

# Community Solar Project Development

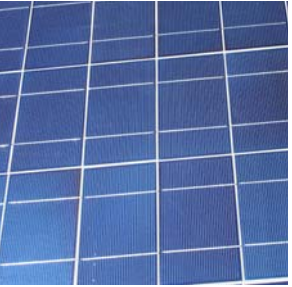
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**Leslie Moynihan**  
October 31, 2008

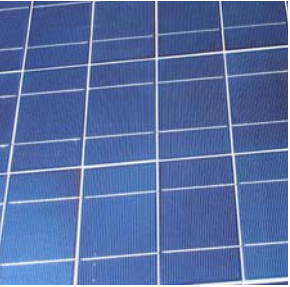
# Outline

- Project Conception
- Community Involvement
- Project Roles
- Project Considerations and Feasibility
- Nuts and Bolts of Getting it Done



# So you have an idea...

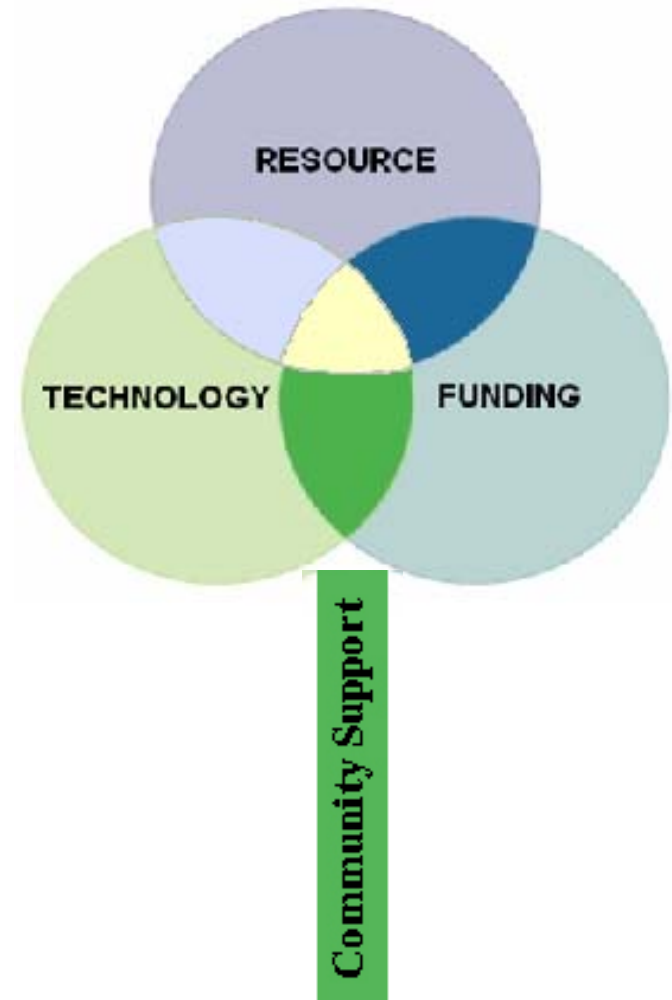
- That's how it starts
- Initial considerations:
  - What are *your* project goals?
  - Who is the community?
  - What are the *community's* goals?
  - Who do you need on board?



# Considerations for RE Projects



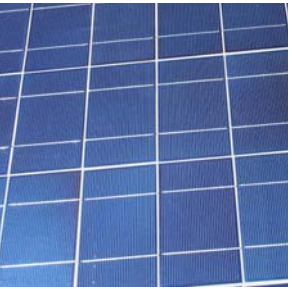
- Resource
- Technology
  - scale
  - acceptability
  - compatibility
- Cost/financing



# Roles for Project Participation

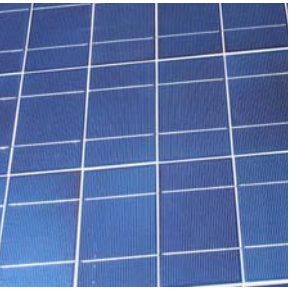


- Project Management
- Site host
- Operations and Maintenance
- Outreach
- Fundraising
- Electricity users/purchasers



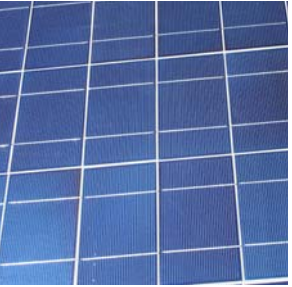
# Evaluating Feasibility

- Resource
- Site
- Interconnection, utility requirements
- Permitting
- Community acceptance
- Understanding Costs and Production
- Market
- Fatal flaws review



# Understanding Costs

- Capital Cost
  - Small-scale PV ~ \$8-10/Watt
- Community scale pros
  - Bulk pricing equipment
  - Labor \$ per Watt or in-house labor
- ...And cons
  - Interconnection (transmission upgrades)
  - Permitting

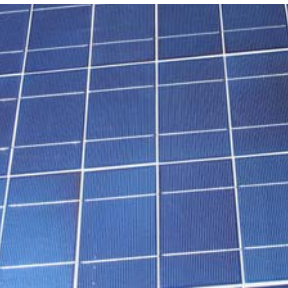


# Energy Production & Cost Effectiveness



- Expected power production?
  - Net-metering (up to 100 kW) vs. power purchase agreement
  - Evaluate investment based on estimated production
  - Sharing the investment does not necessarily increase the return on investment!
- ...But there may be other economies of scale.

**Set realistic expectations!**



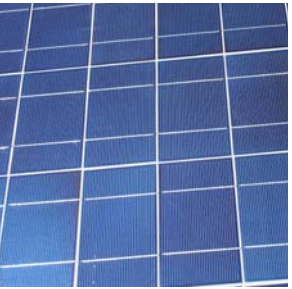
# Example Financial Analysis



- price tag ~ \$8000 /kW
- 20 kW system ~\$160,000
- Produces about 24,000 kWh/year

At \$.07/kWh, electricity value ~  
\$1680/yr...

95 yr payback!



# But Funding/Finance Opportunities Help

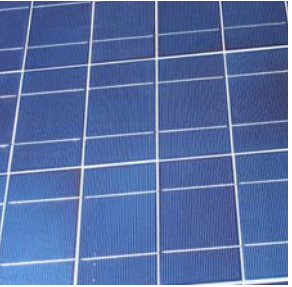


- USDA 9006
- Clean Renewable Energy Bonds (CREBs)
- Federal Production Tax Credit (PTC)
- Power Purchase Agreements
- Green Tags/ RECs- Renewable Portfolio Standard
- Traditional Lenders
- Accelerated Depreciation



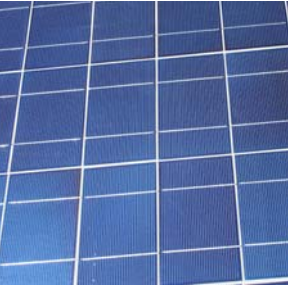
# Financing & Ownership Models

- Ownership often determined by access to best finance options.
- Decide upon an ownership structure, get legal assistance
- Capital Financing
  - Equity partners
  - Debt financing
  - Incentives
- Ongoing revenue
  - Power purchase agreement or net metering
  - Environmental attributes/RECs?
  - Production incentives?



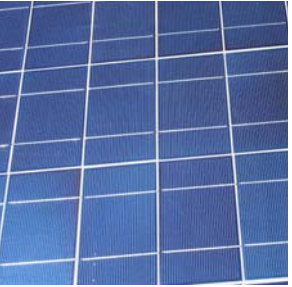
# Once You Have...

- Conducted Feasibility
- Garnered Community Support
- Developed a financial analysis
- Determined financing and appropriate ownership structure....
- **What's Next?**



# Pre-Construction

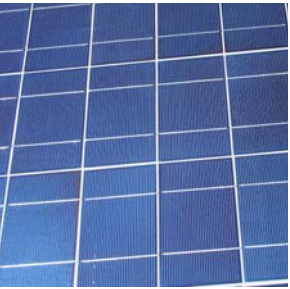
- Secure Site
- Obtain permits
- Interconnection plan and agreement
- Plan incentive use and complete applications
- Finalize capital financing
- Engage the Community



# Procurement & Construction



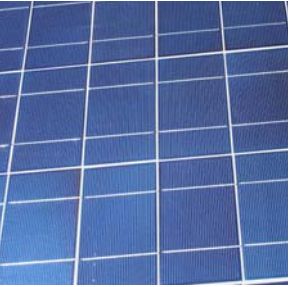
- Issue an RFP, get multiple bids
- Don't forget:
  - Interconnection/transmission equipment
  - Foundation design/build
- Construction



# Operations and Maintenance

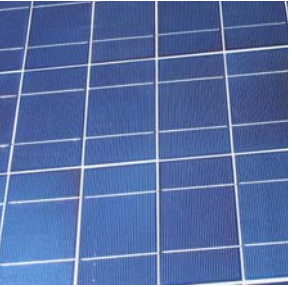


- Scheduled and preventative maintenance
- Maintenance contract with the manufacturer or a qualified firm
- Ownership may determine (ie utility maintains)



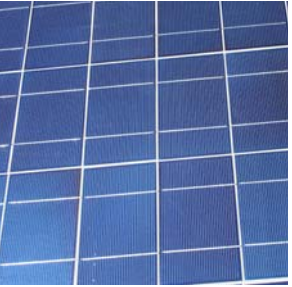
# Understanding Risk Factors

- Energy Production Factors
- Other Revenue Factors
- Other Project “Make or Break” Factors



# Conclusions

- Putting a project together can be complicated
- Be prepared to defend
  - financial model
  - production estimates
  - underlying assumptions
- Help is available -- seek assistance early on from experts!





# Some Self Promotion

## Current / Upcoming Projects:

- Seattle Solar City Initiative
- Community Energy Partnership Project
- NW Guide to Community Solar

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