

FINANCING COMMUNITY-SCALE ENERGY EFFICIENCY & RENEWABLE ENERGY PROJECTS

Lessons and Observations...

My Perspective...

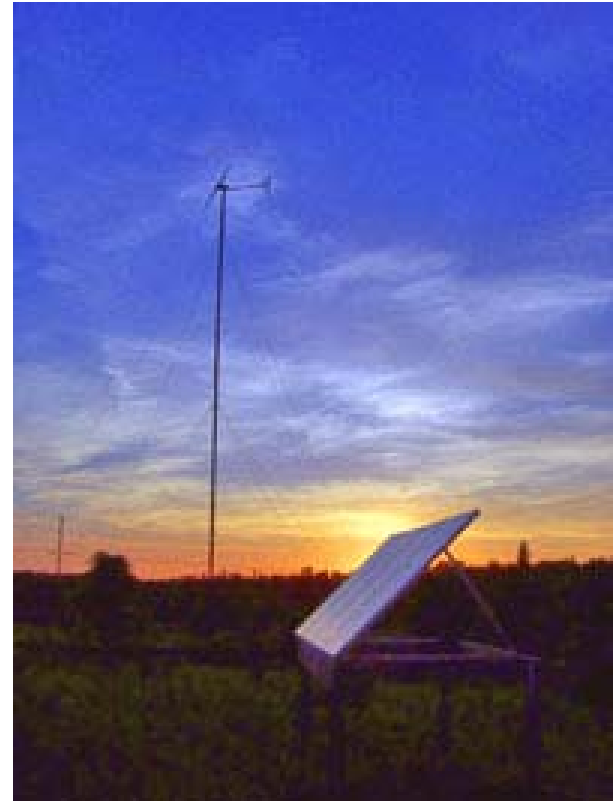
- As a consultant...
 - VEIC – ID & develop tools for financing efficiency
 - BERC – ID financing & ownership options for school wood heat conversions
 - Created financial model/business plans for Montpelier District Heating, Community Hydro, biodiesel cooperative, efficiency lending...
- Deputy Policy Director at VEIC/Efficiency Vermont
- Operated community development finance institution for 10 years

Defining the “Project”

- **Community-scale** = Owned/governed/responsive to community group, municipality or neighbors.
- **Renewable** = wind, solar, biomass, hydro
- **Efficiency** = regional/utility-wide programs to implement thermal, electric and process fuel efficiency
- **Energy** = Electric (~250kW – 5MW), thermal (>1MMBTU) or CHP

Examples of Projects

- ❑ Community project
- ❑ Biomass heat in schools
- ❑ Group net metering
- ❑ Efficiency financing programs
- ❑ Municipally-owned renewables
- ❑ District heating



The Opportunity

- Desire to “do something” about climate change
- Proven technologies
- Funding
 - Feed-in tariffs
 - ARRA \$\$, credits and incentives
 - State energy funds and incentives (if they survive...)
 - Sale of environmental attributes
- Regulatory pressure on utilities – RPS

Investor Barriers

- ❑ Credit crisis – who can use a tax credit?
- ❑ Inconsistent incentives & policies – state by state re: funding priorities, codes, etc.
- ❑ Volatility of regulations & availability of tax credits
- ❑ Complexity of project financing
- ❑ Hard to hit scale
- ❑ Highly fragmented and undercapitalized developers
- ❑ High transaction costs

Project Host Barriers

- Lack of capital
- Oversubscribed incentive programs
- Consumer confusion – “who do you trust?”
- Complexity
 - Permitting
 - Structuring the Financing
 - Technology/Construction
- Smaller projects = higher transaction costs

Systemic Barriers

- Regulatory volatility
- Credit crunch
- Development timeframes
- Site owner may not be the end beneficiary (“dislocated agency”)
- Few, if any, skilled project aggregators
- Lack of replicable and recognized models

Some of the Ownership Options

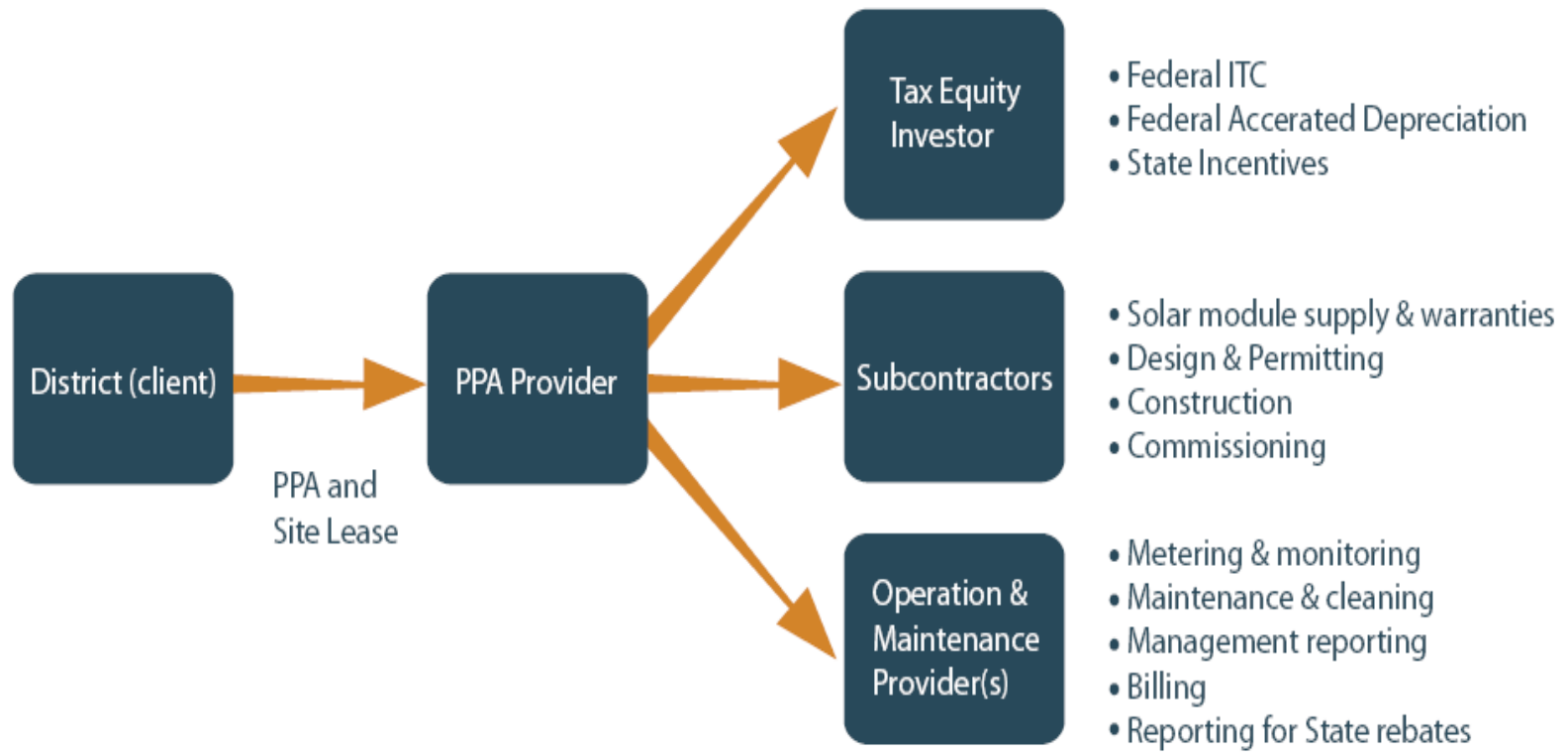
- 3rd party providers
- Cooperative
- Tax-advantaged corporations
- L3C
- Municipal
- Utility or pooled utilities
- Community-centric Developer/Owner

Some of the Financing Options

- Financial Mechanisms
 - Revolving Loan Funds
 - Utility On-Bill Financing
 - Tariff Installation Programs (e.g. PAYS®)
 - Tax Assessment Districts
- Community Funds for Renewable Energy Projects
- Buying Groups

Examples – 3rd Party Providers

How Power Purchase Agreement (PPA) Works



Cooperative Ownership

- Danish Wind Co-ops
- Toronto Renewable Energy Co-op
- Co-op Power – Pioneer Valley
Massachusetts
- Biofuel Production – Midwest



Municipal Ownership



Driven by Need, Funder or Municipal Utilities

- District Energy St. Paul –
 - Heat, cooling & electricity
 - 289 MW thermal; 25 elec.
- Hull Wind –660 kW elec.
- Nebraska 10.5 MW
MEAN Project at Kimball

Community-focused Developer

- Cooperative efforts in Denmark & Sweden
 - Community-led investment –Middelgrunden wind
 - Consumer-owned utilities –Høje Taarstrup (heat) and SEAS (electricity)
 - Farmer co-operatives
 - Co-operatively owned biomass supply chain
- Renew Fund – Scotland
- Our Wind Co-op – Pacific NW

Community-focused Funding

- Community Power Fund – Ontario
 - Currently \$3 million
 - Seeking \$10 million to become sustainable loan and investment organization
- Sustainable Development Fund – Pennsylvania
 - Capitalized by PA PUC from PECO Energy restructuring;
 - Operated by The Reinvestment Fund, a CDFI

Buying Groups

- Vermont Fuel Buyers
- Utility-facilitated purchase of renewable power – Cow Power
- Joint or cooperative purchase of solar – California, Oregon (NW Solar Co-op) Maine, NJ & DC (Mt Pleasant Solar Co-op)
- Wood pellet purchase – Acorn Energy (Middlebury), Coop Power (W. Mass)

Setting the Stage...

Would Vermont benefit from a financing entity, which could:

- Capitalize on existing resources;
- Facilitate aggregation & minimize transaction costs;
- Tap into community investment opportunities and build upon community enthusiasm for renewables?

Questions and Comments

- Is Vermont a large enough market area?
- How will stimulus \$\$ impact near and long-term demand?
- Are private \$\$ available? Amount and requirements?
- Additional Examples?
- Questions or Clarifications?

Financing Mechanisms


Source of Capital	Financing Mechanism	Collection Mechanism	Enhancements	Processor	Security Measures
Banks	Consumer loan (Secured or Un.)	Amortized payment bill	Guarantees	Utility	Unsecured
Other Borrowing (Bonds, credit card)	Mortgage (Secured Real Estate Loan)	Available cash flow	Pre-funded reserves	Municipality	UCC fixture filing
Public benefit charge	Line of credit (S or U)	Lease payment	Fixed below market rates	Other govt entity	Mechanics lien
Utility general funds	Lease	On utility bill	Interest rate buy down	Bank	Other lien on real estate
State or Municipality	Special municipal tax or fee levied	On property tax bill	Aggregation	Third party financing org	Lien on other property
State Finance Agency	Tariff installation program	Shared savings	Tax benefits	Nonprofit org	Disconnection for nonpayment
Manufacturers	Performance contract	Purchase of kWh or BTU	Environmental credits	Contractor	Special tax lien
Investors (inc. Pension funds)	Energy purchase agreement	ESCO bill	Arrearage forgiveness	Manufacturer	
Other 3rd party	Retail installment contract	Dock from salary	Include savings in DTI	Membership org or coop	

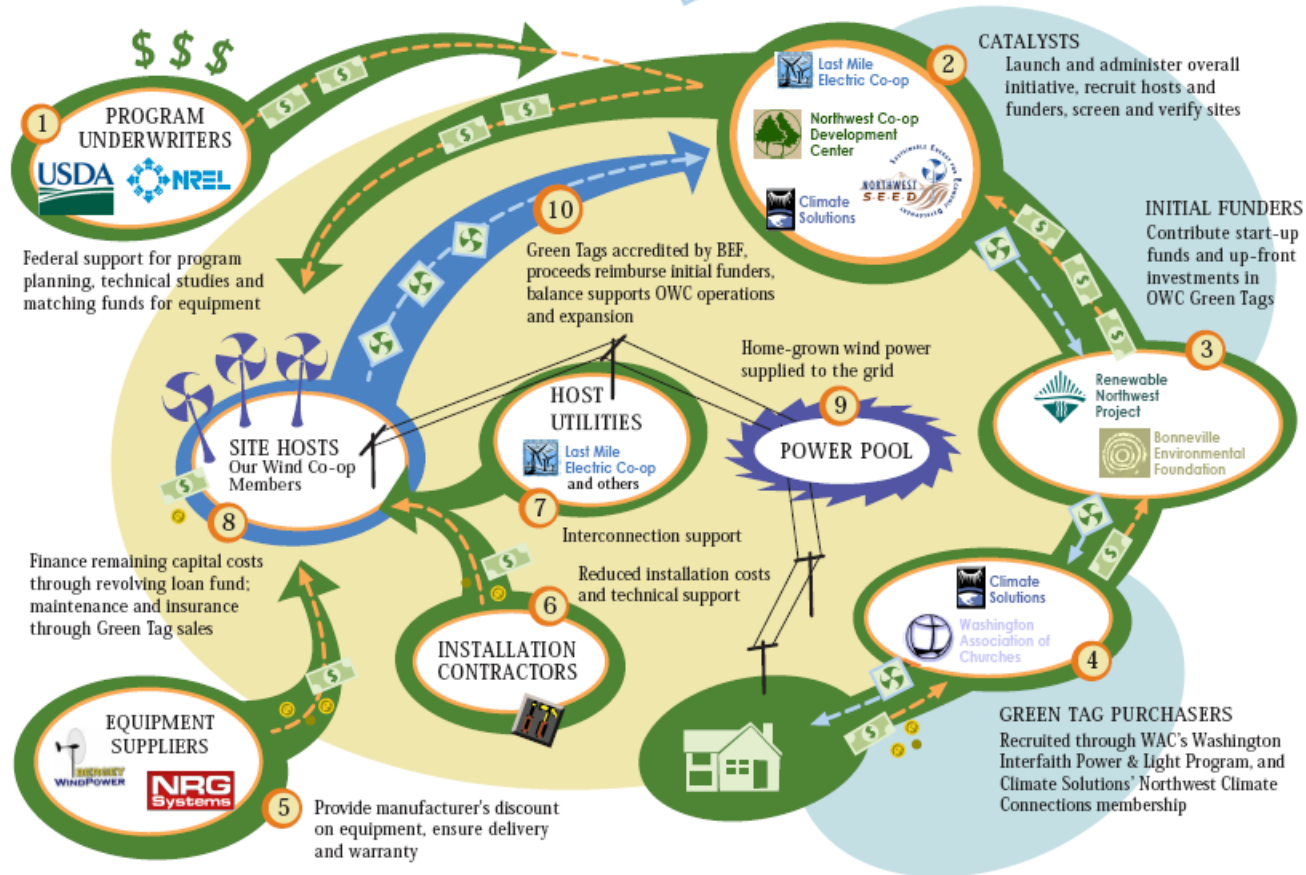
Adapted from Fuller report

Cooperative Ownership

Our Wind Co-op

financing home-grown wind development

 = green tags



BCC Solar Energy Advantage

- 3rd party owner and funder of PV in affordable housing
- Aggregates & optimizes project selection
- Secured \$3.5-4 million PV incentive funds from MTC
- Signed 6 PPAs
- 1 Megawatt of Capacity—20% of Mass Solar
- Eliminated capital & technical risks for hosts
- Eliminated payment risk for investor