

Clean Energy Incentives

Vincent DeVito

vdevito@bowditch.com

ofc.: (617) 757-6518

cell: (202) 329-4070

Thursday, February 12, 2009

Boston Area Solar Energy
Association

Cambridge, Massachusetts



The Opportunity of Challenge

"One of the greatest challenges facing the world economy today is the United States' drive to increase energy security by reducing dependence on fossil fuels."

Examples of Solar PV Applications

Residential Retrofit



New Production Homes



Commercial & Public



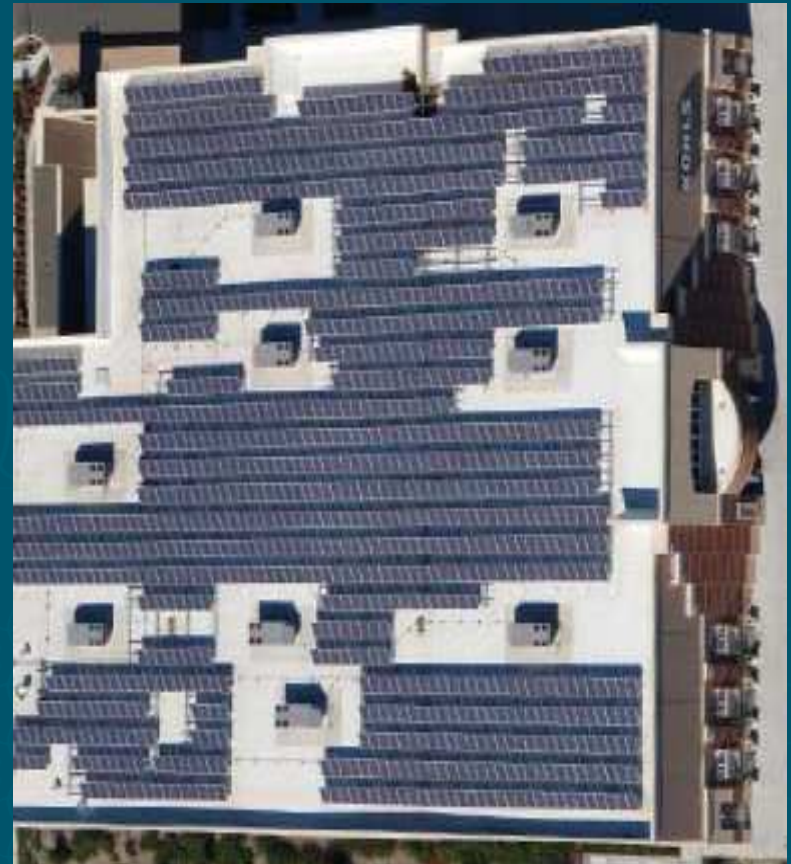
Power Plants



Who's Doing On-Site Renewables?

- Over 150 MW of solar PV was installed at 25,000 locations in the U.S. in 2007*.
- Kohl's Department Stores has converted 43 locations to solar power and will add another 85 sites (out of 1,004 stores). Capacity on California stores may total 25 MW.
- Macy's has solar panels on more than 50 stores.
- Safeway plans a pilot project to put panels on 23 stores.
- Wal-Mart has installed solar panels on stores or distribution centers as part of a pilot project.

* U.S. Solar Market Trends 2007, August 2008, IREC. This figure includes an 8.3 MW system installed in Alamosa, Colorado.



Challenges to On-Site Renewable Energy

- Project Drivers / Cost
- Site Owner Real Estate Issues
 - Liability / Ownership / Space / Security
- Local Regulatory Issues
 - Definition of Public Utility
 - Third-party ownership allowed?
- Navigating Local & Federal Incentives
 - Eligibility for multiple incentives
- Financing Options
 - Public / Private

Renewable Energy Project Drivers

- Large, predictable energy needs:
 - High electricity prices from utility providers
 - High natural gas prices
- Federal tax incentives (value is dependent on large tax appetite)
- State regulatory structure
 - Renewable portfolio standards (RPS)
- Cost of money
 - Credit-worthiness of power purchaser for financing
- Geographical Factors
 - Substantial rooftop space, parking lots, or open fields for on site, distributed generation projects (solar, biomass)
 - Solar radiation, proximity to biomass supplies, wind resource

Is Renewable Energy Too Expensive?

- Solar PV systems have a high capital cost but no fuel cost, almost zero operating cost, and a life of 20 –30 years.
- Many U.S. Companies installing solar electric are beating the price of electricity from the local utility, and sometimes selling power back to the utility.
- Third parties with appetite for tax credits provide the capital.
- Wind energy is nearly cost-competitive with non-renewable energy alternatives (gas, peak power).
- Biomass can provide cost-effective power if fuel source is affordable, in close proximity.

Real Estate Owner Concerns in Solar PV

- Security measures/theft and vandalism prevention
- Liability / Insurance
- Structural Engineering
- Roofing Warranties
- Appearance/Esthetics
- Environmental Attributes
- Promotional Rights
- Site Lease vs. Site License
- Zoning
- Building Code
- Solar Easements
- Private property restrictions
- Approvals from lenders
- Sufficient space

Local Regulatory Issues

- The sale of electricity is regulated at both the federal and state level.
- The definition of a public utility varies among states:
 - Renewable power sales may inadvertently result in public utility designation.
- Interconnection and net metering issues.
- States or localities may have restrictions on:
 - Ownership or sale of RECs separate from electricity.
 - Executing site leases for renewable facilities on public property.
 - Third-party ownership of renewable facilities.
 - Entering into long-term power purchase agreements (PPAs).

Sample of Ownership/ Financing Options

- **Public Ownership (tax-preferred financing):**
 - Low-interest tax-exempt financing available if eligible.
 - Zero-interest rate Clean Renewable Energy Bonds (CREBs) financing under IRS allocation.
- **Third-party Ownership (private owner utilizes tax benefits):**
 - Energy user signs power purchase agreement (PPA).
 - Financing pre-paid energy contracts with tax-exempt financing.
 - Other tax credits: New Markets Tax Credit (encourages investment in low-income areas), Low-Income Housing Tax Credit.
 - Direct subsidies, preferred loans, revolving funds.
- **Combination of Public and Private Ownership Options**

Parties to On-Site Renewable Energy Projects

1. Building Owner
2. Building Tenant
3. System Developer
4. System Supplier / Installer
5. PV System Operator
6. PV System Owner
7. Power Purchaser
8. Lenders
9. Tax Investors



RECs and Carbon Credits

- A Renewable Energy Credit = 1 megawatt-hour (MWh) of electricity generated from an eligible renewable energy resource. A green energy provider (a wind farm or dairy with methane-propelled electrical generator, for instance) is credited with one REC for every 1,000 kWh or 1 MWh of electricity it produces.
- A Carbon Credit or carbon offset = one ton of carbon dioxide removed from the air. In the U.S., a federal certification method has yet to be adopted. The Regional Greenhouse Gas Initiative permits the auction of allowances.
- Carbon Credits promote low carbon technologies while RECs provide a production subsidy to electricity generated from renewable sources.

Specific Incentives for Renewable Energy Investment

To take full advantage of the programs and incentives for renewable energy development, an investor should hire knowledgeable counsel to explore the opportunities available from several sources.

- Incentives are available from:
 - U.S. Department of Energy (DOE)
 - U.S. Department of Agriculture
 - U.S. Department of Housing Urban Development
 - U.S. Department of Transportation
 - U.S. Environmental Protection Agency
- Each state and local government also has specific agencies assigned to implement their respective renewable energy incentives and programs.

Incentives and Programs

Corporate Tax Incentives

- Allow corporations to receive credits or deductions ranging from 10 percent to 35 percent against the cost of equipment or installation to promote renewable energy equipment.
- The Production Tax Credit provides businesses with a credit for each kilowatt-hour of electricity produced for a term of operation for wind, solar, bioenergy, and other installations of clean energy technologies.

Incentives and Programs

Grant Programs

- Federal agencies such as DOE, the Environmental Protection Agency and the Department of Agriculture offer many programs designed to encourage research, development and deployment of renewable energy.
- States offer a variety of grant programs to encourage the use and development of renewable energy technologies, and some focus on promoting a particular type of renewable energy, such as wind technology.
- Grants are available to the commercial and industrial sectors.

Incentives and Programs

Industry Recruitment Incentives

- Industry recruitment incentives are efforts and programs designed to attract renewable energy equipment manufacturers to a particular locale.
- Renewable energy industrial recruitment usually consists of financial incentives, such as tax credits, grants, or a commitment to purchase a specific amount of the product.

Incentives and Programs

Production Incentives

- Provide project owners with cash payments based on electricity production on a \$/kWh basis, as is the case with the Federal Renewable Energy Production Tax Credit.

Property Tax Incentives

- Available property tax incentives typically follow one of three basic structures: exemptions, exclusions and credits.

Incentives and Programs

Sales Tax Incentives

- Sales tax incentives typically provide an exemption from the state sales tax for the cost of renewable energy equipment.

Construction and Design Policies

- Construction and design policies include green building programs and energy codes that require incorporation of renewable energy technologies into new construction projects.

Incentives and Programs

Solar and Wind Access Laws

- Solar and wind access statutes provide for easements or access rights.

Clean Renewable Energy Bonds

- Recent legislation created nearly \$800 million worth of Clean Renewable Energy Bonds.
- The owners of the bonds receive federal tax credits instead of tax-free interest payments from the bond issuer.

Solar Investment Tax Credit

- Emergency Economic Stabilization Act of 2008 - Contains a number of tax incentives designed to encourage both individuals and businesses to make investments in solar energy.
- Includes an 8-year extension of the section 48 business solar investment tax credit (ITC) and the section 25D residential through December 31, 2016.

Corporate Tax Credits

- Wind December 31, 2009 2.0¢/kWh
- Closed-loop Biomass December 31, 2010 2.0¢/kWh
- Open-loop Biomass December 31, 2010 1.0¢/kWh
- Geothermal Energy December 31, 2010 2.0¢/kWh
- Landfill Gas December 31, 2010 1.0¢/kWh
- Municipal Solid Waste December 31, 2010 1.0¢/kWh
- Qualified Hydroelectric December 31, 2010 1.0¢/kWh
- Marine and Hydrokinetic (150 kW or larger) December 31, 2011 1.0¢/kWh

The duration of the credit is generally 10 years after the date the facility is placed in service, but there are two exceptions.



Advanced Energy Initiative

Advanced Energy Initiative

- Requires participation from the private sector.
- Implementation of alternative energy technologies will be a regional, national, and global cooperative endeavor which requires skillful counsel to navigate the system and execute transactions.

Advanced Energy Initiative

- Increases funding for cleaner energy technologies.
- US Government intends to fund top technologies over the next two decades.
- Technologies at the top of this cleaner energy list are:
 - Commercially competitive ethanol
 - Solar energy
 - Wind power
 - Near-zero emissions coal burning technologies

Loan Guarantee Office

- The U.S. DOE established the Loan Guarantee Office to highlight the government's seriousness toward its alternative energy objectives.
- Recently, the DOE issued proposed rules for the program which are open for comment.

Modernizing and Expanding Electricity Infrastructure

- Requires a focused collaboration among investors, regulators, and industry.
- U.S. has created investment opportunities and incentives by adopting several provisions of the 2005 Energy Policy Act.
 - Granted FERC the authority to approve mandatory reliability standards for the nation's power grid.
 - Allows the designation of energy corridors on federal lands in the U.S.

Modernizing and Expanding Electricity Infrastructure

- The Federal Energy Regulatory Commission has been authorized to site interstate electric transmission lines when cooperation has failed and investment is required and otherwise secured.

Renewable Energy Investment Enthusiasm

With energy prices frequently visiting all-time highs, and petroleum companies reporting impressive profits, now is an exceptional time to invest in the U.S. renewable energy market and the energy economy of the future.

- John Deere launched a business to help harvest the power of wind. This business will help finance an expansion of wind energy projects across the U.S.
- Warren Buffet formed the MidAmerican Energy Company as one of the largest U.S. owners of wind-powered electric generation.
- Microsoft founder Bill Gates formed a joint venture through his investment firm Cascade Investment. This endeavor will add their brand of technological expertise to the pursuit of renewable energy alternatives.



Overview of Green Communities Act

- Creates market for energy efficiency to compete with supply – utilities to invest in all cost-effective energy efficiency.
- Partners state with towns/municipalities to implement energy efficiency and renewables.
- Expands renewable energy goals through increase in RPS minimum standard and additional RPS classes.
- Enhances market opportunities for renewables through municipal ownership, net metering, and utility PV ownership.
- RGGI authorization.

Types of Tax-Exempt Bond Financing

- 501(c)(3) Organizations

- In MA, issued by MassDevelopment or MassHEFA through conduit borrower.
- Organization must be 501(c)(3) non-profit entity.
- At least 95% of the bond proceeds must be spent on capital expenditures.
- Not greater than 5% of the issue may be used for any private business use, or unrelated trade or business.

- Manufacturing Facilities

- Generally issued by MassDevelopment through conduit borrower.
- Aggregate amount of bond issue must be less than \$10,000,000.
- Capital expenditures of borrower, principal users & related person with respect to municipality in which bond financed facility is located are counted against the \$10,000,000 limitation (subject to certain exceptions).

Types of Tax-Exempt Bond Financing

(Continued)

- Proceeds must be used to provide for a manufacturing facility.
 - Proceeds cannot be used to acquire used property (exception for existing buildings provided certain level of proceeds are used for rehabilitation).
 - Subject to state volume cap allocations. Allocations based on a variety of measures (i.e. facility location, job creation, business type, etc.).
-
- Municipal Bonds
 - Issued by state or local governmental authorities.
 - Issuing power established statutorily.
 - Usually secured by governmental authority's taxing power.
 - Bonds issued to finance vast array of public/government projects (i.e. schools, government buildings, water/sewage systems and plants, bridges/highways/roads, etc.).

Obama Administration

Energy and the Environment Objectives

- Help create five million new jobs by investing \$150 billion over the next ten years to catalyze private efforts to build a clean energy future.
- Within 10 years save more oil than we currently import from the Middle East and Venezuela combined.
- Put 1 million Plug-In Hybrid cars on the road by 2015.
- 10 percent of our electricity comes from renewable sources by 2012, and 25 percent by 2025.
- Implement an economy-wide cap-and-trade program to reduce greenhouse gas emissions 80 percent by 2050.

Obama Administration

Energy and the Environment Plan Overview

Market

- Crack Down on Excessive Energy Speculation.
- Swap Oil from the Strategic Petroleum Reserve to Cut Prices.
- Increase Fuel Economy Standards.
- Get 1 Million Plug-In Hybrid Cars on the Road by 2015.
- Create a New \$7,000 Tax Credit for Purchasing Advanced Vehicles.
- Establish a National Low Carbon Fuel Standard.
- A “Use it or Lose It” Approach to Existing Oil and Gas Leases.
- Promote the Responsible Domestic Production of Oil and Natural Gas.

Obama Administration

Energy and the Environment Plan Overview

Green Jobs

- Ensure 10 percent of Electricity Comes from Renewable Sources by 2012, and 25 percent by 2025.
- Deploy the Cheapest, Cleanest, Fastest Energy Source – Energy Efficiency.
- Weatherize One Million Homes Annually.
- Develop and Deploy Clean Coal Technology.
- Prioritize the Construction of the Alaska Natural Gas Pipeline.



Obama Administration

Energy and the Environment Plan Overview

Greenhouse Gas Reduction

- Implement an economy-wide cap-and-trade program to reduce greenhouse gas emissions 80 percent by 2050.
- Make the United States a Leader on Climate Change.
- Nation-wide renewable portfolio Standard.

A Maze of Opportunity

- Federal and state agencies have created a maze of periodic and long-term programs designed to encourage the research, development and deployment of renewable energy and renewable energy technologies in the United States.
- This overview provides only a sense of what is available for stakeholders seeking success in the newly excited U.S. renewable energy market.
 - Investors should research the portfolio of incentives available to them for each of their investment interests.
 - Each U.S. state has tiers of incentives with and without funding limitations.

Questions?

**For more information,
contact:
vdevito@bowditch.com
ofc.: (617) 757 6518
cell: (202) 329 4070**

