

Renewable Energy Financing in India: Policy Recommendations

CPI-ISB Energy and Environment Program



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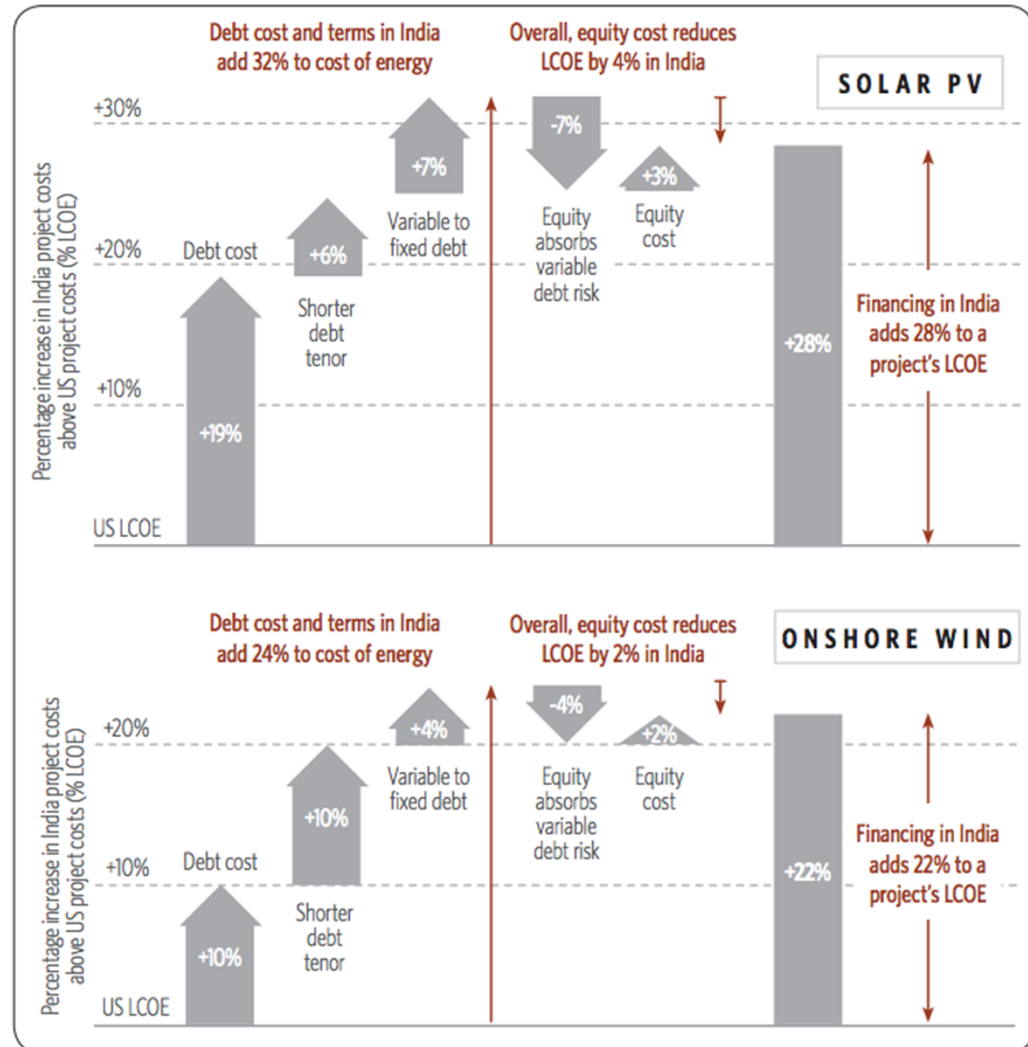
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The CPI-ISB Energy and Environment Program

- Collaborative research program between [Climate Policy Initiative](#) and [Indian School of Business](#)
- **Goal:** De-carbonize Indian energy system, via market transformation
- **Approach:** Policy research, with focus on markets, industry structure and finance
- **Output:** [Reports](#), based on in-depth analysis, with implementable policy implications

Fact: The cost of financing makes renewable energy (RE) expensive in India

- India aims to double existing RE capacity by 2017.
- RE is over 50% more expensive than conventional power, and requires policy support.
- Inferior debt terms – high (and variable) interest rate and short tenor – add nearly 30% to the cost of RE.
- *Policy implication:* the need for provision of low-cost, long-term debt



Source: [Meeting India's Renewable Targets – The Financing Challenge](#) (2012), CPI

Recommendation 1: *Provide concessional finance instead of existing federal policies*

Debt-related policies are more cost-effective and interest subsidy is an attractive short-term alternative

Impact of federal policies at a state level Feed in Tariff for Wind at INR 5/kWh

POLICY TYPE	POLICY	COST-EFFECTIVENESS POTENTIAL (%REDUCTION IN SUBSIDY COST)	SUBSIDY-RECOVERY POTENTIAL	ONE-YEAR BUDGET EFFICIENCY (MW PER INR 100 MILLION)
DEBT	Extended Tenor Debt	30%	110%	2.5
	Reduced Cost Debt	20%	98%	2.6
	Interest Subsidy	12%	0%	36.9
EXISTING	Accelerated Depreciation	18%	42%	35.7
	Viability Gap Funding	9%	0%	28.6
	Generation Based Incentive	3%	0%	19.7
BASELINE	Zero Federal Support	0%	0%	2.6

Results for solar energy are similar

Source: [Solving India's Renewable Financing Challenge: Which Federal Policies can be Most Effective](#) (2014), CPI

Recommendation 2: *Facilitate* capital markets in provision of low-cost, long-term debt

- Innovative financing mechanisms can reduce the cost of debt by up to 4.5 percentage points, increase tenor by up to 10 years, and reduce the cost of RE by up to 25%.
- Two attractive mechanisms:
 1. Credit enhancement of domestic bonds to AA
 - Ensure liquidity injection in bond markets
 - In particular, attract local institutional investors
 2. Reduction of hedging costs of FX borrowings
 - Use a portion of foreign reserves/exports to hedge
 - Explore more complex schemes: FX liquidity facility

Source: [Solving India's Renewable Financing Challenge: Instruments to Provide Low-cost Long-term Debt](#) (2014), CPI; [Finance Mechanisms for Lowering the Cost of Clean Energy in Rapidly Developing Countries](#) (2014), CPI

Recommendation 3: Create an RE fund

- A dedicated fund to support Recommendations #1 and #2
 - Provide low-cost, long-term debt
 - Facilitate low-cost, long-term debt
- Sourcing: Could use multiple sources/tranches
 - Budgetary support, including NCEF funds
 - Multilaterals/bilaterals, including WB, ADB, KfW, JICA
 - Capital markets, including from institutional investors
- Implementation: Do we need a separate fund?
 - IREDA: The RE development bank, but needs to become more innovative
 - IIFCL: Is innovative, but does not receive majority of RE funds



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