

U.S.-India Insight

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U.S.-India Climate Cooperation: Help Where It Hurts

RICHARD M. ROSSOW



The India-focused policy community is largely enthused by the recent bilateral and quadrilateral meetings in Washington, DC. Climate change cooperation figured prominently in these talks, notably India's robust target of achieving 450 gigawatts (GW) of renewable energy in its energy mix by 2030. Yet, India's interim target of 175 GW by the end of 2022 is likely an impossible target. Pressing for stronger commitments from the central government is insufficient. The United States and global partners need to expand state-level engagements with India—with particular attention to those states that are furthest from meeting their individual renewable energy targets.

India's electricity sector is very decentralized. State governments play the dominant role in determining the makeup of generation within their own grids. Decisionmaking is a mixture of the state's political leaders, state finance ministries, the tariff-setting electricity regulatory commissions, and the distribution companies. And some states have multiple distribution utilities.

The 175 GW national renewable target is broken down into sub-targets for each state, which are further broken down by [generation source](#). 100 GW is to come from solar; 60 GW from wind; 10 GW from biopower; and 5 GW from small hydropower.

India proudly noted the achievement of inducting 100 GW of renewable energy earlier this year. This is over one-quarter of all installed generation and is [primarily composed](#) of wind power and solar power, together with a smaller mixture of biomass and small hydropower. However, adding an additional 75 GW in a year is nearly impossible barring a revision of the definition, perhaps to include large hydropower projects or projects already tendered and under construction.

Looking at Indian states with individual targets of at least 100 megawatts of installed capacity by 2022, there is a clear disparity between states' abilities to meet the target. Karnataka has already exceeded its target, with installed renewable energy of 12.3 GW compared to a 2022 target of 11.9 GW. Four other states are at least 50 percent of the way to meeting their 2022 target including Gujarat, Rajasthan, Tamil Nadu, and Telangana.

India's problem in meeting its national target largely lies with a few large states. The largest gap between targets and installed capacity (wind plus solar) is 45 GW by five states; the combined gap among the top 10 states equals 66.7 GW. Some very large states like West Bengal and Bihar have not even managed to meet 10 percent of their targets for solar and wind.

KEY DATA

+28%

U.S.-INDIA GOODS TRADE, 12-MONTH
COMPARISON, PER U.S. CENSUS BUREAU

+82%

FOREIGN DIRECT INVESTMENT, 12-MONTH
COMPARISON, PER RBI

\$34 bn

FII ASSETS NET FLOWS, LAST 12 MONTHS,
PER NSDL

	Total Wind and Solar Target	Total Wind and Solar Installed	Gap between Target & Installed	Percent of Target Achieved
Maharashtra	19,526	7,290	12,236	37%
Andhra Pradesh	17,934	8,093	9,841	45%
Uttar Pradesh	10,697	1,668	9,029	16%
Tamil Nadu	20,784	13,834	6,950	67%
Madhya Pradesh	11,875	4,983	6,892	42%
West Bengal	5,336	150	5,186	3%
Rajasthan	14,362	9,800	4,562	68%
Gujarat	16,820	12,374	4,446	74%
Punjab	4,772	947	3,825	20%
Haryana	4,142	408	3,734	10%
Telangana	7,000	4,064	2,936	58%
Delhi	2,762	193	2,569	7%
Bihar	2,493	160	2,333	6%
Odisha	2,377	402	1,975	17%
Jharkhand	1,995	49	1,946	2%
Kerala	1,870	257	1,613	14%
Chhattisgarh	1,783	253	1,530	14%
J&K	1,155	21	1,134	2%
Himachal Pradesh	776	43	733	6%
Assam	663	43	620	6%
Uttarakhand	900	353	547	39%
Goa	358	8	351	2%
Tripura	105	10	96	9%
Karnataka	11,897	12,258	(361)	103%

Engagement with these states should focus on reinforcing the central government’s laudable targets to ensure policy support.

- [Revamped Distribution Sector Scheme](#): Announced on July 20, 2021, the scheme offers incentives to states that agree to undertake certain reforms to strengthen electricity distribution.
- [Electricity Act Amendments](#): The amendments, drafted by the Ministry of Power, represent key changes to the Electricity Act that will strengthen regulation and pricing.

These states with the largest gaps must be engaged to assess opportunities to help. Foreign voices are unlikely to have much impact on politically motivated pricing issues that hamstring the financial viability of distribution companies. But that still leaves a great deal of space for technical cooperation. Some examples of areas where U.S. expertise would be welcomed by states:

- **Data Analysis**: Helping state governments improve regulation and governance by utilizing data tools to understand demand response, improve billing accuracy, and more

- **Demand Forecasting:** Sharing tools and practical experiences with states in demand forecasting to better match electricity generation and consumer use.
- **Weather Forecasting:** Assisting Indian states build tools to improve weather forecasting. Weather forecasting is crucial when considering investments in renewable energy. Some forms of electricity, notably coal-fired thermal, can take time to increase capacity and require advance notice.
- **Electricity Storage:** U.S. utilities can share their own research findings on the relative merits of different storage technologies and help Indian states take these key decisions.
- **Regulation of Open Access/ Competition:** The pending Electricity Act amendments push for states to allow greater consumer choice. Many U.S. jurisdictions have experience, and can share practices that have worked, and those which have been less successful.

India is arguably the most important nation in the world in helping avert a climate crisis. While clearly not a major historical contributor to the crisis, the choices India makes as the nation further industrializes will have a global impact. The United States can play a role in helping India meet its own carbon-reduction targets. The engagement should not be limited to Delhi. Our path to climate progress winds through places like Lucknow, Kolkata, Mumbai, and Amaravati.

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