levels.88 Under the NCAP, cities are now also actively undertaking mitigation aimed at controlling the sources of emissions.

However, more needs to be done to reduce the health effects of exposure to air pollution.89 For instance, the NCAP needs to strengthen the legal provisions to ensure effective improvement in air quality. In addition, strengthening the regulatory framework governing air quality, bolstering capacities of regional regulatory bodies and urban local governments can help develop effective long-term solutions. Lastly, establishing intended health outcome-based targets as a part of city plans and increasing the number of air quality monitors covering high air pollution zones can reinforce action against air pollution.

**INTERNATIONAL ENGAGEMENT**

India laid strong foundations for greater international cooperation on climate action at the 21st Conference of the Parties (COP 21) in Paris. At COP 21, India and France launched the International Solar Alliance (ISA) that aims to mobilize more than $100 billion by 2030 toward promoting solar power globally.90 As of 2019, 81 countries have signed the ISA framework agreement, 59 of which have formally ratified, and more are set to join.91

India was critical in achieving the Kigali amendment to the Montreal Protocol to phase down HFCs, many of which have a per unit climate impact thousands of times greater than that of carbon dioxide.92 To support the construction of climate resilient infrastructure in countries, India launched an International Coalition for Disaster Resilient Infrastructure (CDRI) at the September 2019 Climate Action Summit in New York.93 India was also the co-lead for the “industry transition” track with Sweden at the September summit. Together with other countries and a group companies, India and Sweden launched the Leadership Group for Industry Transition to drive action forward in the hard-to-decarbonize and energy-intensive such as iron and steel, cement, and petrochemicals.94 India is also engaging in bilateral partnerships. For example, the US-India Clean Energy Finance Initiative aims to deploy up to $20 million in project preparation support and catalyze additional finance for distributed solar projects in the country.95

As a developing nation, India has to balance multiple, at times, conflicting, challenges of sustained economic growth, social development for millions of its people, and environmental and climate protection. While technical, financial, regulatory challenges exist, India has made significant progress in fulfilling its climate pledges. It continues to show the world that combating climate change is compatible with economic growth and raising standards of living.
ABOUT THE NATURAL RESOURCES DEFENSE COUNCIL (NRDC)

Since 1970, our lawyers, scientists, and other professionals have worked to protect the world’s natural resources, public health, and the environment. NRDC’s India Program on Climate Change and Clean Energy, launched in 2009, works with partners in India to advance a low-carbon, sustainable economy. For more information, visit www.nrdc.org and www.nrdc.org/india.

ABOUT THE ADMINISTRATIVE STAFF COLLEGE OF INDIA (ASCI)

Established in 1956 at the initiative of the government and the corporate sector, the Administrative Staff College of India (ASCI), Hyderabad, has pioneered post-experience management education in India. ASCI equips corporate managers, administrators, entrepreneurs and academicians with the skills to synthesize managerial theory and practice; and respond to the ever-increasing complexity of managerial issues confronting government, industrial enterprises and non-government organizations. For more information visit www.asci.org.in.

ABOUT THE COUNCIL ON ENERGY ENVIRONMENT AND WATER (CEEW)

The Council on Energy, Environment and Water (CEEW) is one of South Asia’s leading not-for-profit policy research institutions. The Council uses data, integrated analysis, and strategic outreach to explain – and change – the use, reuse, and misuse of resources. It prides itself on the independence of its high-quality research, develops partnerships with public and private institutions, and engages with wider public. In 2019, CEEW once again featured extensively across nine categories in the “2018 Global Go To Think Tank Index Report”. The Council has also been consistently ranked among the world’s top climate change think tanks. For more information visit www.ceew.org.

ABOUT INDIAN INSTITUTE OF PUBLIC HEALTH GANDHINAGAR (IIPHG)

IIPHG is India’s first Public Health University under IIPHG Act 2015 of the Government of Gujarat. IIPHG aims to strengthen the overall health system in the country through education, training, research, and advocacy/policy initiatives. It is engaged in various ‘Climate Action Initiatives’ in collaboration with national and international partners. For more information visit www.iiphg.edu.in.

ABOUT SELF-EMPLOYED WOMEN’S ASSOCIATION (SEWA)

SEWA is a trade union registered in 1972. It is an organisation of poor, self-employed women workers. These are women who earn a living through their own labour or small businesses. Constituting 93 percent of the labour force, these are workers of the unorganised sector. SEWA organises women to ensure that every family obtains full employment. By self-reliance we mean that women should be autonomous and self-reliant, individually and collectively, both economically and in terms of their decision-making ability. We follow the principles of satya (truth), ahimsa (non-violence), sarvadharma (integrating all faiths, all people) and khadi (propagation of local employment and self-reliance). For more information visit http://www.sewa.org.

ABOUT THE ENERGY AND RESOURCES INSTITUTE (TERI)

The Energy and Resources Institute (TERI) is a leading think tank dedicated to conducting research for sustainable development of India and the Global South. TERI was established in 1974 as an information centre on energy issues. However, over the following decades, it made a mark as a research institute, whose policy and technology solutions transformed people’s lives and the environment. TERI’s key focus lies in promoting: Clean energy, Water management, Pollution management, Sustainable agriculture, Climate resilience. For more information visit www.teriin.org.
Emissions intensity is the emission per unit of GDP.


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60 India Cooling Action Plan, supra note 12.


67 Ibid.


Other countries include Argentina, Finland, France, Germany, Ireland, Luxembourg, the Netherlands, South Korea and the UK; and a group of companies include Dalmia Cement, DSM, Heathrow Airport, UKAB, Mahindra Group, Royal Schiphol Group, Scania, SpiceJet, SSAB, ThyssenKrupp and Vattenfall, MoEFCC, Press Information Bureau, “New Leadership Group at Climate Action Summit to Drive Industry Transition to Low-Carbon Economy,” 24 September, 2019, https://pib.gov.in/newsite/PrintRelease.aspx?relid=193365 (30 November, 2019).


Highlighted Reports

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