Seattle City Light presents

Community Solar at the Seattle Aquarium

Seattle City Light

CONSERVATION RESOURCES DIVISION

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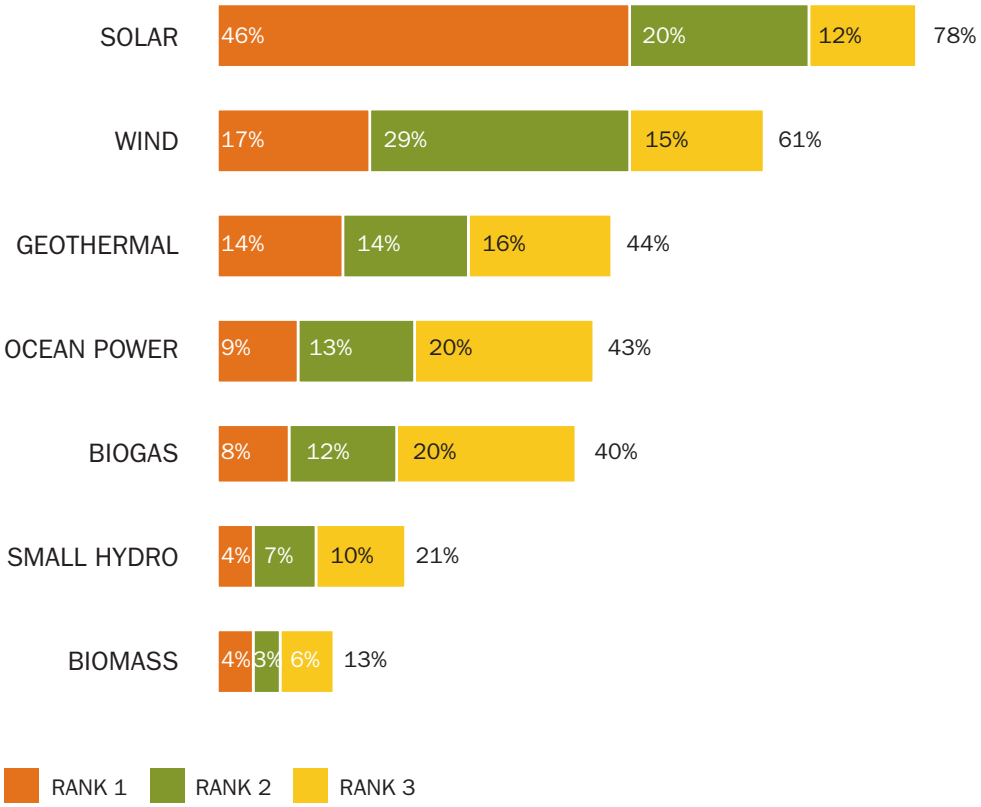
On Seattle's waterfront, we're saving some sun for a rainy day

Seattle City Light asked our customers what they wanted from our renewables programs. In a series of online surveys with an average of 900 responses per survey, a panel of 1800 customers was asked various questions, including what they preferred as sources for renewable energy. Customers overwhelmingly want to see solar as the top source for new renewable energy.

We asked our customers: If given a choice, which of the following new sources of renewable electricity generation would you most prefer? Please select your top 3 choices.



CEF Survey 3 Q1. Base: All respondents (n-968)

A Different Model for Solar Energy

Community Solar lets many people come together to build one larger solar array and share in its benefits. At Seattle City Light, we choose locations that are a good fit for solar — sunny, visible to the public, and on properties that bring other public benefit to our community, such as parks, or the Seattle Aquarium.

Participants benefit through economies of scale, better siting, and the opportunity to take part at a much lower entry level. Instead of paying many thousands of dollars to install a solar electric system at the customer's site, the customer can get financial benefits and support solar in the community by investing in a fraction of the entire project.

State Law Shapes Community Solar in Washington

- RCW 82.16.110 defines what qualifies as a Community Solar system.
- Three options – no more than 75 kW in size:
  1. System owned by local individuals, nonprofits or other non-utility businesses placed on property owned by a cooperating local governmental entity *that is not in the light and power business or in the gas distribution business.*** Requires an "administrator."
  2. A utility-owned system that is voluntarily funded by the utility's ratepayers where, in exchange for their financial support, the utility gives contributors a payment or credit on their utility bill for the value of the electricity produced by the project
  3. A privately owned system (LLC, co-op or mutual ass'n) placed on property owned by a cooperating local governmental entity *that is not in the light and power business or in the gas distribution business,*** where members are each eligible for an investment cost recovery incentive for the customer-generated electricity.
- State pays production incentive based on kilowatt hours produced. Rate varies depending on whether system components (panels and inverters) are made in Washington.
- Community Solar participants get DOUBLE the rate that customer generators get, ranging from:
  - No equip made in WA: $0.30/kWh (ind'l rate = $0.15)
  - Panels and inverters made in WA: $1.08/kWh (ind'l rate = $0.54)
- Administrator, Utility or Company must certify production to State.
- No individual, participant, member, etc may receive more than $5,000/year in incentive payments.
- Washington's Production Incentive Scheme currently set to expire June 30 2020.

History of Community Solar in Seattle

- DOE Solar America Cities Grant 2008
- DOE Solar America Cities Special Projects Grant 2010 – ARRA Funding
- Ellensburg example
- Partnered with NW SEED
- Worked with NREL to put together "Guide to Community Solar" in 2011 (nrel.gov/docs/fy11osti/49930.pdf)

"This is a great idea. It saves us a lot of hassle and is the right thing to do. Also, it helps us show our kids that we're starting to slow down some of the damage our generation is doing to the planet."

— A participant that bought 50 units

Community Solar at the Seattle Aquarium

- Funded by Community Solar revolving revenue from first project at Jefferson Park
- At 49.4 kW, the largest solar project installed by City Light
- Additional Green Up program revenue for education, display, demonstration
- An exceptional site:
  - historic waterfront location
  - 800,000 visitors per year (including 40,000 school children)
  - high street traffic
  - south-facing unshaded roof in good condition
  - supported by Aquarium board and staff
- Estimated design/construction budget $350,000
- Silicon Energy modules and inverters cost $5.85/watt installed
- Solar units cost $150, representing a 24 watt piece of the system
- Customers could buy from 1 — 125 units (125 units is roughly equal to installing a 3 kW SiE system on your own building)
- Online enrollment system developed
- C Solar charges divided into 2 equal payments across 2 bills (this and cost attempted to address the City of Seattle's Race and Social Justice Initiative concerns)
- Assuming 1050 kWh/kW, each unit is expected to generate about $29 annually in credits

Program design and logistics planning

Site selection
Site was selected after review of large number of potential sites (all public for this early iteration of Community Solar, although a public site is not required for a Municipal Utility) for its location, solar exposure, appeal to Seattle residents, interest and shared aims (conservation/sustainability) of the host, and timing — we wanted a project that could go online in 2013 in order to maximize payments to customers.

Contract
Contract between Seattle Aquarium and SCL requires SCL to reimburse the Aquarium for up to $400,000 in costs incurred in the procurement and installation of the system and monitoring/education/display expenditures.

- Aquarium selected Silicon Energy as the solar array (both modules and inverters) manufacturer after consultation with and approval by Seattle City Light. 247 modules make up the 49.4 kW system.
- Seattle City Light, its consultant Bonneville Environmental Foundation and the Aquarium prepared an RFP for installation of the system, which was posted in the Seattle Daily Journal of Commerce. After reviewing the RFP responses, the Aquarium chose Northwest Wind & Solar as the system installer, with the approval of Seattle City Light. Installation of the system took approximately 3 weeks and took place in October 2013.

Online enrollment
As the result of desires reflected in customer surveys, CRD engaged in an intensive effort to get agreement from various divisions in the utility to allow creation of an online enrollment system, including a mechanism for customers to spread out payments over time.

"I have already been spreading the word, especially to renters and people who live in multifamily buildings where it's difficult to get their own solar arrays installed."

— A participant that bought 125 units

"We're so happy that these units are available. We would love to have solar on our own home, but our site is not suitable."

— A Participant who bought the last 3 units and wanted more

Help bring solar to the Seattle Aquarium

For as little as $150, City Light customers who join between September 2013 and February 2014 will help build a nearly 50 kilowatt solar photo-voltaic system on the aquarium roof.

To learn more, call (206) 684-3800 or visit our website at seattle.gov/communitysolar.

Benefits of the program:

- Get annual credits for energy production with 100 percent payback (or more) expected by 2020
- Be part of a movement to demonstrate that solar power works here in Seattle
- Support clean, renewable solar power supplied directly to the Seattle Aquarium's marine conservation education and research activities

To reserve your spot in the Seattle Aquarium Community Solar program, fill out the form on the other side.

COMMUNITY SOLAR
at the Seattle Aquarium • brought to you by Seattle City Light

Seattle City Light

SEATTLE AQUARIUM

Reserve your spot today.

Fill out the form below and a Community Solar representative will contact you with next steps.

◯ ***Yes, I want to bring solar to the Seattle Aquarium!***

NAME

PHONE

SEATTLE CITY LIGHT ACCOUNT NUMBER

EMAIL ADDRESS

Return the form in your bill envelope or mail it back to us:
Community Solar, Seattle City Light, 701 5th Ave., MS 901-487
Seattle WA 98124

- PayPal was investigated as a payment mechanism but not chosen
- CRD worked with IT to ensure that online enrollment process would immediately transmit relevant billing and customer information to CRD and Account Control for review.
- Process for adding Community Solar charges to customer bills was developed by CRD and Customer Care (Account Control), with exact $ amounts to be added over 2 billing cycles for each customer's account.
- Virtual net metering benefits and incentive payments added to customer accounts annually.
- Each customer received a welcome message from the Community Solar Program Manager within 3 days of enrolling (most within hours).
- Community Solar participants will be recognized via digital "signage" on the SCL website or physical signage installed at Waterfront Park or on the SCL vault located adjacent to the Aquarium (in what is currently Waterfront Park space).
- Process developed to charge Aquarium for energy produced by solar array and recorded by production meter (not including pro rata share of total production attributable to "Green Up" portion of the system — 5 kW). Process needed because energy produced by solar array reduces charges on billing meter, but since Community Solar customers are entitled to the virtual net metering benefit, the Aquarium must be billed for the avoided electricity or SCL in effect pays twice for the energy produced.
- Data monitoring system (DECK) selected by SCL and Aquarium provides **live solar generation information**.

"The main reason I'm enthusiastic about this project is that I'm a strong believer in the power of local economies and their potential to fight the ever-increasing income and wealth disparity in the United States. With this project, I am able to invest money I earned through my Seattle-based small business into local, renewable energy infrastructure that is built using made-in-Washington solar panels. It's a sound investment that keeps the money in our local economy and provides me with an alternative to mutual funds, which often invest in large multi-national corporations that don't share my values.

Another reason this project is attractive to me is the very nature of Community Solar. It enables me to show my support for renewable energy by purchasing the equivalent of a 3 kW solar power system, even if I'm not able to put panels on my own roof."

— A participant who bought 125 units

Project Press

Click on the **bolded** titles to read the stories.

July 26, 2013
First press release from SCL

July 26, 2013
Seattle PI
Aquarium to get record solar array

July 26, 2013
Solar Industry Magazine
Seattle City Light, Seattle Aquarium To Install Community Solar Array

July 27, 2013
Solar Gardens Blog
Seattle City Light, Seattle Aquarium To Install Community Solar Array

July 27, 2013
NWSEED Executive Director Jennifer Grove mentioned the project and Seattle City Light's work with them on Solarize Seattle during an interview on KEXP's Mind Over Matters segment on Saturday. KEXP only keeps archives of shows for 2 weeks so we can't link to the broadcast.

July 30, 2013
Seattle Daily Journal of Commerce
Solar panels going onto aquarium roof

July 30, 2013
Energy Manager Today
Seattle Utility Powers Aquarium With Community Solar

August 1, 2013
Fierce Energy
Customers can own solar via Seattle Aquarium

August 1, 2013
Fifth Avenue Seattle
Seattle Aquarium's ambitious solar project largest on West Coast

August 5, 2013
KOMO News
Seattle Aquarium to moonlight as solar power provider

August 6, 2013
Seattle Aquarium Blog
Solar electricity comes to the Seattle Aquarium

August 6, 2013
107.7 The End
The Seattle Aquarium goes solar!

August 12, 2013
My Northwest
Solar panels becoming more mainstream in the Northwest

No date
Dept of Energy Green Power Network News
New Community Solar Program Introduced at Seattle Aquarium

September 11, 2013
Seattle Weekly
How Portland is Kicking Seattle's Environmental Ass with Solar (And How We Can Catch Up)

Mid September 2013
NW Wind and Solar
NW Wind and Solar just awarded the Seattle Aquarium

September 25, 2013
Mayor McGinn did a little spiel promoting Community Solar on KEXP this morning. He gave a shout out to Seattle City Light and directed listeners to the website.

October 16, 2013
Blooloop
Here Comes the Sun? Seattle Aquarium's Community Solar Project

October 21, 2013
Public Power Weekly
Seattle City Light, aquarium start work on community solar project

"We are excited to support this very forward-thinking project!"

— A participant that bought 1 unit

"We are also Green Up participants and have been for years. Glad to hear this is part of that effort too."

— A participant that bought 5 units

September 17, 2013
Seattle City Light Manager Messenger Story

Community Solar coming to Seattle Aquarium

Installation of the largest solar array at any West Coast aquarium starts soon at the Seattle Aquarium as part of the Community Solar and Green Up programs. The 49-kilowatt project will cover much of the south side of the Aquarium's roof. Solar panels for the project are being purchased from Marysville-based Silicon Energy, promoting green jobs in Western Washington. Each 24-watt unit of the solar installation will cost $150 for customers to purchase. Customers can buy up to 125 units. Participants receive credit on their City Light bills for their portions of the solar panels' output through 2020 along with all state production incentives. Together, those credits amount to $1.15 per kilowatt-hour. So far, more than 50 percent of the Aquarium's units have been purchased. Participants will receive an estimated $150 worth of incentives for each unit purchased by the end of their agreements.

Thank you!

Seattle City Light