INDIA: ADDRESSING CLIMATE CHANGE AND MOVING TOWARD A LOW-CARBON FUTURE

India is an emerging economic powerhouse and global leader. As one of the world's fastest-growing economies, with a 7 percent GDP growth rate, India is now the third largest energy consumer in the world. The Government of India is balancing the need for climate action with rapid development and providing energy for its urbanizing cities and rural villages, including 300 million people without access to modern electricity. To build a low-carbon future and curb climate change, the Indian government has committed to deploy expansive solar and wind energy and adopt a suite of ambitious climate actions. This fact sheet outlines India's plan of action to address climate change in the next 15 years.

INDIA'S CLIMATE TARGETS AND NATIONAL ACTION PLAN ON CLIMATE CHANGE

India committed to a 33 to 35 percent emissions intensity reduction target by 2030 ahead of the 2015 United Nations Framework Convention on Climate Change (UNFCCC) climate talks. Clean energy is the centerpiece of India's commitment.[1] India aims to install 175 gigawatts (GW) of renewable energy by 2022 and generate 40 percent of its power through non-fossil fuel sources by 2030. To mitigate the country's carbon footprint, India also plans to increase forest and tree cover to create an additional carbon sink of 2.5 to 3 billion tonnes of carbon dioxide (CO_2) equivalent by 2030. India is strengthening its comprehensive approach based on the National Action Plan on Climate Change, released in 2008, through its key missions on energy efficiency and solar energy.

CHARTING A BRIGHT CLEAN ENERGY FUTURE

In just four years, India's solar market has grown more than 200 fold to over 4 GW of installed solar energy in 2015.[2] India's flagship National Solar Mission, which originally aimed to install 20 GW of solar power capacity, is now targeting 100 GW of solar by 2022. India is already the world's fifth largest wind energy producer with 23 GW of installed capacity, and aims to install an additional 60 GW by 2022. To achieve the 175 GW clean energy target, the Modi government is actively seeking up to $100 billion in investments by 2022. India levies an innovative coal tax of ₹200 (approximately $3.06) per metric ton that feeds into the ₹17,000 crore ($2.6 billion) National Clean Energy Fund.

PROMOTING GREEN BUILDINGS AND EFFICIENCY STANDARDS

Indian cities are projected to increase by more than 400 million people by 2050, triggering extraordinary growth in energy-intensive construction and infrastructure. This rapid urbanization presents a tremendous opportunity for energy efficiency, especially in new construction. India ranks fourth in the world for Leadership in Energy and Environmental Design (LEED) certified buildings with 13.24 million, gross square meters of certified LEED space. To spur energy-saving building construction, the Bureau of Energy Efficiency (BEE) launched the Energy Conservation Building Code (ECBC) in 2007 and plans to make it mandatory nationally by 2017. As of 2015, eight states made the ECBC mandatory, and 15 more plan to follow, which will account for 90 percent of infrastructure development. Key ministries and cities are adopting green building programs that require Green Rating for Integrated Habitat Assessment (GRIHA) certification for new buildings. If states across India adopt energy-saving

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building codes and leading developers go beyond minimum code requirements for commercial buildings, an estimated 3,453 TWh of cumulative electricity could be saved by 2030, the equivalent of powering as many as 358 million Indian homes annually between 2014 and 2030.[3]

The Ministry of Power, through BEE, has established a mandatory efficiency star-rating system for refrigerators, air conditioners, tube-lights, and transformers, and a voluntary star-rating labeling system for more than a dozen other appliances. Looking ahead, stronger codes and standards for appliances will be essential to drive energy efficiency savings.

BUILDING AN ENERGY-EFFICIENT ECONOMY

The Government of India launched a "100 Smart Cities" program in June 2015 to apply IT-based solutions for sustainable urban development. The Ministry of Power also leads a successful Perform, Achieve, and Trade (PAT) program since 2012 to encourage energy-intensive industries in India, such as thermal coal power plants, cement and steel manufacturing, to become global efficiency leaders. The program could result in energy savings of 6.7 million tonnes of oil equivalent (equal to eliminating about 28 million tons of CO_2) through an energy efficiency cap and trade scheme.[4] BEE has indicated that the program, which currently covers 478 industrial facilities in eight energy intensive sectors, is likely to expand.

GOING PLACES: GREENER TRANSPORTATION

As India's automobile market skyrockets, stronger fuel efficiency standards are essential to reducing pollution and fighting climate change. The 2015 Corporate Average Fuel Consumption standards require that passenger vehicles improve mileage by 15 percent by 2022. In addition, in 2015, India released the Auto Fuel Vision and Policy 2025 to increase fuel quality and reduce vehicular emissions by 2025.[5] 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 the next five years. New Delhi's mass rapid transit system supports 2.6 million daily riders, and Mumbai, Bengaluru, Chennai, Hyderabad, and other major cities are following suit.

STRENGTHENING CLIMATE RESILIENCE

Several extreme weather events fueled by climate change hit India particularly hard in 2015, including lethal heat waves, erratic monsoon, drought and severe flooding, resulting in widespread deaths and economic losses. Recognizing the growing threat of climate change, resilience programs to expand disaster planning for extreme weather are on the rise. The city of Ahmedabad, for example, implemented its first-ever Heat Action Plan in 2013, providing an early warning and preparedness system to increase residents' resilience to extreme heat events.[6] Following the devastating May 2015 heat wave that resulted in 2,300 deaths, city and state governments across the country are adopting similar heat adaptation plans. A new National Adaptation Fund on Climate Change aims to support resilience activities in states that are particularly vulnerable to climate change impacts.[7]

BUILDING INTERNATIONAL CLIMATE COOPERATION

In addition to robust renewable energy targets and reducing energy intensity, India is prioritizing international cooperation on climate change. At the 2015 UNFCCC climate talks, India is setting ambitious and achievable commitments with a focus on equity, financial investments and technology transfer. In 2015, India also put forward a proposed amendment to the Montreal Protocol, joining the international community to phasedown hydrofluorocarbons (HFCs)—global warming gases with an impact thousands of times greater than carbon dioxide that are used in household appliances like air conditioners. India also participates in several bilateral programs to promote clean energy with key countries, including Germany, Japan, the United Kingdom, and the United States.

ABOUT THE NATURAL RESOURCES DEFENSE COUNCIL

The Natural Resources Defense Council (NRDC) is an international non-profit environmental organization with more than 2 million members and online activists. 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 Initiative on Climate Change and Clean Energy, launched in 2009, works with partners in India to help build a low-carbon, sustainable economy. For more information, visit www.nrdc.org and www.nrdc.org/international/india.

ABOUT THE COUNCIL ON ENERGY ENVIRONMENT AND WATER

The Council on Energy, Environment and Water (CEEW) is an independent nonprofit policy research institution that works to promote dialogue and common understanding on energy, environment, and water issues in India and elsewhere through high-quality research, partnerships with public and private institutions, and engagement with and outreach to the wider public. For more information, visit http://ceew.in.

ENDNOTES

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