Public Finance as a Means to Promote Indigenous Manufacturing (SEI-1)

A joint India-U.S. research consortium funded under the *Joint Clean Energy Research & Development Center (JCERDC)*

Scientific Achievement:

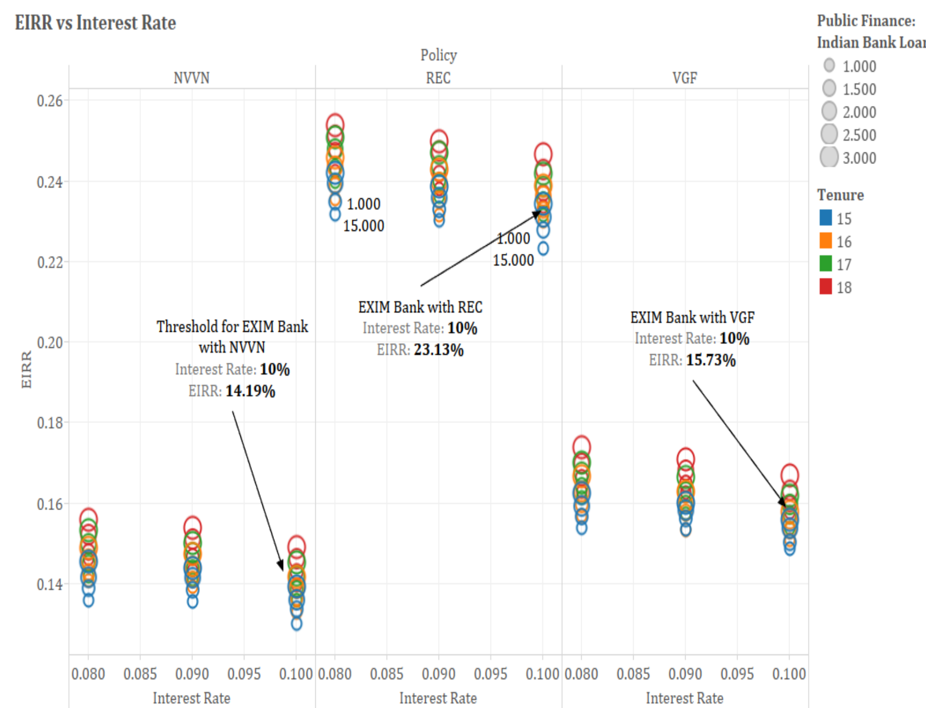
We developed a comprehensive financial model showing that if lower-interest-rate loans with longer tenures are available to developers using *Indian* modules, then comparable equity internal rates of return (IRRs) can be achieved (compared to developers using *imported* modules).

Significance and Impact:

This innovative scheme can reduce the cost of debt for developers using Indian modules, thereby promoting Indian manufacturing in the near future with a feasible business case for developers.

Research Details:

- Equity IRRs of developers using *imported* modules were found to be 1.5%–2% higher than IRRs for developers using *Indian* modules.
- The debt of developers using Indian modules was divided into two parts: (1) 25%–50% from commercial banks at 13% interest rate for 10 years; and (2) 75%–50% from public finance.
- Sensitivity analyses showed that the green bonds can be made available to the public at 8% with 18 years maturity period and Solar Energy Corporation of India (SECI) can take a 1.5% commission while making that corpus available to developers at 9.5%.



Equity Internal Rate of Return (EIRR) vs. Interest rate.

Publication: S. Ghosh, A. Nair, and S.S. Krishnan, Techno-economic review of rooftop photovoltaic systems: Case studies of industrial, residential and off-grid rooftops in Bangalore, Karnataka, *Renewable & Sustainable Energy Reviews* **42** (2015) 1132–1142. DOI: 10.1016/j.rser.2014.10.094

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