Low- to Moderate-Income (LMI) Participation in Solar

Zach Sippel
Solar Program

Energy Trust of Oregon
Program Review

- Renewables department 17% of overall Energy Trust budget
- Renewables program promotes a portfolio of projects (hydro, biogas, solar)
- Solar program provides upfront cash incentives for homeowners and businesses
- Supported over 14,500 solar systems in last 15 years
PV adoption compared to household income distribution
LBNL Research

*State Median Family Income $69,990 (HUD FY 2018)

Source: Energy Trust of Oregon Incentive and State of Oregon Residential Energy Tax Credit Applications through 2016.
Low- and Moderate-Income Housing, by Type

**Low-income** is defined as <80% Area Median-Income (AMI)

**Moderate-income** is defined as 80-120% AMI

Source: American Community Survey, 5 year Estimate, Census 2015 self reported figures.
Challenges, and Opportunity

Benefits

- Access to clean, renewable energy
- Long-term bill reduction and energy savings
- Asset-building
  - Typically increases value of home
  - Excluded from property taxes
- If combined with battery storage, potential for resilience and possible future income from utility
Challenges, and Opportunity

Risks

- Competing financial priorities; could displace maintenance or lower-cost energy savings
- Solar install can trigger other expenses, such as roof or service panel replacement
- Typically low maintenance, but need to save for an inverter replacement or repair
- Oregon Community Solar program may be less expensive option
Development: Solar Within Reach

- Higher incentive designed for income-qualified homeowners
- Could be combined with community-based deployment approach like Solarize
- Potential for on-bill financing?
Low-income is defined as <80% Area Median-Income (AMI)

Moderate-income is defined as 80-120% AMI

Source: American Community Survey, 5 year Estimate, Census 2015 self reported figures.
Oregon’s Community Solar Program

- Passed into law in 2016 (among other RPS goals, 50% renewables by 2040)
- Section 22 of SB 1547 calls for OPUC to establish program for procurement of power from CS projects
- Mandate for 10% inclusionary carve-out “to be made available” to LI participants
Basic Structure

1. COMMUNITY PROJECT HARNESSES SOLAR ENERGY
   Solar panels located in your utility’s service area produce electricity using energy from the sun.

2. SOLAR ENERGY IS DELIVERED TO THE GRID
   Electricity from the solar panels supplies your utility with more power.

3. UTILITY CONTINUES TO POWER YOUR HOME
   Your utility continues to deliver power to your home, as usual.

4. RECEIVE CREDITS ON YOUR UTILITY BILL
   Every month, you receive a credit on your utility bill for the electricity generated by your portion of the solar project.

5. PAY TO PARTICIPATE ON YOUR UTILITY BILL
   Make payment for your portion of the solar project on your utility bill.
50kW commercial size project
×
320 projects
=
16 megawatts
Impact

- **16 MW** available to LI participants
- A **3kW** subscription (25% bill reduction or $360/yr) for ~ **5,000** households
- **1.2%** of the LI households in Oregon*
- **The ave EAP is $358**

*There are 404,765 low-income households in OR based on the 2015 CAPO Report on Poverty
** OHCS, State Yearly Program Snapshot for 2016

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**How Much Solar Would it Take to Reduce a Low-Income Customer’s Monthly Electric Bill by 25%?**

**MULTIFAMILY**

- **SYSTEM SIZE**
  - 1.8kW* - 2.2kW

**HOUSE/DUPLEX**

- **SYSTEM SIZE**
  - 2.8kW* - 3.5kW
Innovation Grants

- Awarded in January 2019
- Seeding innovative models championed by local partners
- $81,600 in small grant funding awarded to nine selected community groups
- Blend of delivery models (rooftop, multifamily, community solar)
- Continued support for replicable models
LMI Solar Work Group

- Group of ~20 stakeholders
  - 50% LMI representative
  - 50% Solar Industry
- Bi-monthly, half-day meetings; participatory planning approach
- Scholarships for LMI members
Working Group - CBO Members

Affordable Housing Providers/ Authorities
- Portland Community Reinvestment Initiative

Community Action Agencies
- Community Action Partnership of Oregon
- NeighborImpact

Communities of Color
- Lower Columbia Hispanic Council
- African American Alliance for Homeownership
- NAACP

- Verde
- Centro Cultural
- Native American Youth & Family

Community Development Corporations
- REACH CDC
- Umpqua Community Development

LMI Non-profits
- Habitat for Humanity

Pre-apprenticeship Training Programs
- Constructing Hope
Meeting Topics

• LMI Housing Types
• Solar 101 and finance
• “Co-benefits”
  o Housing affordability, stability
  o Community resilience and energy planning
  o Workforce
• Real-world solutions - *charette*

“There’s not a solar crisis, there’s a housing crisis”

Carolina Iraheta-Gonzales - Community Energy Advocate, Verde
Multi Family Housing
This property consumes 58,000 kWh of electricity per year (10 master-metered tenants using 5,000 kWh/yr, plus 8,000 kWh/yr for common areas and hallways).

**Capacity** - How big is it?

1. \[ \frac{\text{watts}}{\# \text{ of panels}} \times 300 \text{ watts each} = \frac{\text{watts}}{\text{or}} \text{ (kW)} \]

**Cost** - What's total installed cost?

2. \[ \frac{\text{watts}}{\text{($/watt)}} \times \frac{\$}{\text{}} = \$ \]

*Energy Trust offers incentives to help bring these costs down!

**Generation** - How much energy will this system generate per year?

3. \[ \frac{\text{watts}}{\text{}} \times \frac{\text{(LPC)}}{\text{}} = \frac{\text{kWh/yr}}{\text{}} \]

**Impact** - How much of the building's annual electric use is offset?

4. \[ \frac{\text{kWh/yr}}{\text{}} \times \frac{\%}{\text{(per year)}} = \$ \]

**Bill Savings** - How much money can be saved per year?

4. \[ \frac{\text{kWh/yr}}{\text{}} \times \frac{\$(/kWh)}{\text{}} = \$ \text{ (per year)} \]