

The ADB logo consists of the letters 'ADB' in a white, serif font, centered within a dark blue square.

ADB Support for Solar Power In India

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A decorative graphic in the bottom right corner consisting of several thin, white, wavy lines that curve upwards and to the right, creating a sense of movement and energy.

ADB Windows of Operations

1. Sovereign operations (i.e., public sector)

- Financial assistance directly to governments and government agencies
- 90% of ADB's existing business

2. Non-sovereign and private sector operations

- Financial assistance to private enterprises and SOEs without government guarantees
- 10% of ADB's existing business but growing rapidly (\$1.5 – 2.0 billion committed in each of last 4 years) – 50% by 2020

Key Focus on Renewables in India

Sovereign financing for:

- energy efficiency programs with state electricity boards
- credit lines for IREDA, other financial intermediaries
- development of small and ROR hydro projects (Himachal Pradesh, Uttarakhand)

Private Sector financing for:

- Wind power generation projects (Maharashtra, Gujarat)
- Mundra UMPP (promoting supercritical boiler technology)
- Anchor investor in new clean energy private equity funds, cleantech venture capital funds
- Equity financing for a new renewable JV company (incl. wind, small hydro, biomass, solar)

India's National Solar Mission (NSM)

- 20,000 MW of installed capacity by 2022
 - Government-nominated single buyer (NVTN), blends expensive solar power with “extra” thermal power from NTPC to sell to SEBs
 - 1,100 MW in Phase 1 (2010-2013), 50% photovoltaic and 50% solar thermal; scale up in later phases
 - Reverse tariff bidding underway for first NSM allocations
 - States are also pursuing solar power projects independently (especially Gujarat – 900 MW+ allocated)
- Make India a solar manufacturing hub – indigenize production, lower the levelized cost of solar energy
- Promote off-grid and demo schemes (solar hybrid, CSP with storage)

ADB Support for India's NSM

- Build capacity within key ministries
- Examine structural and bankability issues of NSM scheme:
 - help mitigate credit and offtake risks
 - isolate key technical and regulatory risks
- How to reduce the cost of capital (and risk premiums by banks and investors) -- 85% of total costs of a solar project over 25 year life are upfront capex – cost matters
- Demo and small projects are necessary, but need to promote building projects at optimal scale (e.g., 100-150 MW for solar thermal, 30-50 MW for photovoltaic)

ADB Support for India's NSM (cont.)

- Ongoing technical assistance to the Ministry of New and Renewable Energy (MNRE) for implementation of Phase I
 - Technical assistance to Gujarat and Rajasthan for development of large-scale solar parks (1,000 – 3,000 MW)
 - \$1.25 million capacity building TA at commercial banks for technical due diligence – how to adapt solar technology for implementation in India, what key issues to address to reduce risks
 - \$150 million facility for partial credit guarantees of commercial lenders for first wave of solar power projects (2-25 MW) – risk sharing on a 50/50 basis, long-term lending
- ➔ **Financing is not the most critical role for this initiative – proper risk mitigation will leverage commercial debt and investment**

ADB's Asia Solar Energy Initiative

- Announced by ADB's President in May 2010
- Finance 3,000 MW of solar power in developing Asia over the next 3 years (India is a major part of this target) – both public and private sector investments
- Establish a knowledge-sharing platform/forum between governments, private sector and technology providers (the “Asia Solar Energy Forum”)
- Leverage new capital from donors to accelerate the deployment of solar power in developing Asia:
 - partially guarantee risks that neither banks nor the Government can underwrite (like solar irradiance);
 - provide limited capital grants or revenue subsidies (tariff adders) for solar projects developed and transparently awarded (e.g., solar parks in Gujarat and Rajasthan)

Key Challenges for Financing Solar

- Bankable PPAs are still an issue – not a solar specific issue
- Help reduce the risks, improve the rewards for first movers
- Raise long-term, fixed-rate local currency financing for projects; unfunded risk participation by commercial banks (example: Thailand Bangchak solar project)
- How to leverage the capital markets for financing (e.g., climate change PPP fund, solar park finance vehicle, bond guarantees)
- Regulatory independence and enforcement of renewable purchase obligations (RPOs) as important as feed-in tariffs and policy

Thank You – Questions?

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