Agenda

• Introduce New England Clean Energy
• Solarize Process Overview
• Solar Components
• Prices and Ownership
• How to Get Started
• Questions
About New England Clean Energy

- **Motivated**
  - We care about our customers
  - We care about the planet
- **Local**
  - Established in 2006
  - Based in Hudson, MA
- **Licensed**
  - Electrical Contractor
  - Construction Supervisor License
  - NABCEP Certified Solar PV Installer
- **Experienced**
  - 160+ solar electric systems
  - 25+ solar hot water systems
- **Installations performed by our employees**
New England Clean Energy Team

- Mark Durrenberger, *President*
- Bill Carr, *VP Operations, NABCEP Inspections*
- Jonathan Williams, *VP Installation & Service*
- Chris Oriel, *Manager, Solar Hot Water*
- Roy Van Cleef, *Technical Sales*
- Carmel Cowan, *Office Manager*
- Susan Boucher, *Marketing Director*
- Jim Elkind, *Solarize Program Manager*

Contact: info@SolarizeActon.com
Solarize Process

1. Sign Up
2. Schedule Energy Assessment
3. Site Review, Site Visit & System Design
4. Permitting & Installation
5. Make solar electricity
Evaluating a Solar Site
Optimal Sites

Roof

Ground Mount
Ground Mounted Site
Possible Site
Need to Cut Trees
Commercial
Multiple Roofs
No Roof – Ground Mount
PV + Solar Hot Water
If Solar Electric Won’t Work

Consider:

• Solar hot water
  – Works on many roofs too shady for solar electric
  – Contributes to pricing tiers
• Solar attic fan
• Energy detective
• Home energy diagnostic

Definitely have a home energy audit
System Components
Warranties

• Expected system life: 25+ years
  – Replace inverter during panel lifetime: $3k–$5k
• No regular system maintenance
• Warranties*
  – Solar modules: 25 years
  – Racking: 10 years
  – String Inverter: 10 years
  – Micro Inverter: 15 years
  – Workmanship: 10 years
  – Roof leaks: 10 years

*Contact New England Clean Energy for warranty issues
Mother Nature’s Snow Removal
Installation Process

• Roof Hardware or Foundation

• Inverter

• Solar Panels

• Wiring and conduit
Roof Attachment
Ground Mounts
Prices and Finances
Incentives and Benefits

- Net metering
- State grant
- 30% federal tax credit
- $1,000 state tax credit
- No impact on property tax for 20 years
- No sales tax on solar system
- Increase property value
- SREC income
### Solarize Pricing

System costs based on the following purchase prices

<table>
<thead>
<tr>
<th>Tier</th>
<th>Kilowatts Contracted</th>
<th>1 - 25</th>
<th>&gt; 25 - 50</th>
<th>&gt; 50 - 150</th>
<th>&gt; 150 - 250</th>
<th>&gt; 250</th>
</tr>
</thead>
<tbody>
<tr>
<td>SunPower e20</td>
<td>($ / W)</td>
<td>6.51</td>
<td>6.26</td>
<td>6.01</td>
<td>5.76</td>
<td>5.51</td>
</tr>
<tr>
<td>aleo / Bosch</td>
<td>($/W)</td>
<td>5.07</td>
<td>4.82</td>
<td>4.57</td>
<td>4.32</td>
<td>4.07</td>
</tr>
<tr>
<td>Siliken</td>
<td>Black / Black Frame ($/W)</td>
<td>4.89</td>
<td>4.64</td>
<td>4.39</td>
<td>4.14</td>
<td>3.89</td>
</tr>
<tr>
<td>Siliken</td>
<td>White / Silver Frame / No monitoring / Exterior Conduit ($/W)</td>
<td>4.76</td>
<td>4.51</td>
<td>4.26</td>
<td>4.01</td>
<td>3.76</td>
</tr>
</tbody>
</table>
As necessary for your project, add to the base price

<table>
<thead>
<tr>
<th>Site Specific Additions to Base Price</th>
<th>Flat Rate Increased Cost $ / system</th>
<th>Size Dependent Increased Cost ($/W)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pole mounted system (12 or 15 panels per pole)</td>
<td></td>
<td>1.68</td>
</tr>
<tr>
<td>Ballasted ground mount 24 panel system</td>
<td>2,400</td>
<td></td>
</tr>
<tr>
<td>Vent pipe move</td>
<td>530</td>
<td></td>
</tr>
<tr>
<td>Site modification or array relocation</td>
<td>250</td>
<td></td>
</tr>
<tr>
<td>Rafter deficiency</td>
<td></td>
<td>0.20</td>
</tr>
<tr>
<td>Supply side tap</td>
<td>500</td>
<td></td>
</tr>
<tr>
<td>Indoor conduit run for Siliken white / silver</td>
<td>400</td>
<td></td>
</tr>
<tr>
<td>Monitoring for Siliken white / silver</td>
<td>800</td>
<td></td>
</tr>
<tr>
<td>Micro-inverters</td>
<td></td>
<td>0.30</td>
</tr>
<tr>
<td>High power density solar PV panels upgrade from aleo/bosch</td>
<td></td>
<td>1.44</td>
</tr>
<tr>
<td>Steep roof (more than 32 degrees)</td>
<td></td>
<td>0.15</td>
</tr>
<tr>
<td>High roof (Height of gutter or edge of roof &gt; 20 feet)</td>
<td></td>
<td>0.15</td>
</tr>
</tbody>
</table>

Note that the table above lists only the most common adders.
# System Financials

## Siliken Black / Black

<table>
<thead>
<tr>
<th>Total Watts Installed</th>
<th>Tier 1</th>
<th>1 - 25 kW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample Cost</td>
<td>5,880 System*</td>
<td>$28,753</td>
</tr>
<tr>
<td>Out of Pocket Cost</td>
<td></td>
<td>$26,503</td>
</tr>
<tr>
<td>Tax credits</td>
<td></td>
<td>$8,951</td>
</tr>
<tr>
<td>Net System Cost</td>
<td></td>
<td>$17,552</td>
</tr>
<tr>
<td>Break-Even (Years)**</td>
<td></td>
<td>5.9</td>
</tr>
<tr>
<td>0 Down Lease,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.9% escalator</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>$70.76/mth</td>
</tr>
<tr>
<td></td>
<td></td>
<td>$0.099/kWh</td>
</tr>
</tbody>
</table>

** Assumes SRECs at $0.25/kWh

* 24 Siliken polycrystalline, black back sheet, black Frame, 245 W modules with string inverter

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Black / Black

White / Silver
## System Financials – All Tiers
### Siliken Black / Black

<table>
<thead>
<tr>
<th>Total Watts Contracted</th>
<th>Tier 1 1 - 25 kW</th>
<th>Tier 2 &gt;25 - 50 kW</th>
<th>Tier 3 &gt;50 - 150 kW</th>
<th>Tier 4 &gt;150 - 250 kW</th>
<th>Tier 5 &gt;250 kW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample Cost 5,880 W System*</td>
<td>$28,753</td>
<td>$27,283</td>
<td>$25,813</td>
<td>$24,343</td>
<td>$22,873</td>
</tr>
<tr>
<td>Out of Pocket Cost</td>
<td>$26,503</td>
<td>$25,033</td>
<td>$23,563</td>
<td>$22,093</td>
<td>$20,623</td>
</tr>
<tr>
<td>Tax credits</td>
<td>$8,951</td>
<td>$8,510</td>
<td>$8,069</td>
<td>$7,628</td>
<td>$7,187</td>
</tr>
<tr>
<td>Net System Cost</td>
<td>$17,552</td>
<td>$16,523</td>
<td>$15,494</td>
<td>$14,465</td>
<td>$13,436</td>
</tr>
<tr>
<td>Break-Even (Years)**</td>
<td>5.9</td>
<td>5.6</td>
<td>5.3</td>
<td>5.0</td>
<td>4.6</td>
</tr>
<tr>
<td>0 down lease, 1.9% escalator</td>
<td>$70.76/mth</td>
<td>$60.18/mth</td>
<td>$49.60/mth</td>
<td>$39.02/mth</td>
<td>$28.44/mth</td>
</tr>
<tr>
<td></td>
<td>$0.099/kWh</td>
<td>$0.092/kWh</td>
<td>$0.084/kWh</td>
<td>$0.078/kWh</td>
<td>$0.076/kWh</td>
</tr>
</tbody>
</table>

* 24 Siliken polycrystalline, black back sheet, black Frame, 245 W modules with string inverter
** Assumes SRECs at $0.25/kWh
# Savings & Income

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net System Cost (5,880 W, Tier 1)</td>
<td>$17,552</td>
</tr>
<tr>
<td>Estimated 10 Year SREC Revenue*</td>
<td>$16,758</td>
</tr>
<tr>
<td>Estimated 20 Year Electrical Savings</td>
<td>$37,680</td>
</tr>
<tr>
<td>Break even (years)</td>
<td>5.9</td>
</tr>
</tbody>
</table>

** Assumes SRECs at $0.25/kWh
Lease

- System owned by leasing company
- You get solar electricity from your system for free
- Term: 20 years
- Monthly payment depends on:
  - System size
  - Solar production (Roof angle, azimuth, and shade)
  - Customizable down payment ($0; $1,000; 2,500; $5,000)
  - Tax credits go to the leasing company
  - SRECs assigned to leasing company or held by lessee
  - Annual escalation 0%, 1.9%, 2.9%
- Leasing company monitors system and pays for inverter replacement
Next Steps and Questions
Next Steps

• Step 1: Contact New England Clean Energy to enroll
  – Fill in the form: Click “Get Started” on www.SolarizeActon.com
• Step 2: Schedule free home energy assessment
  – www.MassSave.com
• Step 3: Site Review, Site Visit, System Design
• Step 4: Sign documents (Deadline 9/30/12)
  – $1,000 non refundable deposit
• Step 4: Installation
  – Permitting
  – Construction
  – Interconnection to the grid
• Step 5: Make your own electricity!
Questions?
Goal by September 30, 2012?
Let’s Work Together to

www.SolarizeActon.com
978-56-SOLAR (978-567-6527)
info@SolarizeActon.com