



US-India Partnership for a Green Future



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The Asia Group is the premier strategic advisory firm to the world's leading companies seeking to excel across the Indo-Pacific region. Built on decades of senior-level experience in diplomacy, finance, and industry, The Asia Group has cultivated unique networks, experience, and expertise at the highest levels of government and business across South Asia and the broader Indo-Pacific region. Our team brings passion and experience across policy, law, and banking in Asia to unlock opportunities and overcome the toughest challenges. Headquartered in Washington, DC, The Asia Group is a dynamic team of over 50 professionals with diverse backgrounds and skill sets including former senior-level U.S. diplomats, trade and investment lawyers, management consultants, investment bankers, and industry experts.



Propelled by the process of reforms initiated in the 1990s, ORF, over the past 25 years of its existence, has effectively narrated and participated in India's story as the country has acquired an unmistakable global footprint. From primarily looking inward and engaging with domestic reforms, to gradually forging global partnerships, ORF today plays a seminal role in building political and policy consensus that enables India to interact with the world.

As new powers re-emerge onto the global stage, existing systems face challenges of agreeing on a new set of rules to control and regulate the new frontiers of space, the oceans, the internet and the human mind. The world continues, also, to navigate persisting concerns related to security and strategy, economy and development, energy and resources. As India begins to play a larger role in the 21st century, ORF continues to push normative boundaries, bring new ideas into the policy discourse and provide a platform to a new generation of thinkers. It is supported in its mission by leading intellectuals, academicians, policymakers, business leaders, institutions and civil society actors.

ORF's aim is to encourage voices from all quarters, geographies and gender, both those that fall in and those that question dominant narratives. It is this plurality of thought and voice—in a country of over a billion individuals—that ORF seeks to carry abroad, while simultaneously bringing contemporary global debates to India.



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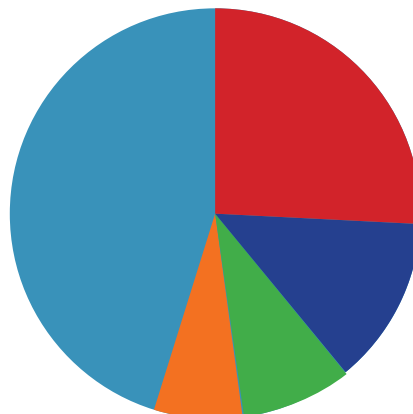
INTRODUCTION

Climate change is one of the most formidable challenges for this young century. As the World Economic Forum’s The Global Risks Report 2020 makes clear, failure to mitigate and adapt to climate change is the single most impactful and second-most likely risk facing the international community over the next 10 years¹. How effectively governments, businesses and societies can work together to make a tangible impact on this global challenge will determine the future of our planet.

As shown in Figure 1, the United States (US) and India contribute almost 20 percent of global greenhouse gas (GHG) emissions. Although the two countries differ markedly in both per capita emissions and incomes, India and the US must take concrete action according to their capabilities to develop solutions that can boost economic growth and mitigate the catastrophic consequences of climate change. The best way to achieve these twin goals is to invest in infrastructure for a resilient and low-carbon future; cooperate in key areas that produce relevant knowledge; foster innovation exchange; strengthen technical assistance bilaterally and for others; and catalyse capital investments for energy access, energy efficiency, and renewable technologies.

Figure 1: **Global GHG Emissions by Country**

CHINA	26%
UNITED STATES	13%
EU28	8.5%
INDIA	7%
REST OF THE WORLD	45.5%



Source: 2019 Emissions Gap Report, United Nations Environment Programme²

Both the US and India have taken important strides together to advance their strategic partnership in the domain of climate action and policy. However, existing efforts continue to rely mainly on an incremental approach to tackling climate change. Such measures are welcome but insufficient. As the world grapples with the COVID-19 pandemic, we are reminded of the human and economic costs associated with weak international cooperation, delayed action, and the lack of investments in important infrastructure and capabilities. Climate-induced disasters may make the current pandemic look meek, and the world could ignore this risk at its own peril. Thus, it is vital for India and the US to double down on efforts to drive structural change, hurdle institutional barriers, and overcome the inertia inhibiting green growth and development.

In line with these goals, the Observer Research Foundation (ORF) and The Asia Group (TAG) convened a joint roundtable in October 2019 to advance recommendations to strengthen the US–India partnership for a green future with a special focus on climate mitigation, renewable energy, and climate financing. Across these topics, it is clear that both countries face a number of complex and overlapping challenges and opportunities. Even as recent policy efforts have strengthened each country's capacity to tackle these challenges, this report seeks to identify policy recommendations to support this progress.



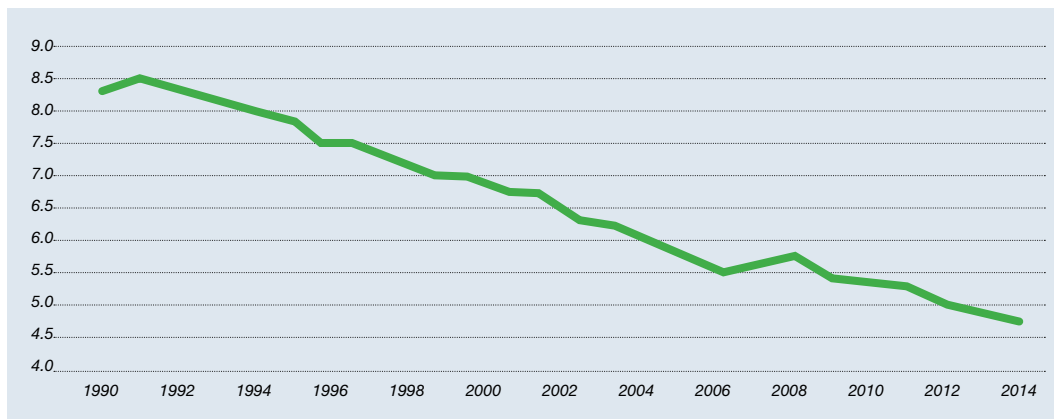
CLIMATE LEADERSHIP: INDIA AND THE UNITED STATES

Since assuming office in 2014, Prime Minister Narendra Modi has ensured India's leadership on global action on climate change. Beginning with his personal role in the success of the 2015 Paris Climate Agreement, an array of policy initiatives have been put into place to address GHG emissions and climate adaptation measures. Expanding renewable energy capacity, boosting rural electrification, improving the sustainability of cities, and promoting electric vehicles have all topped his policy agenda. The Modi government has also advanced a series of adaptation measures to help vulnerable populations affected by climate change.

India's Climate Initiatives

India has seen a trend of declining energy intensity of its gross domestic product (GDP) since 1981, and particularly since 1991. In 1991, energy intensity of GDP was 8.5 megajoules per dollar (MJ/\$); in 2015, it had gone down to 5 MJ/\$ (Figure 2).

Figure 2: **Energy Intensity of India's GDP (MJ/\$)**³

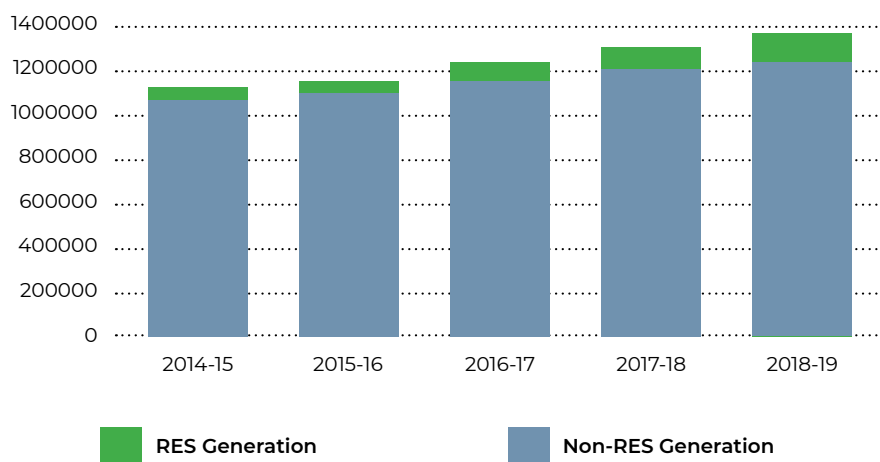


Source: World Bank Open Data ⁴

India's commitment to pursuing low-carbon development is evident in its ambitious targets and path-breaking climate initiatives. India has signalled its intention to increase its previous 2022 capacity target for renewables from 175 GW to 228 GW, further committing to a 450 GW target by 2030. By launching the International Solar Alliance (ISA) in 2015 and the Coalition for Disaster Resilient Infrastructure (CDRI) in 2019, India has successfully positioned itself as an emerging leader in the domain of climate action. The Smart Cities Mission (2015), National Clean Air Programme (2019), and Jal Jeewan Mission (2019) have provided an important framework for embedding the principle of sustainability in the realms of urban development, air quality, and water management. In a similar vein, schemes such as the Ujjwala Yojana and the Rural Electrification programme have ignited several virtuous circles across the country. The Indian green energy and technology ecosystem, spread across wind and solar power generation firms, biofuel production and electric vehicle manufacturing, has witnessed rapid expansion in the recent past. India has emerged as an attractive destination for clean energy investment and several countries, including US, have made substantial investments in India's clean-technology sector.

The Indian renewable energy industry has aggressively ramped up capacity at an annual growth rate of 17.5 percent between 2014 and 2019.⁵ As shown in Figure 3, India has been able to increase the share of renewables in its total energy mix from six percent to almost 10 percent.⁶ This growth was accompanied by a sharp increase in investment in the sector from both domestic and foreign players. The sector has seen more than US\$ 42 billion of investment since 2014 and around US\$ 7 billion of foreign direct investment (FDI) between April 2000 and June 2018.⁷

Figure 3: **Energy Generation from Renewable Energy Sources (RES) and Non-RES**

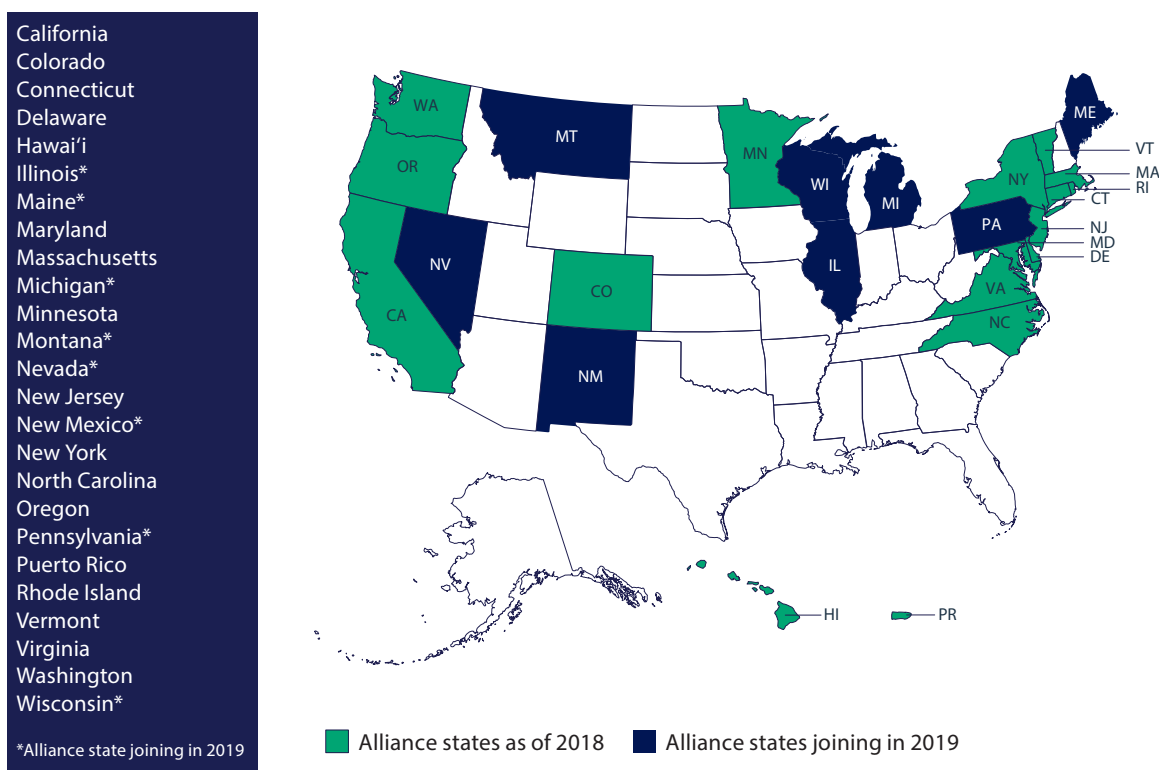


Source: Central Electricity Authority, Ministry of Power, Government of India⁸

US Climate Leadership Continues at the State Level

The United States may have formally withdrawn from the Paris Climate Agreement of 2015 but some US states are doing an exemplary job of moving the needle on climate action. Twenty-five states have committed to upholding the US commitment of reducing emissions by at least 26 percent to 28 percent below 2005 levels by 2025 by joining the United States Climate Alliance (see Figure 4). The US Climate Alliance is a bipartisan coalition of governors committed to meeting the goals of the Paris Agreement and contributing to the global efforts to address climate change.

Figure 4: Member States of the United States Climate Alliance



Source: United States Climate Alliance 2019 Annual Report ⁹

States such as California, for example, have pursued ambitious and aggressive climate action by implementing emission standards stricter than the federal standards to decarbonise the transport sector. Thirteen other states and the District of Columbia have replicated California's tighter standards. In 2013, California established a cap-and-trade programme to mitigate GHG emissions in its

own state and abroad, creating the fourth-largest carbon-trading system in the world after the European Union, Republic of Korea and the Chinese province of Guangdong. Indeed, states in the US are proving to be trailblazers in sub-national climate action. To accelerate investment in low-carbon projects and technologies, states such as Connecticut, New York, California, Rhode Island, Maryland, Delaware, and even counties such as Montgomery have established green investment banks. These green banks are instrumental in redirecting capital from GHG, fossil fuel and natural resource intensive industries to safer, cleaner and more productive investments. They serve as a useful model for policy emulation by India as it considers setting up its own green banks or funds.



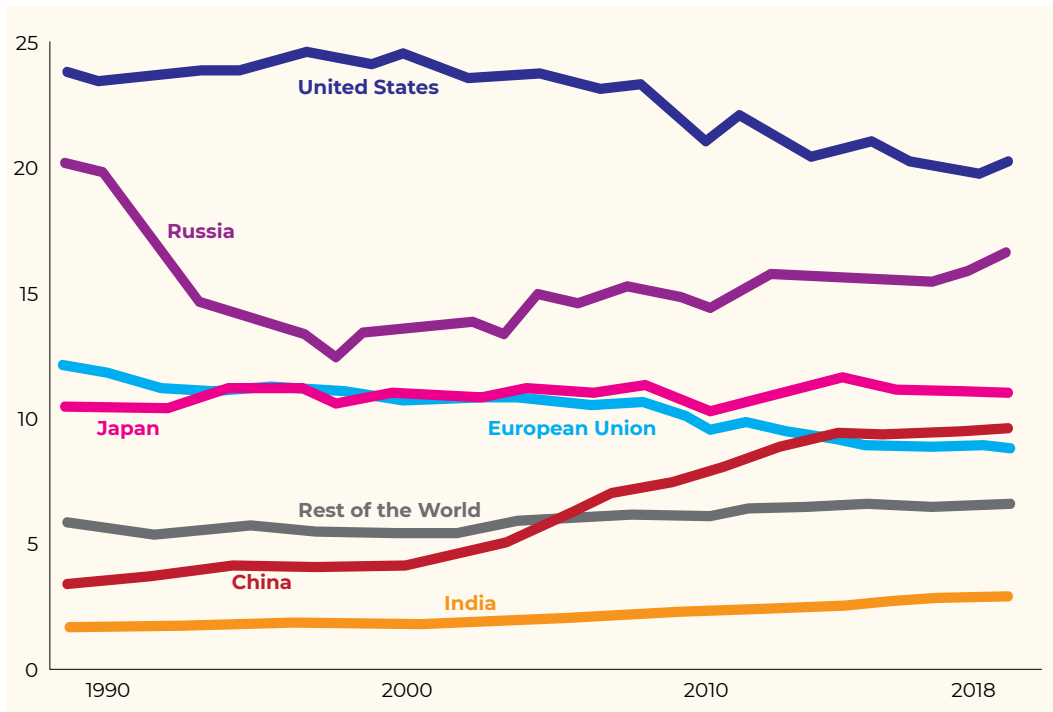
KEY CHALLENGES

Despite progress in recent years, both the US and India face a range of challenges that have limited the full ambitions of US–India climate cooperation and stunted the growth of green economies at home. The two countries have undertaken a host of climate-mitigation strategies over the years but they continue to have the dubious distinction of being among the top four global emitters. However, as shown in Figure 5, the ranking of countries changes dramatically when per capita emissions are considered; the US rises to the top and India slides to the bottom. Herein lies the opportunity. With India set to become the third US\$ 10 trillion economy in the next decade, there is huge upside for potential investments from the United States to help ensure India maintains its low per capita emissions even as its economy grows.

Yet as part of this effort, both countries will have to leap over domestic hurdles. For India, persistent challenges include limited access to private and public capital to fund green technology solutions, a continued reliance on fossil fuels such as coal to meet energy demand and mobility needs, insufficient focus on climate resilience and mitigation strategies, as well as still-nascent investments in sustainable manufacturing. Meanwhile in the US, political paralysis in the White House and Congress as well as sensitivities to the economic costs of accelerating the green transition have limited action on climate under the Trump administration. Even at the state level, uneven renewable energy deployment and the perceived cost-advantage of fossil fuels has prevented officials from doubling down on nurturing a green economy.

Given the important role both countries are set to play in reducing global emissions, their cooperation will be instrumental in ensuring a global energy transition in line with climate and development goals. The two countries can leverage their strategic partnership to advance the green agenda, unlock green financial flows, and devise market mechanisms to catalyse the transformation towards a green, low-carbon and resilient future.

Figure 5: Per Capita GHG Emissions by Country



Source: 2019 Emissions Gap Report, United Nations Environment Programme ¹⁰



ACTIONABLE RECOMMENDATIONS

1

Create a US–India G2G Climate Dialogue

2

**Elevate the US–India Strategic Energy Partnership and
Create a Fund for Energy Storage Solutions**

3

Establish a Joint Working Group on Green Finance

4

Create US–India Green Superfund

5

Work with the Financial Stability Board

6

Boost Climate Resilience

7

Advance Opportunities for Joint Research

8

Streamline Energy Data Management

9

Promote Sustainable Manufacturing

10

Establish a US–India Network of Climate Leaders



ACTIONABLE RECOMMENDATIONS

New Delhi and Washington have significant opportunities to elevate the conversation on climate action across the world by making climate collaboration a centrepiece of bilateral cooperation. In line with this goal, ORF and TAG outline ten actionable recommendations for the consideration of US and Indian policymakers, which can help both countries realise the full potential of their partnership for a green future.

1. Create a US–India G2G Climate Dialogue

The US and India should create a new G2G climate dialogue that would enhance opportunities for bilateral cooperation and global climate leadership by bringing together national leaders and government officials from both countries. This would provide a high-level, multi-stakeholder platform to examine, articulate, and chart the future trajectory of green economic development in both countries. The dialogue would identify ways in which Delhi and Washington can deepen their relationship to advance green growth and find common solutions to global challenges. It would focus on key climate policy issues critical to the bilateral relationship including e-mobility, green finance, and deployment of renewable energy. The dialogue would also provide an opportunity to both the countries to strengthen and expand existing initiatives such as the US–India Clean Energy Finance Taskforce so that it encompasses climate-critical issues other than energy.

2. Elevate the US–India Strategic Energy Partnership and Create a Fund for Energy Storage Solutions

In 2018, India and the US announced the ‘US–India Strategic Energy Partner-

ship' which recognises energy cooperation as a centrepiece in the bilateral relationship and seeks to expand engagement through government and industry channels. Both the countries must elevate this partnership to cooperate on key issues such as enhancing energy security, expanding energy and innovation linkages across energy sectors in countries, bolstering strategic alignment and facilitating increased industry and stakeholder engagement in the energy sector. The two countries must also come together to create a fund for energy storage solutions to facilitate technology infusions and investment partnerships in the energy sector. The energy mix in India is changing rapidly. For India to meet its target of 228 GW of renewable energy capacity by 2022, ensuring rapid deployment of cutting-edge energy storage will be critical. With the US fielding one of the most advanced energy storage markets globally, both countries should collaborate to develop energy storage solutions – leveraging India's talent for cost-sensitive innovation and the United States' technical know-how and ability to generate capital investment. The partnership would also be instrumental in supporting the Indian government's goal of providing reliable and affordable energy to its population, developing greater integration of modern energy sources into India's power systems and increasing the focus on energy efficiency. It could also create new business opportunities for select US companies that would help partially reduce the country's trade deficit with India – a recurring source of bilateral tension throughout the Trump presidency.

3. Establish a Joint Working Group on Green Finance

Washington and New Delhi should create a new joint working group on green finance to examine the impact of prudential norms for institutional investments – such as Basel III and International Capital Standard and Solvency II – on the costs of green finance for emerging markets. Banking regulations such as the Basel III framework, while aiming to minimise risk, have limited the flows of climate finance to developing economies. However, as demonstrated by the ongoing COVID-19 crisis and the ensuing chaos in financial markets, these models fail to account for uncertain economic conditions. Both the US and India should not be constrained by the one-size-fits-all regulatory approach prescribed by the Basel norms. In line with recent research,¹¹ the two countries should move towards a regime that provides greater flexibility to financial institutions in managing risks, along with more active supervision. The green finance group would also focus on aligning the financial system in both countries with sustainable development and designing a more robust market framework for green growth.

4. Create US–India Green Superfund

India and the US should collaborate to create a climate impact investing fund by aggregating funds from international and domestic sources. The Superfund

would focus on deploying funds across a variety of sectors such as renewable energy, less carbon-intensive fossil fuels, public transportation, electric vehicles, and agriculture. The investment mandate of this Superfund would be capital-structure neutral, allowing for flexibility and tailored approaches to account for financing needs on an industry-by-industry basis. Given its sectoral diversity as well as its anticipated linkages to multiple sources of funding, the Green Superfund would also mitigate certain risk factors that investors would face if they were to invest in only one sector or one project. Additionally, the Superfund could also be leveraged to support the ISA. In just a span of five years, as many as 86 countries have signed the ISA Framework Agreement. Given the technological prowess and production capacity might of the US, the ISA would benefit significantly from its support.

5. Work with the Financial Stability Board

Through collaboration with the Financial Stability Board, India and the US can ensure that the global financial system is able to price risk and returns appropriately, taking into account the climate impact of various investments. Both climate risks and investment risks should be taken into account while allocating capital.

6. Boost Climate Resilience

As countries that are extremely vulnerable to the irreversible consequences of climate change, India and the US must collaborate to establish a platform to promote the resilience of new and existing infrastructure systems to climate and disaster risks. India has already made great strides in this realm by launching CDRI in September 2019. Established as a platform for generating and exchanging knowledge, CDRI aims to provide member countries technical support and capacity development, research and knowledge management, and advocacy and partnerships to facilitate and encourage investment in disaster-resilient infrastructure systems. By joining the CDRI, the US can collaborate with India to bolster global efforts to promote climate resilience and sustainable development.

7. Advance Opportunities for Joint Research

Over the last decade, India and the US have collaborated on several fronts to promote joint research on climate change mitigation, resilience and energy innovation. Institutions and bodies such as the Indo-US Joint Clean Energy Research & Development Centre¹² have been established to promote clean energy innovation by teams of scientists and engineers from both the countries. Research fellowships such as the Building Energy Efficiency Higher & Advanced Network

(BHAVAN), Bhaskara Advanced Solar Energy (BASE) Fellowship and Graduate Research Opportunities Worldwide (GROW) programme have been established to create sustainable and vibrant linkages between the two countries, as well as build long-term Indo-American science and technology relationships.

Both India and the US should leverage these programmes and expand opportunities for collaborative research to build the intellectual capital necessary to address the myriad developmental challenges posed by climate change. This would also enable national and local policymakers to identify and quantify the risks that climate change poses to their economies and societies, and to formulate adaptation strategies with cost-efficient climate change adaptation measures.

8. Streamline Energy Data Management

As both US and India confront challenges relating to energy security, a robust framework for energy data management is essential for devising a sustainable and secure energy pathway for each country. Data management frameworks are also important for monitoring energy policies and tracking progress. This creates the perfect opportunity for both countries to strengthen their existing energy cooperation by streamlining energy data management. This would include addressing critical gaps in the energy data, developing a dynamic, consolidated energy map, strengthening the mandate to disseminate data, and enhancing energy modelling activities. The United States Agency for International Development, US Energy Information Administration, and NITI Aayog have already laid the foundation for establishing a nodal agency for Energy Data Management, which should be reviewed and taken forward.

9. Promote Sustainable Manufacturing

As India and the US design stimulus packages to reboot their economies in a post COVID-19 world, growth must not come at the expense of fighting climate change. Indeed, the pandemic offers an opportunity to steer the two economies in a more sustainable direction. Both countries must embed sustainability in the heart of their recovery plans and craft green economic interventions to rebuild resilient economies. Sustainable manufacturing initiatives must be promoted to create jobs, address critical manufacturing needs, and facilitate a recovery along all parts of the economy. This should be achieved by creating inter-agency groups in both countries for promoting sustainable business and manufacturing practices. The group should develop tools and resources to help businesses, particularly small and medium-sized enterprises, implement sustainable business practices faster and more effectively. It should also develop a

simplified set of metrics to help businesses make decisions that improve their economic performance and reduce their carbon footprint at the same time.

10. Establish a US–India Network of Climate Leaders

The private sector has a responsibility to actively engage in global efforts to reduce GHG emissions and help lead the global transition to a low-carbon, climate-resilient economy. Both India and the US should bring together CEOs and business leaders from diverse industry sectors and regions so that they can leverage their position and influence to drive climate action and innovation in their practices, policies and operations.



THE WAY AHEAD

Both the US and India have made strides in designing and implementing policies to create a green and resilient future. However, the urgency and scale of the climate change challenge requires redoubling focus on sustainable development. India and the US must leverage their strategic partnership to catalyse a radical transformation in infrastructure, institutions, technologies and behaviours. While the two countries have different development trajectories, resource endowments, institutions and capabilities, they must harness their partnership to create synergies and join hands to build a more developed, resilient and sustainable world. In this report, ORF and TAG have outlined key areas of collaboration for India and the US to tackle the climate change challenge. By cooperating on issues such as energy security, green finance, e-mobility, renewable energy deployment, climate resilience, and sustainable manufacturing, the two countries can jointly address critical climate policy challenges, investment gaps, and misaligned incentives. A US-India partnership for a green future could play a pivotal role in advancing the green agenda and driving transformative climate action worldwide. It is a fitting project for two leading powers, and its success will sustain our common Earth, future, and prosperity for generations to come.

ENDNOTES

¹ *The Global Risks Report 2020*, World Economic Forum, http://www3.weforum.org/docs/WEF_Global_Risk_Report_2020.pdf

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³ World Bank Open Data, World Bank, <https://data.worldbank.org/indicator/EG.EGY.PRIM.PP.KD?locations=IN>

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⁶ *CEA Annual Report 2018-19*, Central Electricity Authority, Ministry of Power, Government of India, http://www.cea.nic.in/reports/annual/annualreports/annual_report-2019.pdf

⁷ See supra note 5.

⁸ See supra note 6.

⁹ *Strength In Numbers, 2019 Annual Report*, United States Climate Alliance, https://static1.squarespace.com/static/5a4cfbf18b27d4da21c9361/t/5df78938e7c320168ad2e19a/1576503687285/USCA_2019+Annual+Report_final.pdf

¹⁰ See supra note 2.

¹¹ Sanjeev Sanyal, “*Risk vs Uncertainty: Supervision, Governance & Skin-in-the-Game*,” Ministry of Finance, Government of India, <https://dea.gov.in/sites/default/files/Risk%20Vs%20Uncertainty%20Final.pdf>

¹² The US Department of Energy and the Government of India signed an agreement to establish the Joint Clean Energy Research and Development Centre (JCERDC) on 4 November 2010. The overall aim of the JCERDC is to facilitate joint research and development on clean energy to improve energy access and promote low-carbon growth. To achieve this objective, the Indo-US JCERDC supports multi-institutional network projects using a public-private partnership model of funding.



US-India Partnership for a Green Future

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