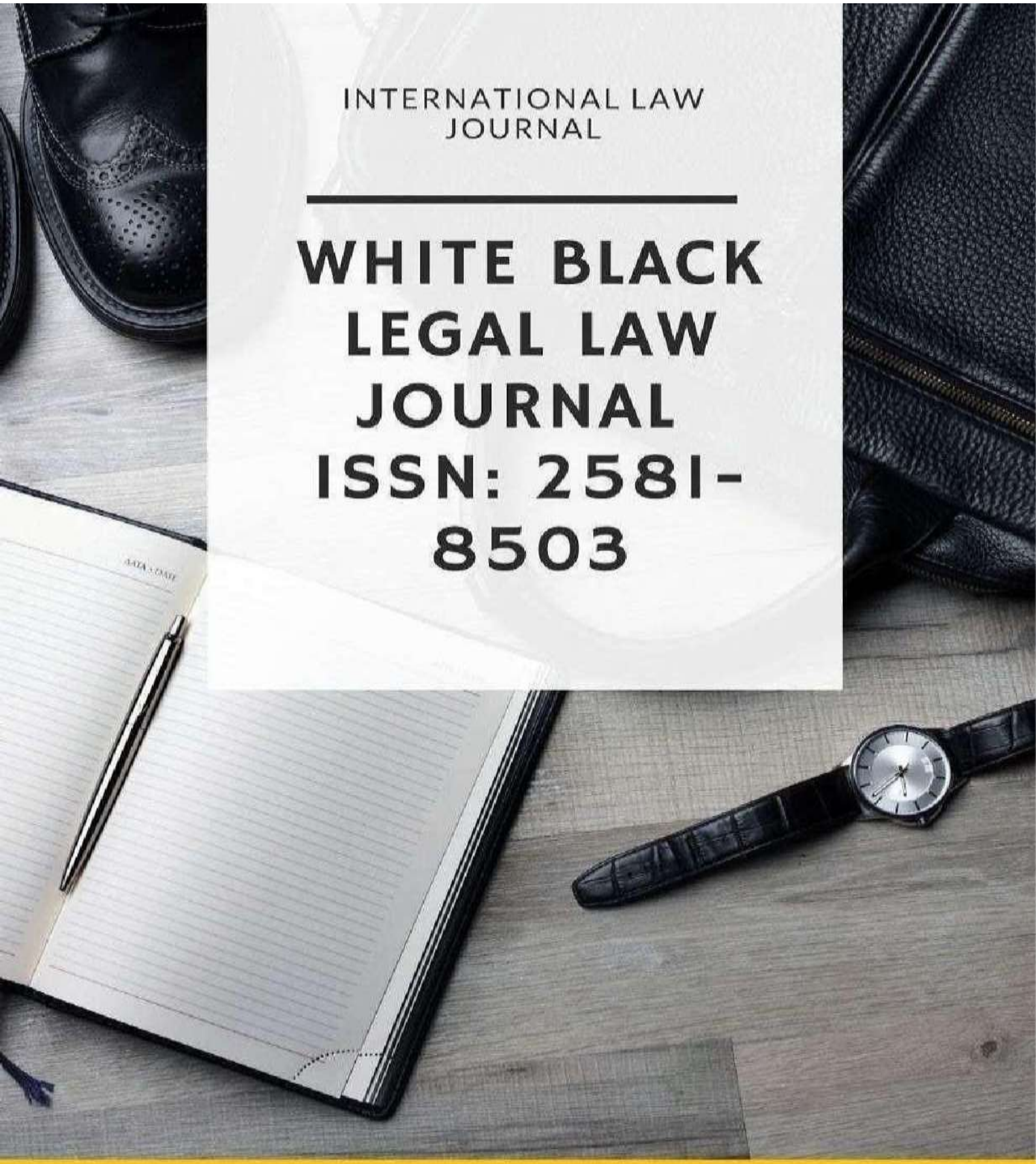

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With this thought, we hereby present to you

PARIS AGREEMENT AND INDIA'S ROLE IN CLIMATE CHANGE

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ABSTRACT

India is on track to reach its Paris Agreement goals of reducing emissions by 33 percent to 35 percent of GDP by 2030, compared to 2005 levels, and achieving 40 percent non-fossil fuel installed power capacity by 2030. With solar and wind energy at the forefront of India's climate targets, the country wants to install 175 gigawatts (GW) of renewable energy by 2022 and 450 GW by 2030, representing a 20 percent increase over the country's current power system capacity. India is halfway to attaining its goal of 175 GW by 2022, with renewables accounting for 88 GW, or 23.5 percent of the country's total installed capacity. Despite the economic crisis in COVID-19, India is committed to making its nationally defined contributions (NDC). The Paris Agreement and India's role in climate change are critically analyzed in this research.

Key words: ***Paris Agreement, India, Climate Change***

1. PARIS AGREEMENT

Parties to the UNFCCC signed a breakthrough agreement in Paris at COP 21 to battle climate change and accelerate and intensify the activities and investments required for a low-carbon future. The Paris Agreement builds on the Convention and, for the first time, binds all nations together in a common cause to make bold steps to prevent climate change and adapt to its consequences, with increased support for developing countries. As a result, it sets a new direction for the global climate effort.

The central goal of the Paris Agreement is to strengthen the global response to the threat of climate change by limiting global temperature rise this century to well below 2 degrees Celsius above pre-industrial levels and pursuing efforts to limit temperature rise even further to 1.5 degrees Celsius. In addition, the agreement intends to improve countries' ability to deal with the effects of climate change.

Appropriate financial flows, a new technology framework, and expanded capacity building frameworks will be put in place to achieve these lofty goals, allowing developing countries and the most vulnerable countries to pursue their own national ambitions. Through a more rigorous transparency structure, the Agreement also provides for increased action and support transparency.

All Parties to the Paris Agreement are required to make their best efforts through "nationally determined contributions" (NDCs) and to strengthen these efforts in the years ahead, according to the Paris Agreement. This includes obligations that all Parties report on their emissions and implementation activities on a regular basis. Every five years, a global stocktake will be conducted to review collective progress toward the agreement's goal and to inform future individual actions by Parties.

2. INDIA'S COMPLIANCE ON PARIS AGREEMENT

India is a rising economic giant and a global leader. India is one of the world's fastest-growing economies, with annual GDP growth of 6 to 7% predicted through at least 2030, and is presently the world's third-largest energy consumer and GHG emitter, despite low per capita and historical emissions.[1] The Indian government is attempting to mitigate climate change while maintaining rapid development and supplying energy to cities and villages, including nearly 200 million people who do not have access to modern electricity.[2]

The Indian government is committed to building a low-carbon future and combating climate change by deploying large amounts of solar and wind energy infrastructure and implementing a number of ambitious climate policies. India is on course to meet, if not exceed, the Paris climate goals.[3] In 2017, India announced the cancellation of 13.7 GW of planned coal plants, a 21.7 percent reduction in coal imports, and a commitment to not build any new units until at least 2026.[4] Meanwhile, solar and wind energy prices are at all-time lows, putting them in direct competition with fossil fuel prices.

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[1] Organisation for Economic Co-operation and Development, GDP Long-Term Forecast, https://data.oecd.org/gdp/gdp-long-term-forecast.htm (September 29, 2017).

[2] International Energy Agency, WEO 2015 Electricity Access Database, (October 24, 2016). http://www.worldenergyoutlook.org/media/weowebsite/2015/

[3] Niklas Hohne et al., "Action by China and India Slows Emissions Growth, President Trump's Policies Likely to Cause US Emissions to Flatten," (Climate Analytics, Ecofys, New Climate Institute, 2017).

[4] Central Electricity Authority, Minister of Power, Government of India, Draft National Electricity Plan (Volume I) Generation, http://www.cea.nic.in/reports/committee/nep/nep_dec.pdf (October 27, 2017),

India formally ratified the Paris Agreement on October 2, 2016, and it entered into force on November 4, 2016.[5] Individual nations' climate promises, known as Nationally Determined Contributions (NDCs), are included in the agreement, which detail domestic plans to cut GHG emissions after 2020. India's pledge lays out a comprehensive strategy for mitigating the worst effects of climate change while fostering economic growth, expanding energy access, creating jobs, protecting biodiversity, increasing community resilience to climate impacts, and providing cleaner air and water to its citizens. The following commitments are included in India's pledge:[6]

- To promote and spread a healthy and sustainable way of life based on conservation and moderation traditions and values.
- To take a path that is more climate-friendly and cleaner than that taken by others at a similar degree of economic development.
- By 2030, the emissions intensity of its GDP will be reduced by 33 to 35 percent compared to 2005 levels.[7]
- Thanks to technological transfer and low-cost international finance, including support from the Green Climate Fund, non-fossil-fuel energy resources will account for roughly 40% of total installed capacity by 2030.
- By 2030, an additional carbon sink of 2.5 to 3 billion tonnes of CO2 equivalent will be created through increased forest and tree cover.
- To improve climate change adaptation by increasing investments in development initiatives in climate-vulnerable sectors, such as agriculture, water resources, the Himalayan area, coastal regions, health, and disaster management.
- In light of the resources required and the resource gap, mobilise domestic funds as well as new or additional money from developed nations to conduct the above mitigation and adaptation initiatives.
- To strengthen capacities and establish local and international frameworks for the rapid adoption of cutting-edge climate technology in India, as well as joint research and development for future technologies.

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[5] United Nations Framework Convention on Climate Change, Paris Agreement – Status of Ratification, http://unfchttp://unfccc.int/paris_agreement/items/9444.phpcc.int/paris_agreement/items/9444.php (September 29, 2017).

[6] Government of India, India's Intended Nationally Determined Contribution: Working Towards Climate Justice, (UNFCCC.int, 2015). http://www4.unfccc.int/submissions/INDC/Published%20Documents/India/1/INDIA%20INDC%20TO%20UNFCCC.pdf.

[7] Emissions intensity is the emission per unit of GDP.

3. INDIA'S CLIMATE MITIGATION POLICY

Energy from renewable sources India's approach for meeting its Paris goals revolves around renewable energy.[8] By 2022, India hopes to have 175 GW of renewable energy installed (100 GW solar, 60 GW wind, and 15 GW biogas). India expanded its renewable energy capacity by 11.3 GW in just one year, from 2016 to 2017.[9] India is making significant progress in developing strong policies supporting both wind and solar energy, which could result in up to 1 million job opportunities for over 300,000 workers by 2022, primarily for semiskilled and unskilled workers during the construction and operation phases of projects.[10]

India's solar energy market is quickly developing, and the Kurnool Ultra Mega Solar Park in Andhra Pradesh boasts the world's largest solar park, with a 1,000 megawatt (MW) capacity.[11] More than 13 GW of solar capacity had been installed nationwide as of October 2017, with more than 8 GW installed in just the last two years.[12] India's flagship National Solar Mission, which had set a goal of installing 20 GW of solar generating capacity by 2022, is now aiming for 100 GW. Although these targets are lofty, given India's solar energy potential of 750 GW, future solar energy growth well beyond them is possible.[13] Because India's entire energy use in 2017 was only about 330 GW, if fully harnessed, the sun could offer enough energy to power the country more than twice. Solar power prices in India achieved a new low in 2016, with utility-scale solar falling below $3.00 (about $0.04 USD) per kilowatt-hour (kWh), undercutting fossil fuels. Because of favourable national and state legislation, lower-cost solar cell imports from China, and specialised financing packages for creditworthy companies, prices have plummeted.

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[8] Government of India, India's Intended Nationally Determined Contribution: Working Towards Climate Justice, (UNFCCC.int, 2015). www4.unfccc.int/submissions/INDC/Published Documents/India/1/INDIA INDC TO UNFCCC.pdf.

[9] Bridge to India, Renewable Capacity Addition Catches Up With Thermal Power in India, http://www.bridgetoindia.com/renewable-capacity-addition-catchesthermal-power-india/ (October 20, 2017).

[10] Natural Resources Defense Council et al., Greening India's Workforce: Gearing up for Expansion of Solar and Wind Power in India (2017). https://www.nrdc.org/sites/default/files/greening-india-workforce.pdf.

[11] Andhra Pradesh Solar Power Corporation Pvt. Ltd., Kurnool Ultra Mega Solar Park (1000 MW) World's Largest Solar Park – A Boon for Clean Energy (2017) and V Rishi Kumar, "AP Makes Rapid Strides: 1 GW Ultra Mega Solar Park Nearing Completion in Kurnool," The Hindu Business Line, April 28, 2017

[12] Ministry of New and Renewable Energy, Government of India, Physical Progress (Achievements) – Tentative State-wise Break-up of Renewable Power Target To Be Achieved by the Year 2022 , http://mnre.gov.in/mission-and-vision-2/achievements/ (September 29, 2017).

[13] India Environment Portal, State Wise Estimated Solar Power Potential in the Country, 2014, http://www.indiaenvironmentportal.org.in/content/403483/state-wiseestimated-solar-power-potential-in-the-country/ and Clean Technica, India's Solar Power Potential Estimated at 750 GW, https://cleantechnica.com/2014/11/29/indiassolar-power-potential-estimated-750-gw/ (September 29, 2017).

India's wind energy industry is also thriving, helping the country transition to a low-carbon future. With 32 GW of installed capacity, India is now the world's fourth-largest wind energy generator, accounting for around 10% of the country's total installed power capacity.[14] By 2022, India intends to install 60 GW of utility-scale wind energy and 1 GW of distributed wind energy. India added a record 5.4 GW of wind power in 2016-2017, far above its yearly target of 4 GW.[15] As of October 2017, wind rates had reduced to Rs. 3.42 (about $0.04 USD) per kWh.

However, some fields of renewable energy have received insufficient attention. While large-scale solar and wind sectors are booming, many clean-energy markets are still in their infancy. Rooftop solar installations are considerably behind the national objective, with only 1 GW out of a total of 40 GW installed.[16] Off-grid microgrids for village applications, as well as battery storage, energy-efficiency projects, and electric vehicles, are all underserved areas.

Prime Minister Narendra Modi announced in 2017 the Pradhan Mantri Sahaj Bijli Har Ghar Yojana, also known as the Saubhagya Yojna, a Rs. 163 billion ($2.5 billion USD) programme aimed at electrifying all Indian houses by December 2018, just before the next general election. The Rural Electrification Corporation will run the programme, which will cover roughly 30 million houses and give free electricity connections to low-income families, as well as solar packs and LEDs for isolated villages that aren't linked to the grid.[17] The 2015 Ujwal DISCOM Assurance Yojana (UDAY) initiative works with state governments to cover more than 75 percent of DISCOM debt and repay lenders by selling bonds to enhance the financial health of virtually insolvent distribution firms (DISCOMs).

3.1 ENERGY EFFICIENCY

[14] Central Electricity Authority, Government of India, All India Installed Capacity (in MW) of Power Stations, http://cea.nic.in/reports/monthly/installedcapacity/2017/installed_capacity-07.pdf (September 29, 2017).
[15] Bridge to India, Renewable Capacity Addition Catches Up With Thermal Power in India, http://www.bridgetoindia.com/renewable-capacity-additioncatches-thermal-power-india/ (October 20, 2017) and LiveMint, India Adds Record 5,400 MW Wind Power in 2016-17, http://www.livemint.com/Industry/MR7TsTomt2C9Si1NriNsyM/India-adds-record-5400MW-wind-power-in-201617.html (September 29, 2017).
[16] Bridge to India, India Solar Rooftop Map 2017 – March 2017, http://www.bridgetoindia.com/reports/india-solar-rooftop-map-march-2017-edition/ and LiveMint, India's Rooftop Solar Capacity Crosses 1 GW: Bridge to India Report, http://www.livemint.com/Industry/WfP1ivSfV4uSM4fAoit8XN/Indias-rooftop-solar-capacitycrosses-1-GW-Bridge-To-India.html (September 29, 2017).
[17] PM India, Government of India, PM Launches Pradhan Mantri Saubhagya Yojana; Dedicates Deendayal Urja Bhavan to the Nation, http://www.pmindia.gov.in/en/news_updates/pm-launches-pradhan-mantri-saubhagya-yojana-dedicates-deendayal-urja-bhawan-to-the-nation/ (September 29, 2017)

By 2050, India expects 400 million more people to migrate to already resource-scarce urban regions, causing a surge in energy-intensive development and infrastructure.[18] This growing urbanisation creates a huge opportunity for energy conservation. India has established and implemented the National Mission for Enhanced Energy Efficiency (NMEEE), which includes a number of projects aimed at increasing energy efficiency in all sectors. The NMEEE is cutting greenhouse gas emissions while saving millions of tonnes of fuel and conserving gigawatts of energy.[19] Between 2012 and 2015, the NMEEE's Perform Achieve Trade scheme to enhance energy efficiency in industries resulted in a reduction of 8.67 million tonnes of oil equivalent.[20]

3.2 GREEN BUILDINGS

In India, new building development is a huge opportunity for increasing energy efficiency. In 2007, the Bureau of Energy Efficiency (BEE) created the Energy Conservation Building Code (ECBC) to encourage energy-efficient building development. BEE undertook a thorough assessment and updating of the code in 2017, resulting in ECBC-2017, which is set to be adopted as an amendment to the Energy Conservation Act in 2018.[21] The ECBC is being incorporated into state and city regulations in many Indian states. Andhra Pradesh and Telangana, two of the most populous states in India, are developing online compliance systems for commercial structures. Eight states had made the ECBC mandatory as of 2015, with 15 more planning to do so in the near future, accounting for 90 percent of infrastructure construction.

With almost 15 million square metres of LEED-certified space, India is ranked third in the world for LEED-certified buildings.

Green building schemes requiring Green Rating for Integrated Habitat Assessment (GRIHA) certification for new buildings have been adopted by 23 key ministries and cities.[22] By 2030, an estimated 3,453 terawatt-hours (TWhs) of cumulative electricity might be saved if states across

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[18] United Nations, World Urbanization Prospects, 2014 Revision (New York, 2014). http://esa.un.org/unpd/wup/Highlights/WUP2014-Highlights.pdf (November 14, 2014).

[19] Ministry of Environment, Forests and Climate Change, Government of India, India's Progress in Combating Climate Change: Briefing Paper for UNFCCC COP 20 Lima, Peru (2014). http://envfor.nic.in/sites/default/files/press-releases/Indian_Country_Paper_Low_Res.pdf.

[20] Bureau of Energy Efficiency, Government of India, PAT Cycle, https://beeindia.gov.in/content/pat-cycle (September 29, 2017).

[21] Press Information Bureau, Government of India, Shri Piyush Goyal launches Energy Conservation Building Code 2017, http://pib.nic.in/newsite/PrintRelease.aspx?relid=165748 (September 29, 2017).

[22] U.S. Green Building Council, Infographic: Top 10 Countries for LEED in 2016, https://www.usgbc.org/articles/infographic-top-10-countries-leed-2016 (September 29, 2017).

India implement energy-saving building rules and leading developers go beyond basic code requirements for commercial buildings. Between 2014 and 2030, this is the equivalent of powering up to 358 million Indian households.[23]

3.3 GREEN APPLIANCES

India has also achieved considerable strides in the area of energy-saving appliances. The Ministry of Power has implemented an obligatory efficiency star-rating system for refrigerators, air conditioners, tube lights, and transformers, as well as a voluntary star-rating labelling scheme for over a dozen more equipment, thanks to the BEE.[24] Stronger appliance rules and standards will be required in the future to drive energy-efficiency savings. Air cooling system efficiency must be improved because their use is predicted to increase rapidly in the future decades, and air cooling systems waste a significant amount of energy and generate very potent climate-damaging HFCs. In the near future, India will focus on improving air cooling efficiency and replacing HFCs with more environmentally friendly alternatives.

India completed one of the world's largest lightbulb replacement programmes, replacing 3.4 million inefficient incandescent bulbs with LEDs by 2017. From 2015 to 2017, the ongoing UJALA LED programme, managed by Electricity Efficiency Services Limited (EESL), has saved about 34,500 million kWhs of energy and offset 27 million tonnes of CO2.[25] Building on its success, EESL has developed a demand aggregation initiative for air conditioners, which has the potential to significantly lower the cost of high-efficiency air conditioner models for customers.

India was a significant negotiator in the Kigali amendment to the Montreal Protocol, and it has agreed to freeze HFC use in 2024, with reductions beginning in 2028. Six of India's top air conditioner manufacturers recently announced plans to switch from outmoded R-410A refrigerants to more environmentally friendly R-32 and R-290 refrigerants with reduced global warming potential.[26] The Indian government has also stated that a National Cooling Action Plan will be developed. The goal of the plan is to bring together specialists from the cooling, energy

[23] Administrative Staff College of India and Natural Resources Defense Council, Building Efficient Cities: Strengthening the Indian Real Estate Market Through Codes and Incentives (2014). http://www.nrdc.org/international/india/files/real-estate-efficiency-codes-IB.pdf.

[24] Ministry of Power, Government of India, Standards and Labelling Programme, http://powermin.nic.in/en/content/energy-efficiency (August 23, 2012).

[25] Ministry of Power, Government of India, National UJALA Dashboard, http://www.ujala.gov.in/ (September 29, 2017).

[26] Press Information Bureau, Government of India, Environment Minister Launches Stage II of India's HCFC Phase Out Management Plan (HPMP), http://pib.nic.in/newsite/PrintRelease.aspx?relid=158868 (October 20, 2017).

efficiency, and alternative refrigerants (low- and zero-GWP) industries, as well as important stakeholders, to develop a national cooling framework. The Smart Communities Goal, which was established in June 2015, has identified over 90 cities that have began implementing sustainable and smart development projects, with more than $10 billion (about $152 million USD) invested to the mission. [27]

3.4 TRANSPORTATION SECTOR

By 2020, the Indian government plans to move from the more polluting BS IV car emission regulations to the more environmentally friendly BS VI (equal to Euro VI emission standards). The tougher regulations are intended to combat air pollution and address the rapidly growing vehicle market. Passenger vehicles must improve their fuel mileage by 15% by 2022, according to the 2015 Corporate Average Fuel Consumption requirements. In addition to tougher car emissions rules, India announced the Auto Fuel Vision and Policy 2025, which aims to improve fuel quality and cut emissions by 2025.[28]

India set an ambitious but encouraging goal of selling solely electric automobiles by 2030 in 2017. In 2013, the National Electric Mobility Mission Plan 2020 was announced, with the goal of subsidising the cost and facilitating the sale of 6 to 7 million hybrid and electric vehicles in the next five years. The construction of mass transit systems in urban areas will also aid in the reduction of emissions from the transportation sector. New Delhi's mass-transit system, for example, serves 2.6 million daily users, lowering the number of vehicles on the road and eliminating the emissions that come with them.[29] Other large cities are following New Delhi's lead, with metro rail systems being built in Chennai, Bengaluru, Gurgaon, Mumbai, Kochi, Hyderabad, Ahmedabad, Lucknow, Pune, Nagpur, and Jaipur. Kolkata's current rail network has been modernised.[30]

3.5 GREEN INVESTMENT MOBILIZATION

To get renewable energy to scale, India needs to attract domestic and foreign investment. The

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[27] Kumar V. Pratap, Financing of Smart Cities (Ministry of Urban Development, Government of India). http://smartcities.gov.in/upload/uploadfiles/files/Financing%20of%20Smart%20Cities.pdf.

[28] Ministry of Petroleum and Natural Gas, Government of India, Auto Fuel Policy, 2015, http://pib.nic.in/newsite/PrintRelease.aspx?relid=119754.

[29] Delhi Metro Rail Corporation, Delhi Metro's Cumulative Ridership for the Financial Year 2016-2017 Crosses One Billion, http://www.delhimetrorail.com/press_reldetails.aspx?id=ZlXC4jMrU00lld (September 29, 2017).

[30] Ministry of Housing and Urban Affairs, Government of India, Urban Transport Metro Rail Projects, http://moud.gov.in/cms/Urban-Transport-Metro-Rail-Projects.php (October 20, 2017)

expense of funding for large-scale renewables and the availability of capital for distributed renewables continue to be roadblocks to India's quick adoption of renewable energy. A substantial portion of India's 13 GW of installed solar power is concentrated on utility-scale plants. Specialized funds and risk-mitigation instruments are required to deepen and diversify the market. To meet India's solar, wind, and efficiency goals, more than $140 billion in financing will be required over the next six years.[31]

To meet India's 2030 Paris commitments, even more funding, $834 billion USD, is required.[32] The advent of affordable storage options, in addition to ramping up grid-connected solar and wind generation as well as village and rooftop applications, could ignite a transformational shift toward renewables. The Modi government is actively pursuing up to $100 billion in investments by 2022 to meet its 175 GW clean-energy ambition.[33]

Through government programmes, private investment, and foreign help, India is attempting to provide funding for renewable energy. A novel coal cess, or tax, was enacted in 2010 to fund and expedite the spread of clean energy. India has tripled the coal levy to around $6 per metric tonne in order to raise $4 billion for its National Clean Energy Fund each year (NCEF).[34] The NCEF's future is uncertain, as its money are expected to be used to compensate Indian states for losses incurred as a result of the country's new Goods and Services Tax or the cleanup of the Ganga River, but the NCEF has already invested billions of dollars in India's clean-energy projects.[35] The Indian Renewable Energy Development Agency Limited (IREDA), a leading Government of India firm for funding renewable energy projects, disbursed nearly $700 million in loans to clean-energy projects in 2015 and 2016, and expects to disburse $984 million in 2017. By 2024, it wants to increase its annual sanctions to $6.3 billion. In 2016, IREDA was responsible for roughly 10% of all domestic renewable energy project financing in India. The State Bank of India and the

[31] Vivek Sen et al., Reaching India's Renewable Energy Targets: The Role of Institutional Investors (Climate Policy Initiative, 2016). https://climatepolicyinitiative.org/wp-content/uploads/2016/11/Reaching-Indias-Renewable-Energy-Targets-The-Role-of-Institutional-Investors.pdf.

[32] Government of India, India's Intended Nationally Determined Contribution: Working Towards Climate Justice, (UNFCCC.int, 2015). http://www4.unfccc.int/submissions/INDC/Published%20Documents/India/1/INDIA%20INDC%20TO%20UNFCCC.pdf.

[33] Reuters staff, "India's Modi Raises Solar Investment Target to $100 bln by 2022," Reuters, 2 January 2015. www.reuters.com/article/2015/01/02/india-solaridUSL3N0UG13H20150102.

[34] Ministry of Finance, Key Features of Budget 2016-2017 (2016). http://indiabudget.nic.in/budget2016-2017/ub2016-17/bh/bh1.pdf

[35] Kumar Sambhav Shrivastava, "India Diverts Rs 56,700 Crore From the Fight Against Climate Change to Goods and Services Tax Regime," Scroll.in, 24 July 2017. https://scroll.in/article/844528/india-diverts-rs-56700-crore-from-the-fight-against-climate-change-to-goods-and-service-tax-regime (September 29, 2017).

International Development Finance Corporation (IDFC) have both lent to renewable energy projects. Small-scale renewable energy systems, such as rooftop solar and off-grid solar, face financial challenges. More debt and equity investments are needed in the market. From 2013 to 2016, only $600 million was invested in rooftop solar, far less than the required $48 billion.

Despite the programmes in place, public funding is still limited. To meet India's 175 GW renewable energy target by 2022, private investment must increase. India is looking into how innovative financing might assist support low-carbon economic growth and development by using limited public money to attract more private investment. India's clean-energy financing leadership has the potential to revolutionize global markets and tilt the scales in favour of rapid clean-energy adoption around the world. From the local to the international level, innovative financial processes and organizations, such as green bonds and green banks, have proven successful. In July 2017, Greenko Energy Holdings, for example, raised $1 billion in green bonds exclusively for clean-energy initiatives.[36] These bonds have the potential to assist India's solar and wind energy industries grow while also supporting important energy-saving and climate-resilience projects.

4. STRENGTHENING CLIMATE RESILIENCE AND ADDRESSING AIR POLLUTION

Extreme weather events are becoming more common and more severe in India as a result of climate change. Heat waves, unpredictable monsoons, drought, and extreme flooding are all contributing to widespread mortality and economic losses. Cities and states are implementing resilience programmes to expand catastrophe preparation for extreme weather as a result of the growing threat of climate change. In 2013, the city of Ahmedabad, for example, established its first-ever Heat Action Plan, which included an early warning and readiness system to help citizens cope with high heat. Since then, 30 Indian cities in 11 states have followed suit.[37] Communities need climate solutions like cool roofs to protect them from excessive heat. Cool roofing programmes were tried in Ahmedabad and Hyderabad in 2017.[38] The National Climate Change

[36] Arjit Barman and Saikat Das, "Greenko Raises $1 billion Green Bond, Asia's Largest," The Economic Times, 18 July 2017. http://economictimes.indiatimes.com/markets/bonds/greenko-raises-1-billion-green-bond-asias-largest/articleshow/59640638.cms (September 29, 2017).

[37] Natural Resources Defense Council (NRDC) and Indian Institute of Public Health (IIPH), Expanding Heat Resilience Across India (2017). https://www.nrdc.org/sites/default/files/india-heat-resilient-cities-ib.pdf and NRDC, IIPH, Rising Temperatures, Deadly Threat: Preparing Local Communities in India for Extreme Heat Events, 2015, www.nrdc.org/international/india/extreme-heatpreparedness.

[38] Ahmedabad Municipal Corporation, Ahmedabad Heat Action Plan 2017: Guide to Extreme Heat Planning in Ahmedabad, India (2017). https://www.nrdc.org/sites/default/files/ahmedabad-heat-action-plan-2017.pdf.

Adaptation Fund intends to fund resilience activities in states that are particularly vulnerable to the effects of climate change.[39] In India, alarming levels of air pollution continue to endanger human health. The cities of New Delhi, Mumbai, Pune, and Ahmedabad have developed real-time air quality monitoring and alert systems to safeguard residents.[40] In 2017, Ahmedabad launched a voluntary Air Information and Response Plan, which includes a school flags initiative to raise air quality awareness among youngsters.[41] In response to a court ruling and local action, New Delhi is preparing a mitigation plan.

5. CONCLUSION

India is on track to meet and perhaps surpass its Paris climate goals. India is on track to become a clean-energy powerhouse, thanks to government initiatives, private investment, and international alliances. India is also making progress in terms of energy-efficient construction, appliances, and transportation. India is likewise on the rise as a global power. With its vow in the run-up to the Paris meeting, India established the groundwork for increased climate cooperation. India was instrumental in getting the Montreal Protocol amended to phase out HFCs, which have a climate impact thousands of times that of carbon dioxide. India formally accepted the Paris Climate Agreement in October 2016, indicating its commitment to a sustainable, low-carbon future. India and France created the International Solar Alliance during the 21st Conference of the Parties (COP 21) in Paris, with the goal of mobilising more than $100 billion USD by 2030 to promote solar power on all fronts, including generation and storage. India is also involved in bilateral agreements. The US-India Clean Energy Finance Initiative, for example, will raise $400 million by 2021 to provide clean and renewable energy to up to 1 million families. As India tries to meet its climate commitments, it continues to demonstrate to the rest of the world that fighting climate change can coexist with rapid economic growth and growing living standards.

[39] Ministry of Environment and Forests, Government of India, Government Has Established National Adaptation Fund on Climate Change: Javadekar, 2015, http://pib.nic.in/newsite/PrintRelease.aspx?relid=124326.
[40] SAFAR – India, Air Quality Forecast Across Indian Cities: AQ Index, http://safar.tropmet.res.in/ (September 29, 2017).
[41] NRDC et al., Ahmedabad Air Information and Response Plan (2017). https://www.nrdc.org/sites/default/files/ahmedabad_air_plan_feb_2017_final_pdf.pdf.