Developing Big & Small Ideas: How Can We Lower the Costs of Project Finance to Achieve Our 2020 Vision?

Proposal Presentation

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On behalf of-
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Problem: Financing Cost of Distributed PV is Too High and It Inflates the Cost of Solar Energy

- The cost of distributed PV includes the high cost of capital to finance PV projects

- The high cost of capital is a deterrent to broader adoption

- There are too few tax equity participants, and the double digit rates of return they require because of the risk they associate with the projects inflates the cost per kWh and thus the ultimate cost per watt of PV

- A reduction in risk will increase the number of participants in the tax equity market and create a lower required rate of return which will reduce the cost of capital

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Solution: Create a Solar Lease Program for Homeowners with Insurance Products to Achieve Single Digit Returns

- By adding a suite of insurance products to a solar lease program for homeowners, we will enable the underlying financing to be to more secure. This will make single digit returns acceptable, eliminating the need for today's double digit requirements

    1. **Long-term Supply Insurance:** This protects against the risk of manufacturers disappearing or being unable to supply replacement parts over the life of the lease.

    2. **Performance Insurance:** This addresses the need to insure the specified electricity to be generated from the solar system over the life of the lease.

    3. **Operating and Maintenance Insurance**: This covers any break-downs, malfunctions, and upkeep needed in the system.

    4. **Fund Insurance:** This product covers yield guarantees and tax guarantees in any underlying tax equity fund supporting the solar leases. Historically, the availability of yield insurance was a key driver of growth in low income housing finance and thus can play a similar role for solar.

- Each percentage point drop in financing results in significant savings on a cents per Watt basis

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- **Structure**- Develop a structure for the insurance products

- **Price**- Using data provided by SolarCity, Hartford Steam Boiler Inspection and Insurance Company (HSB) will determine the appropriate price of the insurance products

- **Sale**- Identify how to package and sell the insurance products to customers for seamless inclusion in solar lease offers

- **Next Step- Pilot Program:**

  HSB and SolarCity will pilot the products with 1,000 residential customers to refine the three objectives listed above.

Added Bonus:

- Adding insurance to a solar lease requires neither regulatory approval nor legislative action … it is ready to go today

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Cost Savings: Estimated Value in Dollars per Watt

- We estimate that insurance products will be an important part of reducing cost of capital, with the potential to create up to a 25% savings in cost of electricity to customers

- For example, in a California residential system, a one percent (1%) reduction in cost of capital (10% to 9% after-tax) is roughly equivalent to a decrease in cost of hardware of more than $.25 per watt*

- By the same rationale, reducing the cost of capital from 10% to 6% has more impact than reducing the price of a panel from $1.00 to $0.00 per watt
  - A 10% to 6% cost of capital decrease is equivalent to approximately $1.26 savings on a per watt basis

  As compared to-

  - A zero dollar per watt panel down from a one dollar per watt panel would only create a $1.00 of savings

- Ultimately, there is much more room for savings in cost of capital reduction than in cost of hardware

- Insurance will be an important part of this cost reduction effort

Example is based on a 5kW system in Northern California installed in 2012

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