



University of
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Session 1B: Financing: Not Your Typical Session

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Financing to Make Your Business Green: A Business Owner's Perspective

- Funding Components, Sources and Where to Get Additional Information
- Examples – Solar Energy is Used Here
 - Note: The numbers here are simplified, but are representative of reality

Business Owner's Perspective

- Renewable Energy Production is an Investment: Price/Cost Must be Less than Sum of Benefits Over Time, e.g., Prius
- Definition of investment: "...promises safety of principal and an adequate return." (Graham)

Funding Sources & Components

- Funding Sources
 - If Production is Owned by Business
 - Federal Incentives
 - State Incentives
 - Loan/Debt Funding
 - Savings from Avoided Electricity Costs
 - Net Metering Revenues and Credits
 - Competitive Grants
 - Power Purchase Agreement (Business buys electricity from Owner of Facility, e.g., Staples)

Federal Commercial Incentives

- Primary Noncompetitive sources
 - Stimulus Money (American Recovery Reinvestment Act) Production Tax Credits (PTC) = 30% of Eligible costs. Expires 12/31/10. This is cash in hand.
 - Investment Tax Credits – Businesses paying taxes may deduct 30% of eligible cost as a tax credit per IRS rules. No cash, reduced cash outlay later.
 - Loan guarantees: USDA Business & Industry Program
 - Clean Renewable Energy Bonds
 - US Dept. of Energy Loan Guarantee Program

Federal Incentive Data Sources

- Web site:
 - Comprehensive List: www.dsireuse.org
 - Treasury (PTC/ITC): <http://www.treas.gov/recovery/1603.shtml>
 - Dept. of Energy: www.lgprogram.energy.gov

State Incentives

- Commonwealth Solar II < 10 kW (Closed)
- Commonwealth Solar Stimulus: 10 – 200 kW – (Closed Right Now)
- Solar Renewable Energy Certificates - SRECs. Market based system pays auction price to generators of renewable power (e.g., \$250 + per 1,000 watts generated annually). Administered by MA Department of Energy Resources

State Incentives Data Sources

- DSIREUSA
<http://www.dsireusa.org/incentives/index.cfm?re=1&ee=1&spv=0&st=0&srp=1&state=MA>
- CEC
<http://www.masscec.com/index.cfm/page/Renewable-Energy-Generation>
- Department of Energy Resources
<http://www.mass.gov/?pageID=eoeesubtopic&L=3&L0=Home&L1=Energy%2c+Utilities+%26+Clean+Technologies&L2=Renewable+Energy&sid=Eoeea>

Loan/Debt Funding

- Assume you are the owner and the Cost of 100 kW PV (for example) Facility is \$7.00 per watt, or \$700,000
- Production Tax Credit of 30%
- SREC payments (minimum amount of \$250 per SREC) = \$25,000 annually
- Must fund construction

Power Purchase Agreements

- Private entity purchases, installs, owns and operates and maintains customer-sited renewable equipment
- Customer engages in little ownership risk, carries no upfront costs while reducing electricity costs
- Example: Staples contracts with SunEdison through PPAs for electricity
- Web site information:
<http://www.nrel.gov/docs/fy10osti/46723.pdf>

Funding Example (Owned - Not a PPA)

- **Cost:** Capital Cost for 100 kW system @ \$7 Watt = \$700,000
Less Prod. Tax Credit (30%) = - \$210,000
Carrying Cost for portion not funded from
incentives. Balance - \$490,000 @ 5.25, 10 yrs = \$63,088/yr

- **Funding It**

State Incentive: Solar Renewable Energy Certif.

(SRECs) \$250 - \$500 per kW annually

(10 years) Price Determined by market.

\$25,000 - \$50,000

Electricity Savings: - \$0.17 - \$0.34 per kWh/yr =

\$17,000 - \$34,000

Total Funds Available to Pay Loan

\$42,000 - \$84,000

Net Cost/Benefit

- \$21,088 - +\$20,912

Grants – Treat as bonus because of competitive nature.

Accounting factors – e.g., accelerated depreciation – are not included here.

Examples

- PV installation on mixed use building in Western MA received check from Treasury for 30% of eligible cost (27% of total project) 82 days after filing application
- Small rural business received USDA REAP grant and MTC (predecessor of CEC) grants for 52% of 100 kW PV project
- UMass project received 20% funding from private grant and will file SRECs for next 10 years.

Other Sources – Narrower Scope

- Net metering funds
 - Size must be > 60 kW for payment
 - < 60 kW receives credit
 - Neighborhood net metering is possible
- Competitive Grants
 - USDA – Rural Development – Renewable Energy for America Program (REAP)
 - Dept. of Energy – Comb through Grants.gov

Owner's Perspective Revisited

- Be clear about three things.
 - Facility costs – Could and do change.
 - Funding/Incentives/Savings – Could and do change
 - Energy cost projections. You can't predict, but you must project. "Day to day the markets are voting machines. Over time, they are weighing machines." How do I protect my business from electricity price increases beyond my control?