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U.S.-India Strategic Energy Partnership

SUSTAINABLE GROWTH PILLAR

Highlights

The U.S.-India Strategic Energy Partnership (SEP), launched in April 2018 at the direction of President Trump and Prime Minister Modi, set the stage for deeper and more meaningful engagement through Government and Private Sector Cooperation using an integrated interagency approach. The SEP's focus is to elevate market-led energy security, expand innovation across the energy sector, deepen bilateral strategic alignment, and increase industry and stakeholder engagement. It also positions India as a key partner in the Asia Enhancing Development and Growth through Energy (EDGE) initiative.The SEP is coordinated by the U.S. Department of Energy and the Ministry of Petroleum and Natural Gas, Government of India (GOI).

Strategic Energy Partnership

- Oil and Gas Pillar
- Power and Energy Efficiency Pillar
- Renewable Energy Pillar
- Sustainable Growth Pillar

The Sustainable Growth (SG) Pillar

The broad scope of the SG Pillar includes improving inclusive and sustainable economic growth by enhancing long-term energy development and plans and strategies through energy data management; tools/models and analysis for evidence-based planning and policy making; cross-sectoral analysis of energy policies on broader development goals, including energy-water-food-nexus, air-pollution, energy access; collaboration between Indian and U.S. research institutions, enhance modeling capability and enhance geo spatial tools for renewable energy planning and deployment.

This will also allow India to optimally use a wide range of energy resources to meet its developmental objectives. The collaboration will also focus on development and deployment of low-carbon and environment-friendly technologies. NITI Aayog and the U.S. Agency for International Development (USAID) co-chair this pillar.

The SG Pillar brings together Indian and U.S. researchers and decision makers to collaborate in three focal areas:

1. Energy data management
2. Energy modeling
3. Low-carbon technologies

Key Highlights

- NITI Aayog and USAID jointly hosted the first Indian Energy Modeling Forum (IEMF) meeting in March 2019, a new platform for policy makers, industry, researchers and international institutions to collaborate on key energy and environmental research questions to inform decision making. Ten Indian government entities are involved, along with two dozen research and industry organizations, foundations and foreign governments.
- The Indian agencies, including Ministry of Statistics and Programme Implementation (MoSPI), have benefitted from the cooperation in improving the energy data system under the SG Pillar work, including the new Energy Dashboard and improvements in underlying data such as data for oil, gas and coal.
- Study tours, webinars and workshops have strengthened capacity on energy data management and improved coordination between Indian data agencies.
- Five peer-reviewed journal articles and over ten reports were produced as a result of SG Pillar activities.
- Indian research institutes enhanced their capacity for modeling. This includes significant work on model development as well as strengthened skills to conduct multi-model analysis that informs policy.
- One research example is the study the Indian modeling teams comprising of TERI, CSTEP, IRADe, CEEW and U.S. Department of Energy's Pacific Northwest National Laboratory (PNNL) completed on decarbonization strategies for India's transport sector. The study examines low-carbon technologies and options for the transportation sector, including electric vehicles.
- Institutionalizing the India Energy Modeling Forum will bring lot of synergies on the research topics which would be relevant for the energy sector.

Sustainable Growth Pillar Co-chairs

Mr. Javier Piedra
Deputy Assistant Administrator, Asia Burau,
United States Agency for International Development

Dr. Rakesh Sarwal
Additional Secretary,
NITI Aayog

Energy Modeling

In India's fast-growing economy, energy modeling is critical in informing important policy and market questions. Both the government and the private sector need the ability to understand trends and the implications of decisions in a complex but interconnected world. The SG Pillar modeling initiative has enhanced India's ability to incorporate analysis into energy decision making. This includes improving cooperation and coordination between the modeling teams and building capacity of Indian institutions in energy, water, transportation and other related areas of analysis.

Recognizing the importance of energy modeling to India's future energy and environmental decision making, NITI Aayog and USAID convened the first Indian Energy Modeling Forum meeting in March 2019.

Four Indian research institutions (TERI, CSTEP, IRADe and CEEW) and PNNL have been collaborating to provide coordinated analysis in topics of critical interest, and this collaboration will now be expanding to additional research teams. These activities have helped to bring all stakeholders including ministries of the GOI to understand the implications of the various policy scenarios.

In July 2020, NITI Aayog announced the launch of the IEMF governance bodies, including an Advisory Board with numerous ministries and several industry representatives, a Steering Committee with leading research institutions and NITI Aayog, and an International Advisory Board.

IEMF Meeting - March 2019

"The IEMF seeks to provide a platform for leading experts and policy makers to study important energy and environmental issues and ensure induction of modelling and analysis in informed decision making process."

Dr. Rajiv Kumar, Vice Chairperson, NITI Aayog

"Today we launch a new phase of the U.S.-India energy cooperation, one which will take this partnership to the next level."

Mark A. White, USAID/India Mission Director

Energy Data Management

Publicly available energy data is a critical factor in supporting investment decisions. Reliable, consistent, and easily accessible data are important to understanding energy security risks, formulating energy and environmental sector policies, and making rational business decisions. Availability of energy data requires institutional mechanisms and processes to collect, process, and disseminate data in a timely manner.

U.S. Energy Information Administration (EIA), USAID, and PNNL worked with Indian partners to improve energy data, and build capacity for energy data management. Under this bilateral cooperation, NITI Aayog along with the MoSPI, line ministries and Prayas were able to improve energy data. SG Pillar activities resulted in several peer-reviewed publications and reports to document findings, revealed data gaps, and proposed a concrete way to improve energy data management in India.

NITI Aayog data energy expert meeting with the Energy Information Agency (EIA) to learn about energy data management. Ruchi Gupta spent 3 weeks in the United States learning and planning for NITI Aayog's proposed energy data cell under a PACE Fellowship. Here, she is meeting with Eileen O'Brien who oversees EIA's energy consumption surveys.

Based on the analysis conducted under the SG Pillar activities, NITI Aayog formed two working groups to prepare recommendations on supply and demand sides of energy data management. Under these working groups, eight sub-groups were created for demand and supply sectors. These sub-groups have finalized recommendations, which have assessed the available data formats, identified several data gaps and suggested framework for strengthening the data gaps. The focus under the SG Pillar will be on improving the energy data management systems through transfer of best practices from the U.S. to India. Indian agencies will not be required to share their data with U.S.

Low-carbon Technologies

U.S.-India cooperation is expanding assistance to a variety of stakeholders, including Indian central and state governments, utilities, and regulators to develop frameworks, tools and demonstrations for scaling up low-carbon technologies.

Technologies include clean fuels, electric mobility, battery storage, energy efficiency, and smart grid.

"Emissions from transport have grown faster than those from any other sectors over the past 30 years and climate change cannot be stopped without decarbonizing transport," says NITI Aayog CEO Amitabh Kant.

Four Indian modeling teams and PNNL have collaborated on a study to compare the emissions mitigation potential of various decarbonization strategies for India's transport sector. One of the scenarios the teams have examined is electrification of on-road transport. The team will continue collaboration to analyze the energy and emissions effect of decarbonization technologies in other sectors.

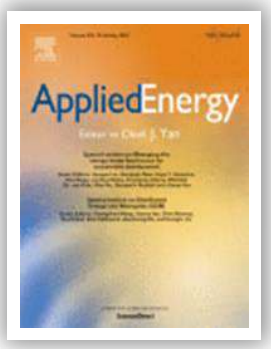
NITI Aayog released the report on November 7, 2019. The study is an example of close cooperation between the modeling teams, NITI Aayog, USAID, and the Shakti Sustainable Energy Foundation.

Key Sustainable Growth Pillar Activities in the Coming Year

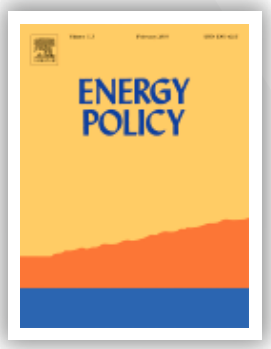
- Support the strengthening of the India Energy Data Management system to improve energy data availability, accessibility, and consistency for policymakers and public.
- Launch two new multi-team research studies to support energy and environmental decision making under the IEMF, and foster strong coordination between government, industry and researchers on decision-relevant analysis.
- Collaborate on analysis of low-carbon technologies, including electric vehicles.

Low carbon technologies such as electric vehicles

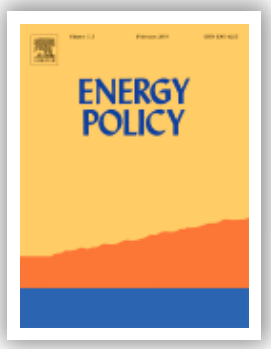
Key Publications



Water for electricity in India: A multi-model study of future challenges and linkages to climate change mitigation



Effective energy data management for low-carbon growth planning: An analytical framework for assessment



A multi-model assessment of energy and emissions for India's transportation sector through 2050