Harness the Sun - Solar for Houses of Worship and Residence

Ramont Bell
Director of Programs

September 14, 2019
Join the conversation!

#GreenTeamSummit
#RootedAndGrowing

@faithinplace
Give TO FAITH IN PLACE

Text 44321 to GreenTeam19
Passports

GET YOUR STAMPED PASSPORT BY VISITING THE EXHIBIT TABLES TO BE ELIGIBLE FOR FABULOUS PRIZES

YOU NEED MORE THAN 50% STAMPS TO BE ELIGIBLE AND YOU MUST ATTEND THE PLENARY TO WIN
The Journey to Become Energy Efficient

- Form a Green Team
- Smart Energy Workshop
- Utility Assessments
- Benchmarking
- Level 1 Energy Audit
- Transportation: Bike to Worship
- Solar Panels
- Level 2 & 3 Energy Audits & Retrofits
Connecting Energy & Environmental Justice

The Problems

- Fossil-fuel burning power plants exacerbate injustice in health outcomes (e.g. asthma) and GH gas.

- Climate change impacts (heat waves, droughts, floods) are disproportionately felt by those least able to respond.

- Illinois leads the country in fossil fuel burning plants located in communities of color.¹

- Asthma attacks: Children of color are 4X as likely to be hospitalized and 10X ten times as likely to die.²
Energy & Climate Change

Our Solution: Empower people of faith to conserve energy at homes and in houses of worship

Solar House of Worship
Connect to the Grid with Solar

- Distributed Generation Solar
- Nonprofit/Public Facility
- Community Solar
Connect to the Grid Savings
Connect to the Climate Benefits

Carbon Dioxide Emissions by Energy Source

- Coal
- Natural Gas
- Solar

Grams of CO2/kWh
Connect to the Grid - On Site Solar

• Cuts Carbon Footprint
• You Become A Community Witness
• Cuts Utility Bills – Could Eliminate Supply charge for kWs generated
• Addresses Environmental Injustices
Example - First Mennonite Church
Faith in Place Faith Partners with Solar Installations

Abraham Lincoln Unitarian Universalist Congregation
Church of the Good Shepherd (100%)
Countryside Church Unitarian Universalist
Euclid Avenue United Methodist Church
Faith United Methodist Church
First Christian Church, Carbondale
First Mennonite Church of Urbana-Champaign
First United Methodist Church of Arlington Heights
Jewish Reconstructionist Congregation
McKinley Presbyterian Church

St. Elisabeth’s Episcopal Church
Trinity United Church of Christ
Unitarian Church of Hinsdale
Unitarian Universalist Church of Elgin
Universalist Unitarian Church of Peoria
Wellington Avenue United Church of Christ
Unitarian Universalist Church of Urbana-Champaign

Pending
Douglas Ave UMC (Springfield)
Carterville UMC
Marion First Presbyterian
Epiphany Lutheran (Carbondale)
Saint John UCC (100%)
Solar 101
What is solar energy?

- Electromagnetic energy transmitted from the sun
  - The sun delivers more energy to the earth in one hour than is currently used in one year!
How is solar energy measured?

- **Watts (W)** measure electrical power
- There are one thousand watts in a **Kilowatt (kW)**
  - The capacity (size) of a solar system is typically measured in kilowatts (kW)
- **Kilowatt-hours (kWh)** measure energy being used or produced

\[
250 \text{ W} + 250 \text{ W} + 250 \text{ W} + 250 \text{ W} = 1,000 \text{ w or 1kW}
\]
What does “photovoltaic” mean?

Photo + Voltaic

Sun + Electric Current
What are the main components of a solar system?

- PV Panels
- Inverter
- Mounting System
- Performance Monitoring System
What are PV cells made of?

• PV cells are predominantly silicon
• Type of material determines panel performance
  • Useful life (~25 yrs)
  • Efficiency (% of solar energy converted to electricity)
  • Degradation rate (% drop in efficiency over time)
How is voltage generated?
Main Components: Mounting System

• Attach and position panels
Main Components: Mounting System
Main Components: Inverter

Inverter

Inverters convert direct current (DC) from panels to alternating current (AC), which is what our homes and electrical grid use.
Main Components: Inverter
Main Components: Performance Monitoring System

- Works through the inverter
  - Web-based tool
  - Performance information
- Allows system owners to:
  - Track electricity production
  - Identify performance issues
How does a solar PV system work?

DC Electricity → Inverter

*Turns DC electricity into AC electricity*

→ Electrical Panel

→ Lamp
What happens to excess electricity that a system creates?
• Definitely!
  • Panels must meet inspection and testing standards

• Approved Vendor will install them and must meet rigorous program requirements, including quality workmanship, participant savings, and consumer protections

Is solar safe?
How can I benefit from solar energy?

• Efficient, affordable, and clean source of energy
  • Protects the environment
  • Creates jobs

• Can provide significant energy bill savings for both property owners and renters

• Helps protect against future energy cost increases
What are the environmental benefits of solar?

• Reduces carbon dioxide and other pollutants emitted into the atmosphere
  • Less pollution, cleaner air and water
Illinois Solar for All Program Basics
Illinois Solar for All (ILSFA)

• Made possible by the Future Energy Jobs Act (FEJA)

• ILSFA program goal: to increase participation in solar energy projects serving low-income and environmental justice communities.
What is ILSFA?

• Low-income solar incentive program

• Offers eligible participants the benefits of solar energy with no upfront costs, electricity savings, and consumer protections.

• Accelerates workforce development

• 25% of funding is allocated to solar projects in Environmental Justice Communities
ILSFA Sub-Programs

**Distributed Generation**
- $7.5 million per year
- Guaranteed savings
- No upfront cost to participants

**Nonprofit/Public Facility**
- $5 million per year
- Nonprofit or Public Sector facilities
- Connected to or within low-income/EJ communities
- Guaranteed savings
- No upfront cost to participants

**Community Solar**
- $12.5 million per year
- Installed in and/or subscribed to by low-income or EJ communities
- Guaranteed savings
- No upfront cost to customer

**Community Solar Pilots**
- $5 million per year
- Funding low-income community solar pilot projects
- Competitive procurement
What is a community solar development?

1. Solar panels are installed in a suitable location somewhere in the community.

2. Anyone with an electricity bill can subscribe to this community solar array and start accessing solar energy for their home.

3. Each subscriber is credited with the electricity created by their share of the solar array right on their electric bill, regardless of where they live.
Who Is Eligible to Participate in ILSFA?

- State wide program
- Residential property owners and renters, with an income of 80% or less Area Median Income (AMI)
- For Community Solar, they can also live within HUD Census Tract
- Non-profit and public facilities serving low-income and environmental justice communities
Environmental Justice Communities (EJCs) demonstrate a higher risk of exposure to pollution based on environmental and socioeconomic factors.
Environmental Justice Communities Map

• Lookup tool allows you to search by address or zoom in on EJCs
How does the program work?

Elevate Energy vets and approves vendors who will be accountable for ensuring projects meet program requirements.

Income-eligible homeowners and renters, as well as non-profits and public facilities serving low-income or environmental justice communities, may be eligible for participation.

No upfront costs and ongoing costs and fees will not exceed 50% of the value of the energy generated from that system.
What is the role of the Approved Vendors?

• Responsible for all aspects of solar installation for ILSFA projects
• Ensure all program requirements are met, including:
  • Community engagement in the development of ILSFA projects
  • Minimum hours performed by qualified job trainees
  • Consumer protections
  • Siting requirements
  • System design and performance standards
  • Quality assurance standards, including assessments via onsite and photo inspections
• There are a lot of mechanisms in place to ensure consumer protections but no matter what, solar installation is a big investment and participants should consider this carefully as with any large home project.

• They should read all the documents carefully, which of course includes the contract.
How do potential participants sign-up?

• Participants work directly with Approved Vendors (AVs)
• List of AVs are published on the illinoisssfa.com
• Grassroots organizations and program staff won’t recommend one Approved Vendor over another
ILSFA Approved Vendors 9.3.19

- Advanced Energy Solutions Group, Inc.
- Ameresco
- Central Road Energy, LLC
- Certasun
- CIC Energy Consulting LLC
- Citrine Power
- Community Power Group
- Groundswell
- JCD Solar Consulting, LLC
- Livewire Construction
- Moxie
- Novel
- Promethean Solar
- PSG Energy Group
- SA Energy LLC
- Solar Sense, Inc.
- Starfield Road LLC
- SunPower
- Trajectory Energy Partners
- WCP Solar Services, LLC
- Xolar
Recap: Participant Benefits

- No upfront costs
- Required savings for all participants
- Comprehensive consumer protections
- Comprehensive vendor requirements
- Vendor management and installation inspections requirements
Qualifying for ILSFA
Overview of Eligibility

<table>
<thead>
<tr>
<th>Low-Income Communities</th>
<th>Environmental Justice Communities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Illinois Solar for All serves low-income households and communities across the state by funding new solar generation systems. These systems benefit qualifying households, non-profits, and public facilities.</td>
<td>Illinois Solar for All allocates 25% of incentive dollars and resources for designated environmental justice communities across the state.</td>
</tr>
</tbody>
</table>
### Overview of Eligibility

<table>
<thead>
<tr>
<th>Low-Income Distributed Generation (residential households or multi-family dwellings)</th>
<th>Non-Profit/Public Facilities</th>
<th>Low-Income Community Solar (residential households)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;=80% AMI</td>
<td>Location - EJ Community or - Low-Income Community</td>
<td>HUD QCT</td>
</tr>
<tr>
<td></td>
<td>Organizational - CSP or - Community Engagement</td>
<td>&lt;=80% AMI</td>
</tr>
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# Overview of Eligibility

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<th>Non-Profit/Public Facilities</th>
<th>Low-Income Community Solar (residential households)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3rd Party Program</td>
<td>Location -EJ Community -Low-Income Community</td>
<td>HUD QCT</td>
</tr>
<tr>
<td>Tax Transcript (&lt;=80% AMI)</td>
<td>Organizational -CSP -Community Engagement</td>
<td>3rd Party Program</td>
</tr>
<tr>
<td>Tax Return/Pay Stub (&lt;=80% AMI)</td>
<td></td>
<td>Tax Transcript (&lt;=80% AMI)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tax Return/Pay Stub (&lt;=80% AMI)</td>
</tr>
</tbody>
</table>
FREE Energy-Saving Products for Your Home or Property

For Questions, Support, and Outages visit ComEd.com

<table>
<thead>
<tr>
<th>Charge Details</th>
<th>Residential - Multiple 12/19/16 - 1/23/19 (35 days)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Supply</strong></td>
<td></td>
</tr>
<tr>
<td>Electricity Supply Charge</td>
<td>557 kWh X 0.08472</td>
</tr>
<tr>
<td>Transmission Service Charge</td>
<td>557 kWh X 0.00747</td>
</tr>
<tr>
<td>Purchased Electricity Adjustment</td>
<td>-</td>
</tr>
<tr>
<td><strong>Delivery</strong> - ComEd</td>
<td></td>
</tr>
<tr>
<td>Customer Charge</td>
<td>51.13</td>
</tr>
<tr>
<td>Standard Metering Charge</td>
<td>51.13</td>
</tr>
<tr>
<td>Distribution Facilities Charge</td>
<td>557 kWh X 0.02967</td>
</tr>
<tr>
<td>IL Electricity Distribution Charge</td>
<td>557 kWh X 0.02123</td>
</tr>
<tr>
<td><strong>Taxes &amp; Fees</strong></td>
<td></td>
</tr>
<tr>
<td>Environmental Cost Recovery Adj</td>
<td>557 kWh X 0.00330</td>
</tr>
<tr>
<td>Renewable Portfolio Standard</td>
<td>557 kWh X 0.00189</td>
</tr>
<tr>
<td>Zero Emission Standard</td>
<td>557 kWh X 0.00180</td>
</tr>
<tr>
<td>Energy Efficiency Programs</td>
<td>557 kWh X 0.00005</td>
</tr>
<tr>
<td>Franchise Tax</td>
<td>3.28</td>
</tr>
<tr>
<td>State Tax</td>
<td>1.94</td>
</tr>
<tr>
<td>Municipal Tax</td>
<td>3.50</td>
</tr>
<tr>
<td>Service Period Total</td>
<td>$76.84</td>
</tr>
</tbody>
</table>

**Miscellaneous**

**Update**

- PRICING TO COMPARE: The ComEd electric supply price to
  compare is $2.29 cents per kWh. This price does not include
  a monthly purchased electricity adjustment factor that may range
  between +$0.005 and -$0.005 per kWh. For more information and
  supplier offers visit https://www.pluggables.com/comedrate.aspx. For
  more information on ComEd bill line items go to
  ComEd.com/UnderstandBill
- CUSTOMER HANDBOOK. Read ComEd phone numbers, resources, and other helpful information? ComEd.com/Handbook or
  call (800) 334-7561.
- CHECKLIST. View a copy of the ICC Commission 25 Ill. Adm.
  Code 200 rules at ComEd.com/Part200.
- YOUR COMED BILL. Need help understanding your bill line item
  definitions? Please visit us at ComEd.com/UnderstandBill or call
  (800) 334-7561.
- ENVIRONMENTAL DISCLOSURE STATEMENT: ComEd’s
  Environmental Disclosure Statement can now be found online at
  ComEd.com/EnvironmentalDisclosure
- WAYS TO PAY. Looking for ways to pay your bill? Visit
  ComEd.com/Pay
- ILLINOIS COMMERCE COMMISSION CONSUMER DIVISION
  (800) 624-0765. The Consumer Services Division is available
  to help resolve disputes with ComEd. However, customers should
  contact ComEd before seeking assistance from the ICC.
- Past due balances are subject to late charges.
Role of the Approved Vendor – related to qualifying

- Collects Basic Information Form
- Collects supporting documentation
- Submits documentation to Program Administrator
- Communicates results
Basic Information Form

- Contains
  - Consent
  - Verification/Documentation
  - DOB of household members (in some cases)
  - Certification
- Who can sign?
  - Head of Household
  - Property Owner
  - Authorized Signer
- Hand written and signed
- Saved as PDF and submitted
Low-Income Distributed Generation

- Basic Information Form
- Verification Method
  - 3rd Party Program
  - Tax Transcript
  - Tax Return / Pay Stubs
Non-Profit Organizations and Public Facilities

• Basic Information Form
• Verification Method
  • Location (EJ or LI)
    • Mapping Tools
  • Organizational
    • (CSP or Community Engagement)
Low-Income Community Solar

- Basic Information Form
- Verification Method
  - HUD QCT
    - Mapping Tools
  - 3rd Party Program
    - Verification Documentation
- Tax Transcript
  - IRS Form T-4506
- Tax Return / Pay Stubs
## Example #1

### Assumptions (80% offset – suggested model)

<table>
<thead>
<tr>
<th>Assumption</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>IL SFH Avg Monthly use (kWh)</td>
<td>950</td>
</tr>
<tr>
<td>Target % of Monthly use offset (%)</td>
<td>80%</td>
</tr>
<tr>
<td>Target average solar generation kWh/month</td>
<td>760</td>
</tr>
<tr>
<td>Target System Size: (by % offset)</td>
<td>7.6</td>
</tr>
</tbody>
</table>

### Results

<table>
<thead>
<tr>
<th>Type of Financing:</th>
<th>Purchase</th>
<th>Lease</th>
<th>PPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current Average Utility bill:</td>
<td>$145.65</td>
<td>$145.65</td>
<td>$145.65</td>
</tr>
<tr>
<td>Projected Average Utility Bill (After Solar):</td>
<td>$53.52</td>
<td>$53.52</td>
<td>$53.52</td>
</tr>
<tr>
<td>Percent Reduction in Utility Bill</td>
<td>63%</td>
<td>63%</td>
<td>63%</td>
</tr>
<tr>
<td>Projected PV Payment:</td>
<td>$44.19</td>
<td>$44.19</td>
<td>$44.19</td>
</tr>
<tr>
<td>Total Energy Cost (Utility + PV Payment):</td>
<td>$97.72</td>
<td>$97.72</td>
<td>$97.72</td>
</tr>
<tr>
<td>Percent Reduction in Energy Cost:</td>
<td>33%</td>
<td>33%</td>
<td>33%</td>
</tr>
</tbody>
</table>
**June 28:** Batch submittal window closes at 5 PM CT for Low-Income Distributed Generation and Non-Profits and Public Facilities projects

**June 28 - July 8:** Program Administrator Review Period for Low-Income Distributed Generation and Non-Profits and Public Facilities projects

**July 9 - August 7:** Project Cure Period for projects in all sub-programs

**August 8 - August 14:** Program Administrator Final Review Period

**August 15:** Final scoring rubric weightings announced (based on distribution of projects submitted)

**August 19:** Release of Rank Scores and Proposed Project Contract Value List

**August 21:** Program Administrator announces final list of selected projects; random selection conducted if necessary

**August 21 - 28:** Time for the final project selected to review resizing option if necessary

**August 28:** Final Project List and Project Wait List announced
How does job training fit into ILSFA?

• ILSFA aims to ensure low-income populations benefit through energy savings and creation of jobs
  • Individuals who stand to benefit most from clean energy investment are trained and connected to jobs
Passports

GET YOUR STAMPED PASSPORT BY VISITING THE EXHIBIT TABLES TO BE ELIGIBLE FOR FABULOUS PRIZES

YOU NEED MORE THAN 50% STAMPS TO BE ELIGIBLE AND YOU MUST ATTEND THE PLENARY TO WIN
Your Contact Info: Please Print Clearly!

First Name ___________________________ Last Name ___________________________

Email Address ___________________________

Home Street Address ___________________________

City ___________________________ State ______ Zip Code ______

Cell Phone ___________________________

Your House of Worship (if applicable) ___________________________ House of Worship City (if applicable) ___________________________

Your Interests:

☐ Start a Green Team / Learn More

Sustainable Food & Land Use
☐ Community Gardens  ☐ Nature Outings  ☐ Winter Farmers Markets

Energy & Climate Change
☐ Reducing energy usage and cost with dynamic pricing
☐ Free Energy Assessment & Energy Saving Products for your House of Worship
☐ How to save money with peak time rebates

Water Preservation
☐ Rain Barrels  ☐ Rain Gardens  ☐ Interfaith Water Curriculum

Advocacy
☐ Annual Advocacy Day to Illinois State Capitol
☐ Faithful Citizen Workshops

Solar for All
☐ Houses of Worship Solar  ☐ Residential Solar

faith in place: Faith in Place does not share our list with anyone except the Clean Jobs Coalition steering committee, of which we are a voting member. The Coalition is a network of environmental, business, and faith communities working to improve public health, help consumers save for the environment, and create tens of thousands of new clean jobs across the state. Information gathered is used for program emails and as a content to photos taken at the event.

Faith in Place is the proud Illinois Affiliate of Interfaith Power & Light
Give TO FAITH IN PLACE

Text 44321 to GreenTeam19
Save the Date

For Fall Advocacy Day October 29th

Learn More At
https://www.faithinplace.org/events/fall-advocacy-day-2019
Join the conversation!

#GreenTeamSummit
#RootedAndGrowing

@faithinplace