

India

Overall Rank: 15
Type: Large Market; Small Market Share

The Indian renewable energy market remains one of the most challenging and unwelcoming markets for American exporters globally. Strong local content requirements and a complicated business climate make export deals difficult. Exporters are encouraged to consider state-level projects and to find niche opportunities, particularly in the export of renewable energy related services.

Sub-Sector Rankings

Ethanol	17	Geothermal	N/A	Hydropower	6
Pellets	12	Solar	6	Wind	18

India is already one of the world's largest energy markets and growth is expected to continue relatively unabated into the future. In 2012, India added 23.6 GW of new power generation – more than the entire installed capacity of several medium-sized countries.

Yet India faces significant energy challenges, including a vast gap between energy supply and demand, a large population that still lacks access to regular electricity, and the need to limit carbon emissions; challenges that, if overcome, would enable more sustainable economic growth well into the future.

Two factors in particular underpin almost every energy decision. First, India needs more power. Rolling brownouts have hampered economic growth and limited foreign investment in the country. The July 2012 blackout that affected 620 million, for example, was seen globally as an embarrassment that needed to be corrected.¹

Second, India fervently wants to be a clean energy leader – not just as a consumer of clean energy products, but as a producer. As a result, the Indian government is unlikely to change course in the face of international pressure to open its renewable energy market to foreign imports, and export opportunities may be limited going forward as more local production comes online.

Overview of the Renewable Energy Market

Renewable energy accounted for roughly 12 percent of India's power production during the first months of 2013.² Large hydropower accounts for the vast majority of India's renewable energy capacity, reaching over 39 GW by the end of March 2013. Wind power accounts for the next largest installed capacity (20 GW), followed by small hydropower (4.8 GW).³

The solar sector is expected to grow significantly from just over 340 MW at the end of 2011 to over 7 GW by 2015.⁴ The growth is supported at the national level by the Jawaharlal Nehru National Solar Mission (JNNSM), which was launched in 2009 and called for 20 GW of new solar capacity by 2022. The JNNSM has been implemented by the Indian Ministry of New and Renewable Energy, which allocates projects through an auction to developers who offer to supply power at the lowest rate possible.

Challenges and Barriers to Renewable Energy Exports

Unfortunately for U.S. exporters, the JNNSM includes strong LCRs that significantly reduce the export potential provided by the Indian market. Phase 1 of the JNNSM banned the import of crystalline-silicon solar cells (the ban was later extended to include modules). Phase 2 of the JNNSM, which was announced in early 2013, includes a similar commitment to local content.

This *Top Markets* case study is provided as a resource for U.S. exporters by the International Trade Administration. Every effort has been made to ensure that the information presented in this report is complete and accurate as of the date of publication; however, the U.S. Government assumes no responsibility or liability for any errors or omissions. Readers are advised to independently verify any information contained in this intelligence brief prior to relying on it. The information provided in this report does not constitute legal advice. Readers are further advised to conduct their own due diligence and seek the advice of legal counsel before entering into business ventures or other commercial arrangements in this market.

The first solar auction under Phase II, announced in October 2013, reserved 375 MW of the 750 MW auction for developers who committed to using only Indian-made equipment.⁵

In addition to an obstructive policy environment, U.S. exporters face several structural barriers that make U.S. exports relatively uncompetitive. For example, the cost of financing in the Indian market is often prohibitively high. For solar projects, the cost of borrowing money can be 13-14 percent.⁶ Partly as a result of the cost of financing and partly because other markets have become more attractive, India's clean energy investment peaked in 2011 and is not expected to reach similar levels going forward.⁷ Most renewable energy technologies cost less than they did in 2011, so development should continue unabated, but investor interest has waned.

Exporters are therefore advised to consider India as an export destination only if the market fits well into a company's specific export strategy. Other markets are simply larger, more attractive, and easier to navigate. If exporters are interested in the Indian market, they are highly encouraged to contact the Foreign Commercial Service in India for details on market entry and recent policy announcements.

Opportunities for U.S. Companies

Wind

Annual wind installations in India are set to decline for the second straight year as a lack of policy certainty has slowed investment in the sector. To address this, the Indian government announced in March 2013 that it will renew generation-based incentives for wind energy, although details of the structure were not disclosed. Based on the previous incentive, *Bloomberg New Energy Finance* (BNEF) predicts India should install roughly 5 GW of new wind projects in 2014.⁸

Importantly, independent power producers have continued to show faith in the long-term value of the Indian wind market, as they continue to announce new projects. Some projects have already secured financing, but lenders appear less positive on the market and often seem reluctant to move quickly.

Despite projected growth, American wind companies remain at a severe disadvantage in India due to the dominance that local turbine manufacturers have in the market. The top four wind developers in India are all Indian companies. Wind World India, the former Indian

subsidiary of German firm Enercon, which severed ties with its German parent in January 2013, recently overtook Suzlon as the market leader for the first time in more than a decade. ReGen Powertech and Inox Wind are the third and fourth largest developers.⁹

Due to the challenges, India ranks only 18th in terms of projected U.S. exports through 2015. U.S. exporters may find some opportunities in exporting component parts and services, especially because India does not charge an import duty for wind turbine components.

Solar

ITA expects India to install more solar energy capacity through 2015 than any country except Japan and China. Despite severe local content requirements in projects that receive incentives from the JNNSM, the sheer size of the limited slices of the market open to international businesses is large enough to rank India sixth on ITA's list of top solar export markets through 2015.

Some exporters have previously found success using Ex-Im Bank financing, but given the restructured local content provisions under Phase II of India's National Solar Mission, those opportunities may be ending. As a result, ITA encourages solar exporters to consider projects developed through state-level incentives, which often do not mandate the use of local content. According to Phase II draft guidelines, state programs should account for 5.4 GW of new development to 2017, with only 3.6 GW allocated through national-level auctions.¹⁰

Currently three states – Gujarat, Rajasthan, and Maharashtra – account for 90 percent of India's total solar capacity, but other states have begun to enter the market as well. In 2013, Tamil Nadu, Andhra Pradesh, Karnataka, Punjab, and Uttar Pradesh all offered solar auctions. Many of these auctions were unsuccessful in contracting their targeted amount of capacity, however, as too many auctions in a short period of time and weak power purchase agreements caused developer interest to wane.

Ethanol

The situation for ethanol exports is evolving quickly in India with consequences for the competitiveness of U.S. exporters. While the Indian Government's previous policy focused on domestic production, in April 2013 it was reported that Indian companies were experiencing a shortfall of domestic ethanol to comply with India's five percent blend mandate. Indian companies scrambled to obtain foreign ethanol with one company

seeking 820 million liters of ethanol from international suppliers.¹¹ The resulting demand for international ethanol caused prices to rise, the backlash of which was a threat from the Indian government to impose price controls for imported ethanol. If such a price control was implemented, export opportunities may be short lived.¹²

Biomass

U.S. exporters may also find opportunities in the biomass and waste-to-energy sectors, although at a much smaller scale than either solar or wind. MNRE announced that it will likely increase funding for waste-to-energy projects in order to meet India's goal of 4 GW of installed capacity by the end of the 12th Five Year Plan in 2017, but details have yet to follow.

Hydropower

India ranks sixth on ITA's list of top hydropower export markets through 2015 thanks to its well-developed market and significant growth potential. India has over 39 GW of installed hydropower capacity currently online, but 50 GW of projects are currently under development. The Northeast states of Assam and Arunachal Pradesh have a majority of the undeveloped hydropower potential.

As in other renewable energy sectors in India, project development can be slowed down by bureaucratic red tape, leaving potential U.S. exports waiting for approvals from the Indian Government. Project delays are common, with development times from 10 to 15 years on large-scale hydropower projects. Nevertheless, exports of U.S. expertise and small hydropower technologies are likely in the near-term.

Upcoming Renewable Energy Trade Events for Exporters interested in India:

- **Renewable Energy India; September 3-5, 2014** – New Delhi

U.S. Foreign Commercial Service Contact Information:

Renie Subin
Commercial Specialist
Email: Renie.Subin@trade.gov
Tel: 91-11-2331 6841thru 49 ext.2155

For more information, please visit: www.export.gov/reee or www.export.gov/india.

2014 Renewable Energy Top Markets Report



This *Top Markets* case study is part of a larger report that includes rankings of 75 different markets in terms of overall U.S. renewable energy exports through 2015, as well as specific rankings for the ethanol, geothermal, hydropower, biomass pellets, solar and wind sectors. To access the full report, visit <http://export.gov/reee/topmarkets>.

¹ Ernst & Young, *Renewable energy country attractiveness indices*, Issue 35, November 2012, pp. 29.

² *Bloomberg New Energy Finance*, "Country Dashboard: India"

³ *Bloomberg New Energy Finance*, "H1 2013 India Market Outlook" pp. 1

⁴ Government of India, Ministry of New and Renewable Energy, *Annual Report: 2011-2012*, pp. 7.

⁵ *Bloomberg New Energy Finance*, "India Invites Bids for 750 MW under Phase II of Solar Mission" (11 October 2013)

⁶ Renewable Energy World, "Asia Report: India's Solar Market at a Crossroads," 26 February 2013.

⁷ *Bloomberg New Energy Finance*, "H1 2013 India Market Outlook" pp. 6

⁸ *Bloomberg New Energy Finance*, "H1 2013 India Market Outlook" pp. 1

⁹ *Bloomberg New Energy Finance*, "H1 2013 India Market Outlook" pp. 10

¹⁰ *Bloomberg New Energy Finance*, "Solar – India – Analyst Reaction: India's 3.6 GW Draft Plan for Phase II of Solar Mission" (17 January 2013) pp. 1

¹¹ <http://www.platts.com/RSSFeedDetailedNews/RSSFeed/Oil/27891748>

¹² <http://www.thehindubusinessline.com/economy/article4647739.ece>

About the Office of Energy and Environmental Industries

The Office of Energy and Environmental Industries (OEEI), a part of the International Trade Administration's Industry and Analysis unit, is dedicated to enhancing the global competitiveness of U.S. energy and environmental companies, expanding their market access, and increasing their exports. Industry analysts perform strategic research and analysis in order to shape and implement trade policy, create conditions that encourage innovation, lower the cost of doing business, and promote U.S. economic growth. For more information or to access other reports related to the Renewable Energy and Energy Efficiency Export Initiative, contact the office at (202) 482-5225 or visit www.export.gov/reee.

The International Trade Administration's mission is to create prosperity by strengthening the competitiveness of U.S. industry, promoting trade and investment, and ensuring fair trade and compliance with trade laws and agreements.



INTERNATIONAL
TRADE
ADMINISTRATION
