

Wind Power for the Landowner

Project Financing and Incentives

Outline

- Financing small-scale projects (<100 kW)
  - Costs
  - Incentives
- Financing community and large-scale projects
  - Costs
  - Incentives
  - Ownership models

Initial Costs

- Resource Assessment - $0 to $5000
  - Wind Maps (lowest cost)
  - Local Met Data
  - Professional Resource Assessment (highest cost)
- Permitting - $0 to $500
  - Dependent on system size

Equipment Costs

- Turbine - $3000 to $250,000
- Tower - $2500 to $75,000
- Balance of System - $500 to $75,000
  - Inverter
  - Wiring
  - Meter (if necessary)
  - Breaker boxes and emergency switches
  - Concrete

Installation Costs

- Installer and Crew
- Site Prep
- Equipment rental (crane if necessary)
- Electrical Inspection
- Cost $500 to $100,000

Operations and Maintenance Costs

- Insurance
- Planned inspections
- Repairs
- Parts Replacement
- Cost - $0 and UP

Total Cost (10 kW Example)

Component	Cost
Resource Assessment and Permitting	$500
Turbine, tower and other equipment	$48,000
Installation	$5,000
O&M	$200/year
Total	$53,500 + $200/year

Financial Incentives

- Tax Incentives - Federal
  - Residential Renewable Energy Tax Credit
- Tax Incentives - State
  - State Residential Energy Tax Credit (RETC)
  - Business Energy Tax Credit (BETC)
- Loans
  - Small-scale Energy Loan Program (SELP)
- Grants
  - Energy Trust
  - USDA Rural Development's §9006 Grant

Financing Example (10 kW)

Total Installed Cost	$82,000
Bus. Energy Tax Credit	$27,000
USDA Grant	$20,500
Energy Trust Incentive	$27,000
Total Cost to Owner	$7,500

Cost Recovery

- Total cost to system owner = $7,500
- Average Annual Production = 16,000 kWh
- If 100% of electricity is net-metered, electricity is worth (16,000 kwh x $.07 /kwh) = $1120/year
- Cost recovery ~ 70 years to 7 years

Community Scale Wind Projects

Community Wind:

Locally Owned – One or more members of the local community have a financial stake in the project, other than through land lease payments, tax revenue, or other payments in lieu of taxes.

≤10 MW – Larger projects begin to encounter a set of development, financing, design, permitting and construction challenges that closely resemble those encountered by larger, commercial projects.

Increased capital requirement and risk, but can result in greatest pay back

Costs

Major Component	Items	% of budget
Turbine	• Turbine, tower, freight • FAA lights, Cold Weather Package	75 %
Balance of Plant (BOP)	• Site dev., foundations, crane • Labor • Electrical system, transformer	12 %
Interconnection	• High voltage line extension • Interconnect/metering • Labor	5%
Soft Costs	• Legal & Engineering • Permitting, studies • Financing fees • Insurance	8%

**Does not include operating costs (warranty, O&M, taxes, leases, etc.)*

Cost Examples

Component	3 MW	10 MW
Turbine	$3,740,000	$12,450,000
Balance of Plant	$630,000	$1,800,000
Interconnection	$220,000	$700,000
Soft Costs	$500,000	$1,000,000
Operating Costs	$185,000	$250,000
Total	~$5M + $185,000/year	~ $15M + $250,000/year

Feasibility Study Financing

- Renewable Energy Feasibility Fund
- Community Renewable Energy Feasibility Fund
- USDA Value Added Producers Grant (VAPG), Rural Business Opportunity Grants (RBOG), and REAP

Project Costs Tax Incentives

- Business Energy Tax Credit (BETC)
- Modified Accelerated Cost Recovery System (MACRS)

Project Financing

- SELP
- Energy Trust
- Clean Renewable Energy Bonds (CREBs)
  - 0% interest rate bonds issued by electric co-ops, governments, or certain lenders
  - Bondholders receive tax credits rather than interest
- USDA REAP, VAPG, Guaranteed Loan Program
- Other Debt Financing Options
  - Local Lenders
  - Regional Banks
  - Commercial Finance Companies
  - John Deere Renewable Energy

Production Incentives

- Production Tax Credit (PTC)
  - Federal program
  - Tax incentive
  - $.02/kWh
  - Recently extended through 2009
- Renewable Energy Production Incentive (REPI)
  - Public projects only
  - Federal program – subject to funding
  - $.015/kWh in 1993 dollars for first 10 years of project
  - Subject to availability of funds from appropriations
- Renewable Energy Credits (RECs)
  - Can be sold separately from electricity

Ownership Models

- Maximize tax incentives or low-cost financing
- 3 “best-fit” models for Oregon
  - Public Ownership
  - Partnership or LLC
  - “Flip” Structure
- Different ownership models may become practical

Public Ownership

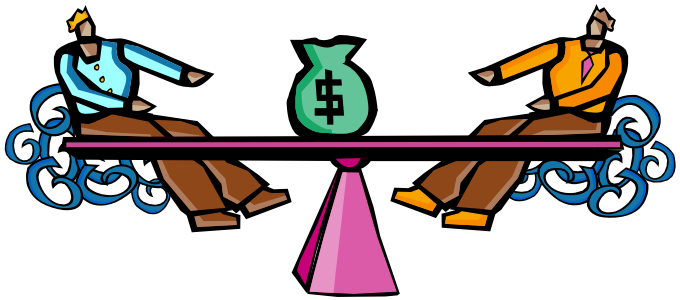
- Project owned by government entity or non-profit
- Cannot use PTC or MACRs
- Can use lower-cost public financing
- May have lower financial return requirements

Partnership or LLC

- Landowners and investors join to form partnership or LLC
- Can use tax incentives
  - "tax credit appetite" based on individuals' tax returns
- Liability stays within LLC so individual risk is lowered

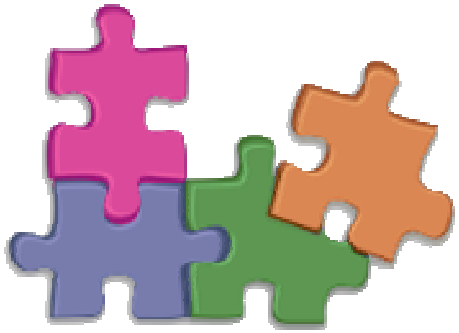
“Flip” Structure

- Local investor partners with corporate equity partner
- Corporate partner owns project for first 10 years to maximize tax incentives
- Ownership “flips” after 10 years to local investor



Conclusions

- Putting the project together can be complicated
- Be prepared to defend the financial model, production estimates and underlying assumptions to financial institutions, lawyers, power managers and potential investors
- Help is available -- seek assistance early on from experts!



Resources

- Northwest SEED
  - www.nwseed.org
  - www.nwcommunityenergy.org
  - Community Wind Guidebook: http://www.nwseed.org/publications/default.asp
- Energy Trust of Oregon
  - www.energytrust.org
- Oregon Department of Energy
  - www.oregon.gov/ENERGY/
- USDA
  - http://energy.ruraloregon.biz
- DSIRE Database – Federal & State incentives
  - www.dsireusa.org