



**Acorn Energy Co-op**

# Acorn Energy Community Solar Project

**2012 Vermont Community Energy and Climate Action  
Conference**

**December 1, 2012**



# Acorn Energy Co-op

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- Founded in 2008 as spinoff from Addison County Relocalization Network (ACORN)
- Focused on promoting renewable energy and energy efficiency for members in Addison, Rutland and Chittenden counties
- Initial focus on wood pellets and Solar Hot Water
- Completed three full years of successful operations
- Over 200 members, 600 on e-mail list
- Over 80 customers for pellets and SHW
- Board comprised of 7 - 10 members with substantial expertise in renewable energy, other co-ops, business, engineering, journalism
- Advisory Board of 16 area business, government and educational leaders

# Acorn Energy Solar One (AESO)

- **147.8 kW array located behind Middlebury Police Station on Lucius Shaw Lane**
- **528 280-watt Suntech panels**
- **Total Cost: \$666,000**
- **Expected Output/year: 172,000 kWh**
- **Expected Life: 25+ years**
- **First live connection to grid: 12/26/11**



# Development of Acorn Energy Solar One

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Main issues involved:

- Finding a suitable site
- Arranging financing – both equity and debt
- Applying for incentives – federal and state
- Signing up member-customers
- Selecting a vendor and completing contracts, etc.
- Managing a myriad of inter-related details



# AESO: Organizations Involved

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- **Collaboration among:**
  - **Acorn Energy Co-op (developer)**
  - **Town of Middlebury (provided land)**
  - **Co-operative Insurance Companies (50% equity financing)**
- Debt financing by National Bank of Middlebury and VEDA (25% each)
- Construction by Alteris (part of Real Goods Solar)
- Grid Connection: CVPS (now GMP)
- Technical Expertise: Encore Redevelopment of Burlington
- Attorney: Dunkiel, Saunders of Burlington
- Accountants: Bilodeau Wells & Co of Essex Junction



# AESO Timeline

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- June, 2010 - Early AESO planning
- June, 2011 - MOU with Town to lease land
- July - MOU with Co-op Insurance to provide equity investment
- August - Commitment letters from lenders
- October - Financial closing
- November - Construction began
- December 26, 2011 - Electricity generation began
- Concept to completion: 18 months
- Construction: 39 days



# AESO Groundbreaking

November 7, 2011







# AESO Construction



November 17



December 6



December 13







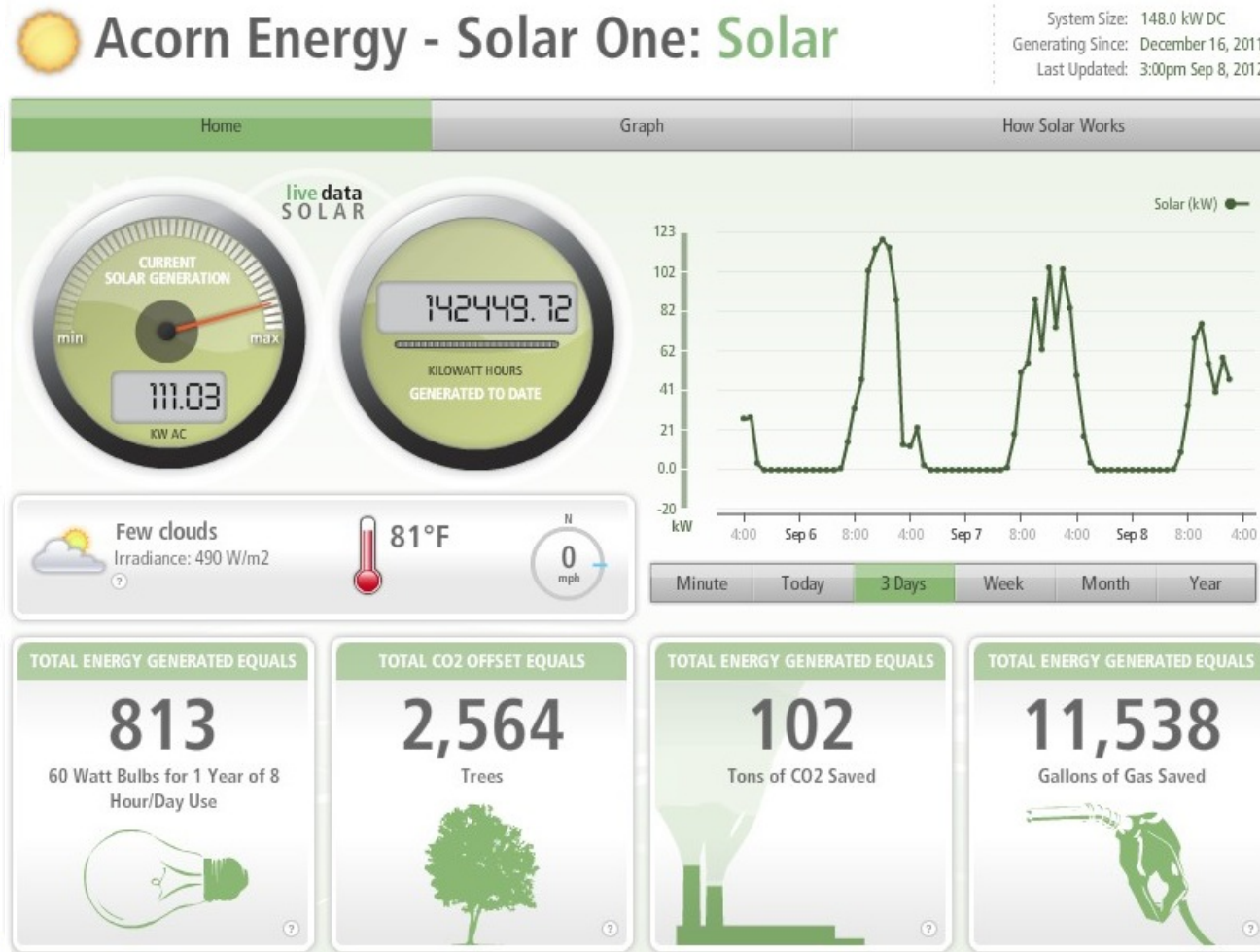
# Ribbon-cutting Ceremony

January 6, 2012



# Monitoring AESO Output in Real Time

[http://live.deckmonitoring.com/?id=acorn\\_energy\\_solar\\_one](http://live.deckmonitoring.com/?id=acorn_energy_solar_one)



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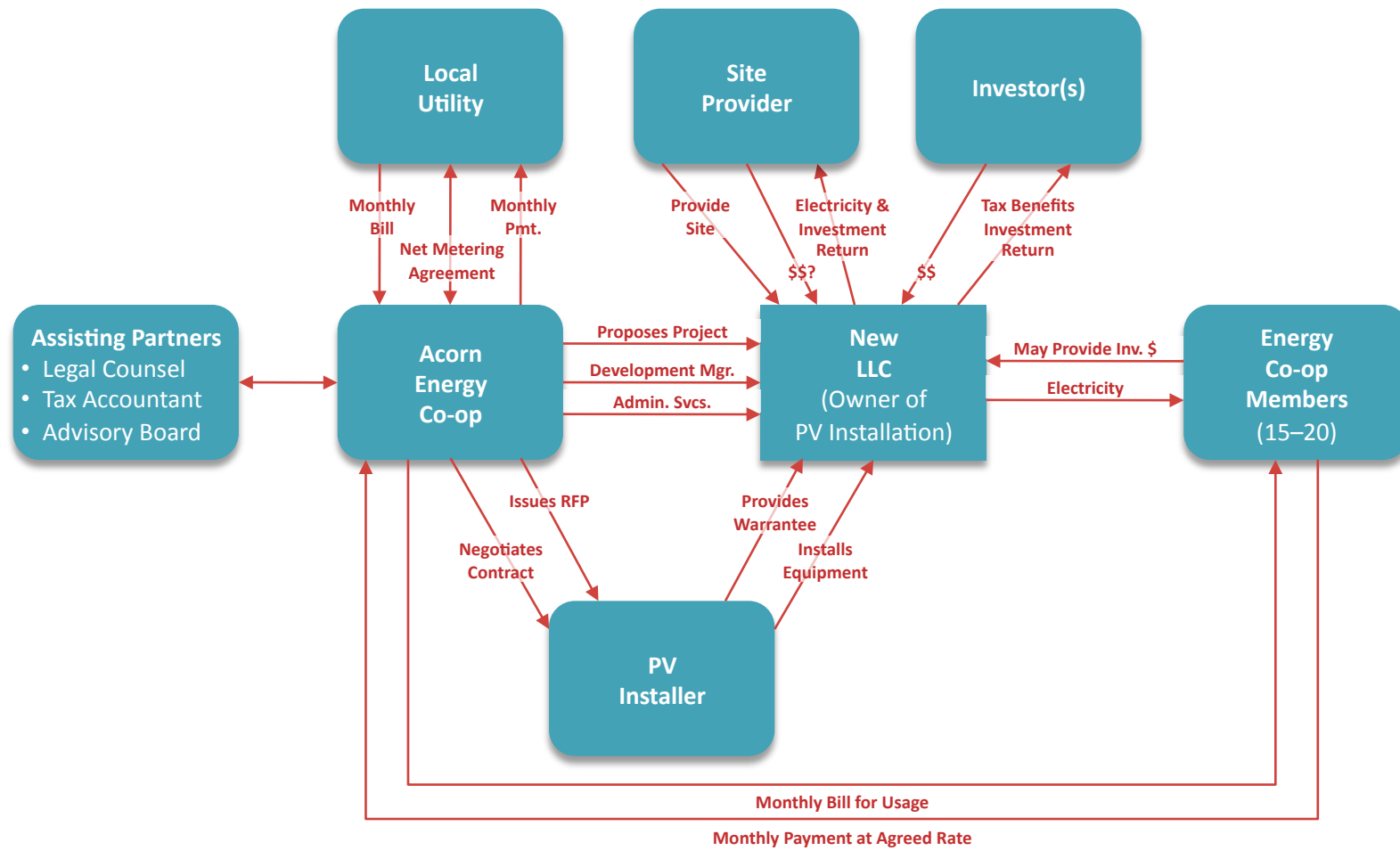


# Acorn Energy Co-op's Role as Project Developer

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- Locate a suitable site
- Develop preliminary design
- Organize appropriate legal (LLC) structure
- Secure lead equity and debt financing commitments and identify credits/incentives
- Sign up group of investors and subscribers
- Obtain necessary certificates and permits
- Evaluate proposals and select solar contractor
- Oversee project construction activities
- Provide for ongoing site maintenance

# Financial and Legal Structure



# 2012 Governor's Award for Environmental Excellence

- Presented to Acorn Renewable Energy Co-op for Acorn Energy Solar One,
- “In recognition of efforts to conserve and protect natural resources, prevent pollution, and promote environmental sustainability.”
- Award Ceremony at UVM on May 15, 2012

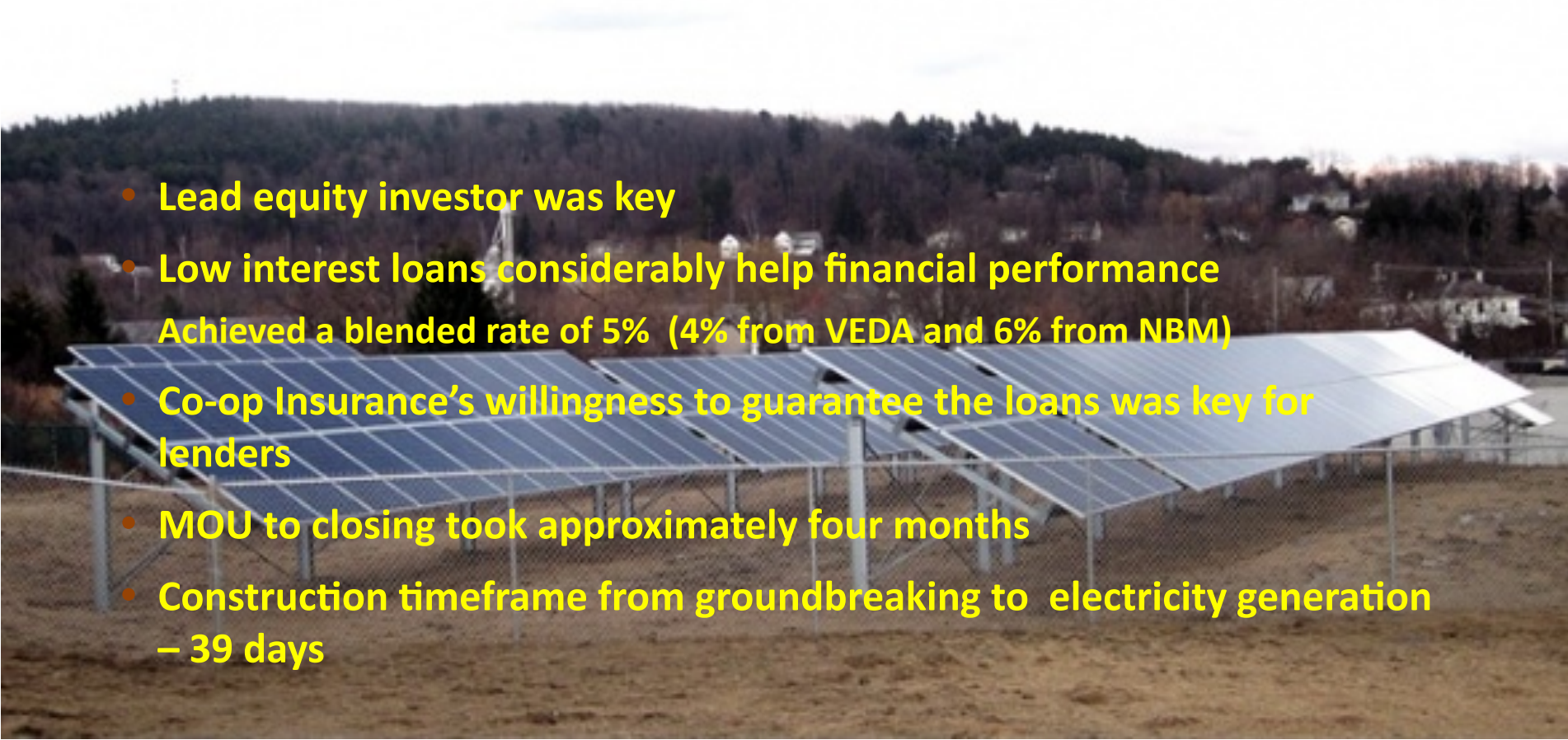






# Lessons learned – Financing and Construction

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- **Lead equity investor was key**
  - **Low interest loans considerably help financial performance**  
**Achieved a blended rate of 5% (4% from VEDA and 6% from NBM)**
  - **Co-op Insurance's willingness to guarantee the loans was key for lenders**
  - **MOU to closing took approximately four months**
  - **Construction timeframe from groundbreaking to electricity generation – 39 days**

[www.acornenergycoop.com](http://www.acornenergycoop.com)