



U.S.-INDIA STRATEGIC CLEAN ENERGY PARTNERSHIP SUSTAINABLE GROWTH PILLAR

October 2022



USAID
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U.S. TRADE AND DEVELOPMENT AGENCY



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PARTNERSHIP OVERVIEW

OUTLINE

The long history of energy cooperation between the United States and India have powered lives and livelihoods. On the margins of the April 2021 Leaders' Summit on Climate, President Biden and Prime Minister Modi announced the launch of a new bilateral partnership to advance shared climate and clean energy goals. The US-India Climate and Clean Energy Agenda 2030 Partnership includes the Strategic Clean Energy Partnership (SCEP) which was earlier established as the Strategic Energy Partnership in 2018 and had replaced the US-India Energy Dialogue, the previous intergovernmental engagement for energy cooperation. The revitalized SCEP will continue to advance energy security and innovation with greater emphasis on electrification and decarbonization of processes and end uses, scaling up emerging clean energy technologies, while finding solutions for hard-to-decarbonize sectors. Engagement with the private sector and other stakeholders will remain a priority.

STRATEGIC CLEAN ENERGY PARTNERSHIP PILLARS



UN Climate Change Conference Glasgow 2021 (November 2021)



"We can create an environment that raises the standard of living around the world. And this is a moral imperative, but it's also an economic imperative – if we fuel greater growth, new jobs, and better opportunities for all our people."

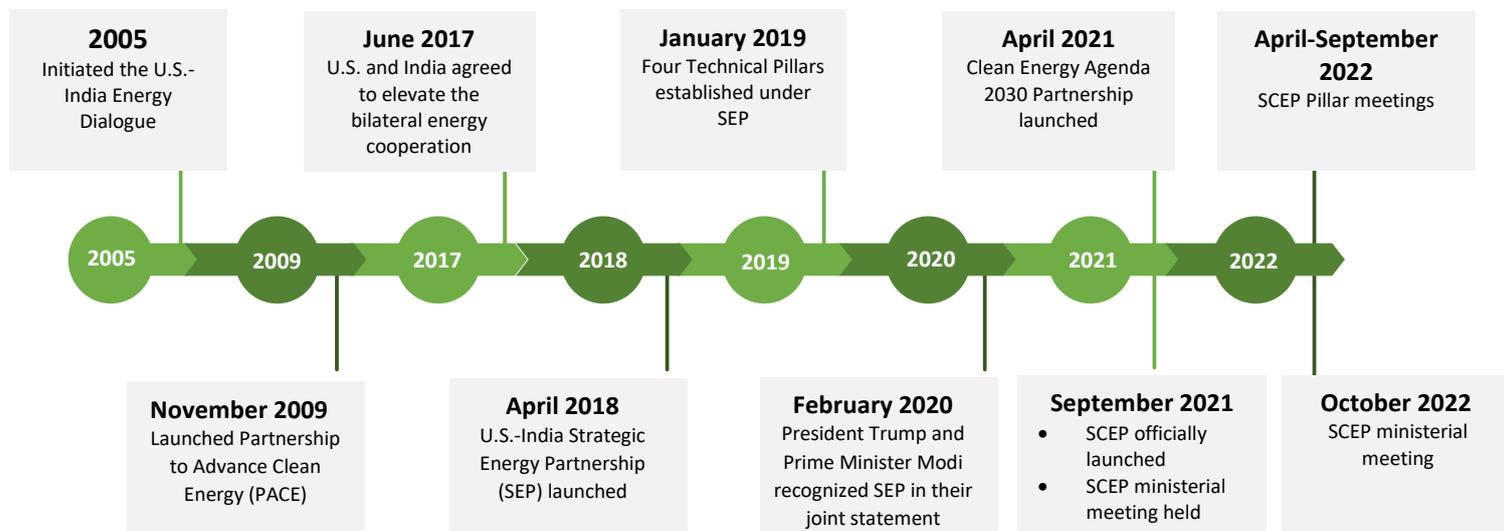
Joe Biden
President of the United States



"With the India-U.S. Climate and Clean Energy Agenda 2030 partnership, together we will help mobilize investments, demonstrate clean technology, and enable green collaborations."

Narendra Modi
Prime Minister of India

THE JOURNEY SO FAR



PILLAR OVERVIEW

The Sustainable Growth (SG) Pillar under the US-India Strategic Clean Energy Partnership takes a broader role in advancing low-carbon development and improving inclusive and sustainable economic growth through climate responsive strategies, long-term plans, and energy data management. India is well on its way to leverage its expanding and diverse economy, capitalize on its demographic dividend and benefit from its rapid urbanization. The country's growth could be further enhanced by addressing energy issues along with ensuring financial and environmental sustainability as a climate responsible country. India is prioritizing strategies which could improve energy security, reliability, and affordability, universal energy access, and resiliency of energy systems to cyber-attacks and extreme weather events. Such strategies also help maintain water and food security over the long-term, reduce health impacts of air pollution, and support environmental stewardship.

The broad scope of the Sustainable Growth Pillar includes, but is not limited to:

- Improving inclusive and sustainable economic growth by enhancing long-term energy development plans and strategies through robust energy planning which should be based on better energy data management and analytical tools
- Developing tools/models and analysis for evidence-based planning and policy making
- Conducting cross-sectoral analysis of energy policies on broader development goals, including energy-water-food-nexus, air pollution, energy access, low-carbon growth, and decarbonization of transport, buildings, and industry
- Promoting collaboration between Indian and U.S. research institutions for enhancing modelling capabilities and tools for low-carbon development, decarbonization, and just transition.

Focal Areas of the Pillar



Energy Data Management



Energy Modelling



Low-carbon Technologies and Decarbonization



Just Transition from Coal

RENEWABLE ENERGY PILLAR CO-CHAIRS



Rajnath Ram
Adviser (Energy),
NITI Aayog, Government of India

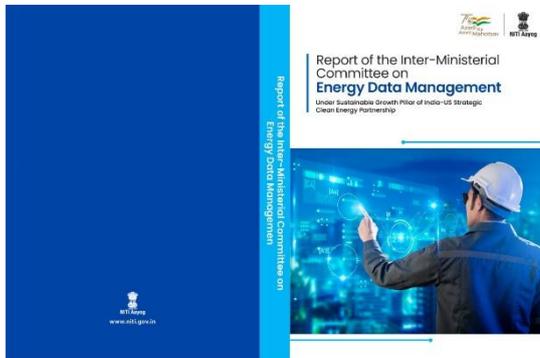


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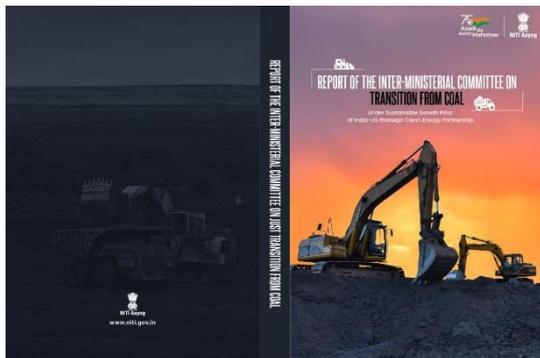
MAJOR HIGHLIGHTS

NITI Aayog established the governing structure for activities under the Sustainable Growth Pillar of U.S.-India Strategic Clean Energy Partnership. Three Inter-Ministerial Committees were established to deliberate on and provide direction on key research areas and recommendations going forward, strategic steering, and inter-departmental coordination. The committees held several meetings between relevant U.S. and Indian agencies comprising of government, industries, research, and academia under the aegis of NITI Aayog. These efforts have resulted in the development of three reports.



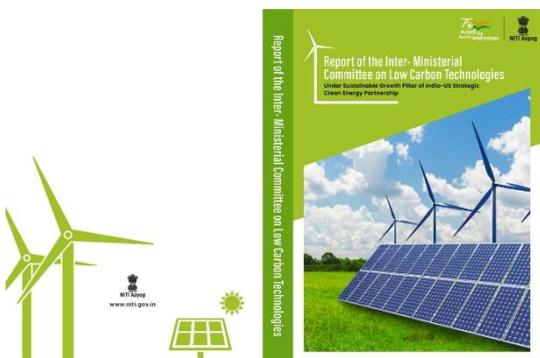
Energy data management

Intuitive and comprehensive energy projection with reliable, robust, and validated data visualization is critical to India's sustainable energy discourse. Under the chairmanship of Adviser (Energy), NITI Aayog, the Inter-Ministerial Committee on Energy Data Management evaluated ways to effectively manage the energy data. The committee has developed a report covering the areas of data formats, methodologies, definitions, and concepts for energy data collection and reporting, calorific values of coal, economic/statistical units in the energy sector, energy products and resources, and energy and commodity balances.



Just transition from coal

Due to increasing share of non-fossil-based resources in the energy mix, India requires a socio-economic and technological shift that would benefit the states, communities, and sectors that rely on coal for both power and livelihoods. A just transition should leave no one behind. Under the chairmanship of Joint Secretary, Ministry of Coal, the Inter-Ministerial Committee on Just Transition in the Coal Sector worked on institutional structure in order to address challenges associated with just transition in the coal sector. The committee prepared a report which covers key issues to be addressed such as livelihoods, community health, physical and social infrastructure, resource repurposing, and public finance. The report identifies pre-requisites for just transition which includes a Coal Transition Policy, a Regional Development Framework, a geospatial survey of coal-bearing areas, and financing, as necessary for a just transition. The report also recommended an action plan and implementation framework for such a transition.



Low-carbon technologies and decarbonization

To help scale up low-carbon technologies, the pillar will also support the development of frameworks, tools, and demonstrations. Technologies may include electric mobility, clean fuels, air pollution control, battery storage, green hydrogen, carbon capture, utilization, and storage (CCUS), energy efficiency, smart grids, and innovative technologies for waste management in cities. Under the chairmanship of Senior Adviser (Science and Technology), NITI Aayog, the Inter-Ministerial Committee on Low Carbon Technologies developed a report on strategies for decarbonization and deployment of low-carbon technologies in industry, particularly steel and cement. The report covers technology and policy interventions, incentives required and a phase wise plan for achieving the decarbonization.

In addition, the pillar has been working closely with various stakeholders to overcome the challenges associated with financing electric vehicles (EVs), which are an important part of decarbonizing the transport sector.

GOING FORWARD

By improving long-term energy development plans and strategies, the Sustainable Growth Pillar contributes to India's inclusive and sustainable economic growth agenda. This broader goal will be met through increased collaboration between Indian and U.S. institutions on energy data management; the development of tools/models and analysis for evidence-based planning and policy making; cross-sectoral analysis of energy policies on broader development goals; and the accelerated adoption of low-carbon technologies that will accompany the decarbonization of critical sectors such as transportation, industry, power, and buildings. The Sustainable Growth pillar will prioritize the following priorities.

ENERGY DATA MANAGEMENT (EDM)



Several state and national agencies publish energy data for India (including resource assessment, extraction, conversion, transmission, distribution, and consumption). However, much of the available data is dispersed and difficult to collate due to differences in data set arrangement, the use of incompatible formats, the lack of standard definitions, data gaps, and inconsistencies.

The SG pillar intends to strengthen the framework of India's energy data management. The priorities going forward will be on aligning the methodology used for determination of calorific values of various fuels to arrive at a more accurate energy balance, developing a methodology for holistic assessment of bioenergy resources, developing a survey design for incorporating demand side and unorganized sector energy data in the country's statistics, and enriching the existing India Energy Dashboard for transparent public availability of most up to date data.



ENERGY AND ENVIRONMENTAL MODELLING FOR POLICY MAKING

Energy is one of India's most dynamic sectors and is critical to the country's developmental goals and economic progress. The SG pillar intends to leverage the expertise of US laboratories for climate and energy modelling, as well as to expand research areas in the redesigned India Climate and Energy Modelling Forum (ICEMF). The ICEMF set up by NITI Aayog will assume a larger role to systems modelling and analysis in the Government of India's decision-making processes. Its role is to enhance the level of engagement among modelers, researchers, and policymakers.

In 2022-23, the partnership will focus on building capacity in the areas of Integrated Assessment Models and sharing of open-source tools, as well as to facilitate development and use of state-level calculator tools in the areas of energy, economy, and climate. This is in addition to facilitating synergies between energy researchers and funders, as well as undertaking partnerships, joint studies, and collaborations to incorporate climate vulnerability, risk, mitigation, and adaptation into modelling exercises.

STAKEHOLDER ORGANIZATIONS

- Ministry of Statistics and Programme Implementation
- Ministry of Petroleum and Natural Gas
- Ministry of New and Renewable Energy
- Ministry of Environment, Forest and Climate Change
- Ministry of Coal
- Ministry of Power
- Bureau of Energy Efficiency
- Central Electricity Authority
- NITI Aayog
- U.S. Department of Energy (US DoE)
- United States Agency for International Development (USAID)
- Pacific Northwest National Laboratory (PNNL)
- Energy Information Administration (EIA)



PROMOTION OF LOW-CARBON TECHNOLOGIES



Economic growth, urbanization, rising incomes, and industrialization are all driving significant increases in emissions in India. Buildings, industries, and transport sector are among India's major energy consumers. India's growing energy demand makes it a priority to reduce the country's emission intensity, coupled with a sustained commitment to a low-carbon future through national commitments and policies for various sectors. Under the Sustainable Growth Pillar, the U.S.-India cooperation continues to expand its assistance to a variety of stakeholders in developing strategies and plans to decarbonize high-emission sectors. The focus this year will be to overcome challenges in EV financing for customers through an EV Financing and Services Entity. The dedicated financing is aimed for customers to have increased access to affordable institutional finance. This year's plan is also to build a database of low-carbon technologies in consultation with U.S. agencies

STAKEHOLDER ORGANIZATIONS

- Ministry of Heavy Industries
- Ministry of Steel
- Ministry of New and Renewable Energy
- Ministry of Coal
- Ministry of Environment, Forest and Climate Change
- Central Electricity Authority
- Bureau of Energy Efficiency
- NITI Aayog
- U.S. Department of Energy (US DoE)
- United States Agency for International Development (USAID)
- Pacific Northwest National Laboratory (PNNL)
- National Renewable Energy Laboratory (NREL)
- Lawrence Berkeley National Laboratory (LBNL)

Overcoming EV financing challenges



"Financing is the most critical part of EV growth in India. But a one size fits all approach won't do as each EV segment has its own challenges."

Sudhendu J. Sinha

Adviser (Infrastructure Connectivity – Transport and Electric Mobility), NITI Aayog, Government of India

Supporting green technology financing and transparent government procurement is critical to assisting South Asia's clean energy transition. USAID and NITI Aayog are working to enable a line of credit or a dedicated EV Financing and Services Entity. In this regard, extensive stakeholder consultations and discussion with multiple development finance institutions and domestic financial institutions have been planned to explore interest in establishing or joining the entity. As a part of this outreach, on August 22, USAID organized a stakeholder consultation in New Delhi, "EV Financing – Opportunities and Challenges." The event was conducted in partnership with NITI Aayog and chaired by Adviser (Transport), NITI Aayog, Government of India. Attendants, including original equipment manufacturers, aggregators, and financiers, expressed keen interest in EV financing and sector expansion during the discussion.



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- NITI Aayog
- U.S. Department of Energy (US DoE)
- United States Agency for International Development (USAID)
- University of Maryland
- Lawrence Berkeley National Laboratory (LBNL)



JUST TRANSITION FROM COAL

Coal continues to have an important role in India's primary energy mix and power generation. However, due to increasing use of non-fossil-based energy, India requires a socio-economic and technological shift that would benefit the states, communities, and sectors which rely on coal for both power and livelihoods.

The Sustainable Growth pillar aims to facilitate a just transition in the coal sector by drawing upon experiences in USA. This pillar will undertake scenario analysis to model the impacts of transitioning away from coal, factoring in upsides of air quality, environment protection, and water savings. This year the priorities will be on sharing of knowledge and best practices on just transition policies and institutional frameworks. This will be accompanied by field visits to understand environment-friendly mine closure policies, repurposing of land, reskilling of workers, financing requirements/instruments etc.

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