Seattle City Light

*Conserving Energy for a Sustainable Future*

# Guide to Installing a Solar Electric System

PHOTO CREDIT: BROTHERS ELECTRIC AND SOLAR

*This guide is designed to provide Seattle City Light customers with information on grid-connected solar electric systems. It provides background on solar electric systems, the components required, and outlines the steps to take if you want to install and interconnect a system to the utility grid.*

*For solar questions not answered by this guide, please contact Seattle City Light's Energy Advisors at (206) 684-3800 or by email at SCLEnergyAdvisor@seattle.gov*

# Contents

# Introduction

PHOTO CREDIT: A&R SOLAR

### Why you may want to install a solar electric system for your home or business:

More and more City Light customers are showing interest in solar electric systems for their homes and businesses. Why?

- Solar electric systems are safe, reliable, pollution free, and use a renewable source of energy—the sun. Most systems have no moving parts and are increasingly easy to install.
- The option of net metering, or interconnecting a customer generating system to the utility grid, makes solar electric systems more economically viable.
- Landmark federal and state legislation have created new financial incentives for owning and operating a solar electric system.

If you are interested in making a long-term investment to protect yourself from rising energy costs and want to reduce your personal environmental impact, now may be the time to learn more about installing a solar electric system for your home or business.

# The History of Photovoltaic (PV) Technology

PHOTO CREDIT: SEATTLE CITY LIGHT

The first solar cell was created in 1883. It was inefficient by today's standards, converting only 1–2% of sunlight into electricity. The breakthrough in solar cell technology came in 1954 when researchers at Bell Laboratories stumbled across the photovoltaic (or PV) properties of silicon while experimenting with new transistor technologies. Three years later, PV research began in earnest to develop an independent solar energy source for space technologies. Thanks to continuing research, modern commercial PV cells have improved to 11–15% efficiency.

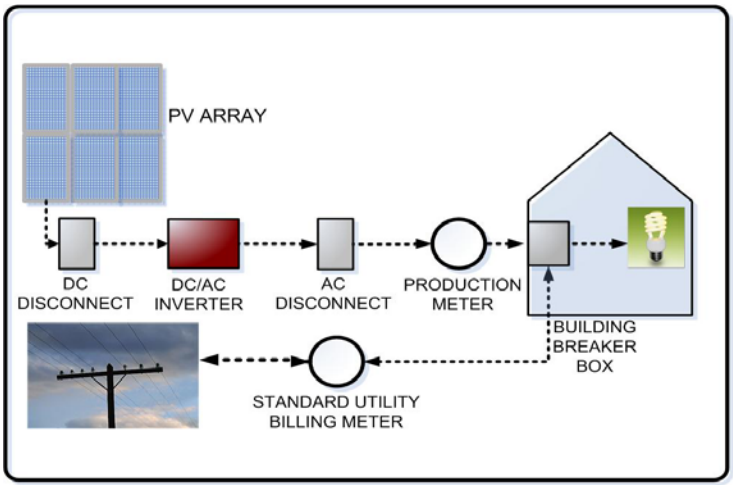
Historically, PV has been used extensively in areas that are not served by a power grid. As PV prices have dropped, and grid energy has become more expensive, PV systems are increasingly used in grid-tied applications.[1]

A solar electric or PV cell uses a semiconductor material similar to that used in computer chips to absorb sunlight and convert it into electricity. Multiple solar cells are linked together to form a module or panel. Multiple modules/panels are connected to form a PV array.

There are three main types of PV panels: monocrystalline, polycrystalline, and amorphous silicon (thin film). A monocrystalline cell is the most efficient per area (produces the most power per square foot) and requires the most silicon. On the other end of the scale, amorphous silicon is the least efficient per area and requires the least amount of silicon. Most mono- and polycrystalline cells are incased in a glass panel with a metal frame. Because amorphous silicon cells use less silicon, they are more flexible and can be used in a variety of applications, including a peel-and-stick panel that adheres to a standing seam metal roof.

[1] Historic summary provided by Solar Oregon, http://www.solaroregon.org/learn/solar_electric/history-of-pv, accessed February 25, 2009.

## The Components of a Grid-Tied PV System




A PV System includes:

1. PV Array—Multiple PV panels installed together are called a PV array. Mounting arrays to rooftops is most common, yet they can also be located on a pole, a ground mounted rack, parking area shade covers, window awnings, etc. The PV array produces Direct Current (DC) power.
2. DC Disconnect—The DC Disconnect is a safety device that, when manually opened, stops power running from the array to the rest of the system. The DC disconnect is used during system installation and anytime your contractor needs to work on the system.
3. DC/AC Inverter—The PV array produces DC electricity, however, we use Alternating Current (AC) electricity in our buildings and power grid. The Inverter converts the DC power to AC power.
4. AC Disconnect—The AC Disconnect is another safety device and is often incorporated into the Inverter. Seattle City Light does not require an AC Disconnect on most small residential systems. (For details on this exemption, contact your Electric Service Representative—see Step 2 on the *Installation and Incentive Checklist*, page 17.)
5. Production Meter—The Production Meter measures the energy output (in kilowatt-hours, kWh) from your system and is used to record the amount of electricity generated. This component is not critical to power generation, but is necessary in order to take advantage of Washington State's Production Incentive Program (as described in the Incentives section, page 12).
6. Building Breaker Box and Standard Utility Meter—Also called your building's circuit panel or electrical service panel, the Breaker Box is where the power from the PV System enters the building. If the building is using electricity, the PV-produced electricity will be used first. If the building needs more electricity than the PV System is producing, utility grid power is automatically pulled into the building. When the PV System produces more electricity than is needed, the excess flows back out to the utility, spinning your utility billing meter backwards in the process. You earn credit for the excess power produced and can use that credit when the system is not producing energy. This process is referred to as "net metering."

# Siting Your System

PHOTO CREDIT: SUN WIND CONCEPTS

A well-designed solar electric system has clear and unobstructed access to the sun for most of the day throughout the year. Siting a PV system correctly is critical in order to achieve maximum power production and thus maximum energy offset and financial return.

## Orientation and Tilt

Optimal orientation for solar panels is true south. As you move away from true south, a system will suffer production losses, up to as much as 15–25% for panels oriented east or west. However with advancements in technology these losses are decreasing as inverter manufacturers learn how to maximize off-of-south orientations. In Seattle, solar panels produce the maximum power annually when mounted at a tilt of roughly 30 degrees.

## Shading

Avoid shading as much as possible. Even minimal shading can significantly impact power production. You will want to consider potential shading from trees, buildings, power lines, telephone poles, and obstructions like chimneys and vent pipes.[2] Your contractor should include the impact of obstructions on your power production estimate.

## Sloped Roof

A significant portion of your system cost will be in the installation of the panels, so if you plan on replacing your roof in the next 5–7 years, consider doing that first. Otherwise, your installer will need to come back to remove the panels for the new roofing to be added, and then re-install the panels—all at your cost. Overall, you want to be sure your roof is in excellent long-term condition, because PV systems are designed to last a minimum of 20 years and many will last even longer. So, if you are unsure about the structural integrity of your roof, have it professionally inspected to verify its condition and suitability.

[2] Google SketchUp is one tool that may help you model the impacts of shading. Learn more at http://sketchup.google.com/.

### Flat Roof

Most residential and small commercial PV systems are installed on sloped roofs, yet it is possible to install on a flat roof. Contractors typically avoid penetrating a flat roof and instead use some sort of ballasted (weighted) means of securing the panels against wind. Building code officials will be concerned about the wind sheer and roof loading of such a system. If a flat roof system is in your future, plan to submit a professional engineer (PE) stamped drawing illustrating how the system will be secured to the building.

### Tracking

Most residential and commercial PV installations are mounted to roofs and are fixed in place. If your system is going to be mounted on a pole or a flat roof, you have the choice of installing a tracking device. The simplest form of tracking is to seasonally adjust the tilt angle of the panels. Automatic tracking devices allow the panels to follow the sun as it moves through the sky, receiving direct light more often than a fixed system. Electrically operated and thermally operated trackers have their own costs, benefits, and drawbacks. Keep in mind that without a tracker, your PV system has no moving parts. While automatic trackers can increase production by 20–40%, they do add moving parts to the system, so there are operation and maintenance concerns to consider. Pole-mounted systems also have the additional cost of the pole installation.

Learn more about all of these siting issues by reading articles in *Home Power* magazine: www.homepower.com.

# Selecting the Right Size System For You

PHOTO CREDIT: PUGET SOUND SOLAR

Three core factors affect the sizing of your system: your electricity usage, space availability on your property, and your budget.

## Your Electricity Usage

Do you want to try to produce 100% of your power or some smaller percentage?

While any excess production from month to month will carry over as a credit on your utility bill (net metering), you will not want to install a system that produces more than 100% of your power as *the utility will not reimburse you for excess power produced at the end of the year.*[3] You may also not want to size the system too large if you are planning more energy conservation measures for the future.

To determine how much power you use right now, look for the kilowatt-hour (kWh) consumption on your utility bill. Sum the kWh for the past year to get your annual electricity usage. For help understanding your bill, check out http://www.seattle.gov/light/help/#billtour.

You can also use the Home Resource Profile (http://www.seattle.gov/conserve/homeprofile/) to look at your energy use over the year and potential conservation measures to reduce your usage.

## Space Availability

The amount of unshaded, easy-to-access, space available for mounting panels will limit the size of the system. You can use In My Back Yard (IMBY), an online tool created by the National Renewable Energy Laboratory to estimate the area on your property available for mounting a system. IMBY allows you to draw a system on a map of your property and then estimates the specifications of the array given the size and orientation of your drawing.

PV panels vary in their dimensions. While a vast number of PV panels are undergoing research and development, a limited number are available on the retail market. *Home Power* magazine (http://www.homepower.com) is one resource for comparing the various commercially available panels. Each year *Home Power* publishes evaluations of different panels. Local contractors will have

[3] *The year is defined as May 1st through April 30th by state law.*

particular brands they install regularly. When talking with them, find out which panels they use, why they like them, if the panels are UL Listed (required for electrical inspection and utility interconnection) and the panel's warranty length. A standard industry PV panel warranty is 20–25 years, and manufacturers expect the panel will produce 80% of its rated capacity at the end of the warranty period.

RESOURCE

In My Back Yard (IMBY): http://nrel.gov/eis/imby

RULE OF THUMB

1 kilowatt (kW) of PV panels will require approximately 100 square feet of area.
If PV panels are unshaded, oriented to true south and mounted at approximately 30 degrees, they will produce approximately 900–1,000 kilowatt-hours (kWH) per year in Seattle.

### Your Budget

It is a good idea to evaluate your budget and goals before choosing your system. Some questions to consider include: What is my budget for this project? Will I finance or pay for it out of my savings? Keep your budget in mind as you read the Cost and Incentives section of this guide (starts on page 12).

# Permit Requirements

PHOTO CREDIT: SUNERGY

## Electrical Permit

Electrical permits are required for all solar electric systems and must be secured by the person doing the electrical work. In the vast majority of cases this will be your electrical contractor. Owners with the required planning and installation skills, who want to complete the installation themselves, can also obtain the electrical permit. Your contractor must submit an electrical drawing and the system will be subject to a field inspection after installation. Typical field-inspection permit fees for small systems are approximately $190. If your system design is atypical, your contractor may be required to go through a plan review.

## Building Permit

Building permits in Seattle are required for solar arrays when any of the following apply:

1. The array weight is 1,000 pounds or more.[4]
2. The installation is structurally complex (determined by Dept. of Planning & Development).
3. The solar project is part of building alterations or additions valued over $4,000.
4. The solar project requires construction of stand-alone support structures valued over $4,000.

RULE OF THUMB

As a point of reference, a 2 kW PV system will weigh approximately 500 pounds.

RESOURCE

For Seattle residents, permits may be obtained at the DPD Applicant Services Center, 700 Fifth Avenue, 20th floor, (206) 684-8850, or at http://www.seattle.gov/dpd/Permits/.

For electrical permit questions, contact DPD's Electrical Technical Support at (206) 684-5383.

[4] Building permits may be required if your system will be installed on a flat roof. In such an installation, specific calculations regarding roof loading and wind sheer are required.

### Land Use Requirements

In Single Family, Multi-family and Residential Small Lot zones[5], solar panels may be mounted to extend up to 4 feet above the zone's height limit, and/or extend up to 4 feet above the ridge of a pitched roof. Also, the total height from existing grade to the top of the solar panels may not extend more than 9 feet above the zone's height limit.

In the Single Family and Residential Small Lot zones, a solar panel exceeding the zone height limit must be placed so that it does not shade the property to the North on January 21, at noon, any more than a structure built to the maximum permitted size for that zone. For assistance in determining solar exposure, please see *CAM 417: Sun Chart: Determination of Solar Exposure*.

### Set-Back Yard Requirements

Ground or pole mounted PV systems cannot be located in front yards. They must be at least 15 feet from back property line and 3 feet from side property line. More specifics on set-back requirements can be found in *CAM 420*.

RESOURCE

***CAMs***: http://www.seattle.gov/dpd/publications/client_assistance_memos_(CAMs)

[5] To determine the zoning on your property, visit http://www.seattle.gov/dpd/Research/Zoning_Maps/default.asp.

# Costs and Incentives

PHOTO CREDIT: WESTERN WASHINGTON SOLAR

## Typical System Cost

Cost depends on a number of factors. Most residential systems in Seattle are 2 to 3 kilowatt (kW) systems with an average installed cost of $8,000–$10,000 per kW for a total investment of between $16,000–$30,000. The cost is typically broken down into the following four areas: PV panels, labor, inverter, and balance of system components (racking, wiring, conduit, etc. and all permits/fees).

## Net Metering Your Grid Tied System

If you generate more electricity over a billing period than you consume, the utility will credit your electric bill for every kilowatt-hour of electricity sent back to the power grid. The credit is applied at the retail rate for power. Net metering will continue for the life of the solar electricity installation.

## Washington State Sales Tax Exemption

Until June 30, 2011, all solar electric systems less than 10 kW in size are exempt from the state sales taxes. From July 1, 2011, through June 30, 2013, solar electric systems less than 10 kW in size are exempt from 75% of the state sales tax. The tax exemption expires June 30, 2013.

RESOURCE

Your Installer will provide the required forms. Exemption legislation: RCW 82.08.02567

## Washington Renewable Energy Production Incentive

As of August 2006, Washington State provides financial incentives for electricity generated from renewable energy resources. Eligible electricity producing renewables include solar, wind, and anaerobic digestors (converts methane gas captured from livestock manure to electricity).

The incentive is based on the total number of kilowatt-hours (kWh) of electricity generated between July 1 and June 30 (or the closest regular billing cycle) of the following year. Customers with eligible generation systems who have signed up for the program by submitting the Department of Revenue (DOR) application form and received certification from the DOR, will receive a letter and application

form once per year from City Light. The letter document's the system's production based on City Light's reading of the production meter. Once the customer approves the kWh amount and returns the signed application back to City Light, they will receive a check for the incentive payment. Utilities that pay customers renewable energy incentives are reimbursed by a credit on their state taxes.

The program authorizes utilities to pay the following for the electricity produced by PV systems:

- $0.15 /kWh for a PV system with no "Made in Washington" components
- $0.18 /kWh for a PV system with a "Made in Washington" inverter
- $0.36 /kWh for a PV systems with "Made in Washington" panels
- $0.54 /kWh for a PV systems with "Made in Washington" panels and inverter

Modules made in Washington are expected to be available in 2009/2010. The program is capped at $5,000 per year, per customer, and expires in 2020.

RESOURCES

Washington Legislation

- Renewable Energy Production Incentive—WAC 458-20-273: http://apps.leg.wa.gov/WAC/default.aspx?cite=458-20-273
- Washington State Department of Revenue registration form: http://northwestsolarcenter.org/5101%20q%26a.pdf

### Federal Income Tax Credits

The federal Energy Policy Act of 2005, as amended by the Emergency Economic Stabilization Act of 2008, includes provisions for individuals and businesses to claim a 30% federal income tax credit for the cost of solar installations. Tax credits apply to systems placed in service before January 1, 2016.

RESOURCE

For information on Federal Tax Credits, visit:

- http://www.dsireusa.org/
- http://www.energysavers.gov/

### Green Tags

System owners have the option to sell their "green tags," also known as Renewable Energy Credits (RECs) for an additional revenue source associated with the production of power. Customers may, however, choose not to sell the green tags, in order to claim the environmental benefits of the clean electricity for their own use. The REC market is very new. As demand for RECs from states, businesses, and individuals increases, we expect the value of RECs to increase as well.

RESOURCE

Northwest Solar Cooperative: http://www.solaroregon.org/get-involved/northwest-solar-coop

## Example Cost Calculations

The examples below illustrate how the different sources of revenue and savings come together to impact the investment in a solar electric system.[6] The snapshots are focused on the first five years after installation, as that is when most of the financial benefit will be received. However, savings on your energy bill through net metering will continue, for the lifetime of the system. Both examples below assume a 1 kW PV system installed for $8,000 will produce 900 kWhs per year and that the system was deemed exempt from the state's sales tax. The examples show the financial impact of using Washington-made solar modules, and assumes the installed cost (labor, equipment and all permit fees) of both Washington-made and out-of-state panels is the same.[7]

### Example #1
1 kW PV system (producing 900 kWh/year)

| | |
|---|---|
| PV System Installed Cost | $8,000 |
| Federal Incentives—Tax Credit, 30% of total cost | $2,400 |
| Incentive (non-WA made components)—15 cents /kWh, 5 year total | $675 |
| Net metering—Seattle City Light @ 7 cents /kWh, 5 year total | $315 |
| Green tags sales @ 2 cents/kWh, 5 year total | $90 |
| Incentives—Total after 5 years | $3,480 |
| Percent of system cost recouped after 5 years | 44% |
| Cost after 5 years of receiving incentives | $4,520 |

### Example #2
1 kW PV system (producing 900 kWh/year) —with Washington-made modules

| | |
|---|---|
| PV System Installed Cost—<br>1 kW PV system, producing 1000 kWh /year | $8,000 |
| Federal Incentives—Tax Credit, 30% of total cost | $2,400 |
| Incentive (non-WA made inverter)—36 cents /kWh, 5 year total | $1,620 |
| Net metering—Seattle City Light @ 7 cents /kWh, 5 year total | $315 |
| Green tags sales @ 2 cents/kWh, 5 year total | $90 |
| Incentives—Total after 5 years | $4,425 |
| Percent of system cost recouped after 5 years | 55% |
| Cost after 5 years of receiving incentives | $3,575 |

[6] To get a rough idea of total costs, including possible monthly cash flows if you finance your system, check out the Clean Power Estimator at http://kyocerasolar.cleanpowerestimator.com/kyocerasolar.htm.
[7] Thanks to Mark Aalfs at Tacoma Power for the initial version of these examples.

# Maintenance, Resale, & Recycling

PHOTO CREDIT: SEATTLE CITY LIGHT

## Regular Maintenance

There is very little maintenance required on a PV system with no moving parts. Some system owners wash their panels, but in the Northwest, our climate tends to take care of this chore. You may want to brush off the panels if they tend to collect leaves, but other than that, your system should operate as designed with no intervention. You can also keep track of your production by reading your production meter or checking the inverter display.

## Resale Value

The affect of a solar system on the appraised value of your home can be hard to predict, but according to a study by ICF Consulting, every $1,000 reduction in annual energy bills increases a home's resale value by $10,000 to $25,000. However, homes are generally valued in comparison to similarly sized and aged homes around them, and if there aren't many solar homes in your neighborhood, the appraiser may not have a bar to measure against.[8] The market for solar homes continues to grow as energy costs increase along with an increased interest in sustainable building.

## Recycling PV panels

While it will be another 10 years until the first large number of photovoltaic panels reach the end of their life, the manufacturing members of the European association, PV CYCLE, have committed to setting up a voluntary collection and recycling scheme for end-of-life modules. They are committed to collecting a minimum of 65% of PV modules installed in Europe since 1990, and to recycling 85% of waste. Europe is leading the way and since many manufactures involved in PV CYCLE do business also in the U.S., there's potential for a similar initiative here in North America.

RESOURCE

PV Cycle: http://www.pvcycle.org/

[8] http://www.realtor.org/rmodaily.nsf/0/1aab2c6905430c9f8625730c0058fd32?OpenDocument, accessed January 2, 2009.

## Picking a Contractor

PHOTO CREDIT: PUGET SOUND SOLAR

As with any construction project, best practices include asking these basic questions of a potential contractor:

- Do they have a business license?
- Are they licensed for the work you want them to do (mechanical, electrical, structural, etc.)?
- How long have they been in business?
- How many solar electric systems have they installed?
- Will they provide references?
- Have they attended manufacturer, trade association, or other training on solar electric installations?

In comparing bids, you should consider warranty service, installed system price (equipment plus installation), system size, permit costs, and predicted energy output.

It's a good idea to check the Washington Labor and Industries website to learn more about the listed contractor, licensing status, violations, etc.

The North American Board of Certified Energy Practitioners (NABCEP) runs a quality credentialing and certification program for renewable energy professionals. In order to be NABCEP certified, a practitioner must meet installation experience requirements, sign a code of ethics and pass a four-hour exam. Look for the NABCEP seal on contractors' websites. More information about NABCEP and a list of certified installers can be found at their web site.

RESOURCES

Labor and Industries: http://www.lni.wa.gov/TradesLicensing/Contractors/HireCon/

NABCEP: http://www.nabcep.org/

Seattle City Light's Solar Page: www.seattle.gov/light/solar and select "Find Solar Contractors"

# Installation and Incentive Checklist: 9 Steps to Solar Power

## ☐ #1 System Selection

Contact contractors, schedule site evaluations, and choose your system design. Use the "Find Solar Contractors" link at www.seattle.gov/light/solar to find installers that have installed at least three PV systems in Seattle City Light's service territory.

> TIP
>
> Installers typically charge $150–$300 for a site evaluation and often refund that cost with the purchase of a system.

## ☐ #2 Interconnection Application

Contact Seattle City Light's Conservation Help Line or visit our Solar Energy website for downloadable forms and information about connecting your new PV system to the electrical grid. Complete and submit these forms ***prior to installation***.

Once you submit your applications, a City Light representative will make a visit to your site ***prior to installation*** to mark the appropriate location for a production meter socket (socket to be installed by your installer, meter to be installed by City Light).

The following forms are required:

- Interconnection Application & Agreement, with a "one-line" electrical diagram of the proposed system and an inverter "specification sheet" (most solar installers will complete these forms for you).
- Application for Electric Service—required to participate in state incentive program (includes the installation of a production meter, $62 fee, check payable to Seattle City Light).

City Light Electric Service Representatives at your local (North or South) Service Centers are available to work with you or your installer to review your application submittals.

> RESOURCES
>
> Submit applications to Seattle City Light, Attn: Intake Desk, 1300 N. 97th Street, Seattle, WA, 98103.
>
> For questions contact Electric Service Representatives Candace Gruber at (206) 684-0791, candace.gruber@seattle.gov (projects North of Denny), or Dan Langdon at (206) 386-1678, dan.langdon@seattle.gov (for projects South of Denny).

## ☐ #3 Electrical Permit

The person installing the system, typically your solar contractor, must obtain an electrical permit (specifically an Electrical Permit Application: No Plan Review). Zoning, setback requirements, roof height, and exposure may impact your installation. Contact DPD for land-use and electrical permit information if you have questions about your particular property.

RESOURCES

Electrical Permit Application: No Plan Review:
http://www.seattle.gov/dpd/Publications/Forms/Over-the-Counter/default.asp

Department of Planning & Development, Applicant Services Center, 20th floor of Seattle Municipal Tower, 700 Fifth Avenue, Seattle, WA, 98104, (206) 684-8850, www.seattle.gov/dpd/asc.

NOTE

Seattle City Light customers residing outside of Seattle should contact their local building department or the Washington Department of Labor and Industries for electrical permits.

## ☐ #4 Installation

Install your solar electric system, including your production meter socket. City Light should have marked the ideal location for the production meter socket (for ease of meter reading). If you or your contractor have any questions about the marked location, please call your Service Representative (see Resources under Step 2).

## ☐ #5 Electrical Inspection

Once installation is complete, call the Department of Planning & Development (or your local electrical permitting office if you are outside of Seattle) for an electrical inspection. New construction requires both a cover and final inspection—existing structures require only a final inspection.

After passing the electrical inspection, you must notify your City Light Service Representative (same contact from Step 2). When City Light confirms your system was installed according to plan and has passed inspection, your Interconnection Agreement will be signed and a copy will be returned to you for your records.

Congratulations! Once your system passes its electrical inspection, you may begin generating electricity. If you are not planning to apply for production incentives, this is your last step.

## ☐ #6 Production Meter

Once City Light confirms that your system passed inspection, a meter technician will be scheduled to install your production meter.

## ☐ #7 Washington State Certification

To be eligible for the production incentives, you must complete the Washington State Department of Revenue's (DOR) Renewable Energy System Cost Recovery Certification form and mail or fax it to DOR as directed on the form. DOR will assign you a Tax Reporting Number (if you do not already have one), sign the form, and return the form to you along with a cover letter. Keep this form in a convenient location as you will need to submit a copy of it to City Light the first time you apply for your incentive.

RESOURCE

DOR Renewable Energy System Cost Recovery Certification form, visit www.seattle.gov/light/solar and click on "Install Solar" on left sidebar.

## ☐ #8 Apply for Federal Tax Credits

Individuals and businesses that install solar electric systems are eligible for a federal tax credit of 30% of the system cost (the total of installation and materials). Individuals use Residential Energy Credits IRS Form 5695 and businesses use the Investment Credit IRS Form 3468. Updated forms can be found on the IRS website, www.irs.gov.

## ☐ #9 Annual Incentive Payments

To monitor your production and calculate your incentive, City Light will read your production meter on the same schedule as your existing billing meter.

In July of each year, Seattle City Light will mail you a letter reporting the kilowatt-hours (kWh) produced by your solar electric system during the previous 12 months and an *Annual Incentive Payment* form. Annual production will be based on City Light's most recent production meter reading. For most customers, this reading will occur late May–July. The form will also document the incentive payment rate for the equipment you have installed.

Customers will be asked to verify the kWh data and incentive payment by signing and returning the form to City Light. By September 30, you will be notified if your incentive application has been approved. Your incentive check will be mailed no later than December 15 of each year.

First time incentive payment applications must include copies of your DOR Certification form and cover letter approving your renewable energy system.

As a renewable energy generator, you must maintain all records of energy production and incentive payments received for a period of five years. City Light or DOR may review these records with five working days notice.

# Additional Resources


PHOTO CREDIT: MARTHA ROSE CONSTRUCTION

For solar questions not answered by this guide please contact Seattle City Light's Energy Advisor at (206) 684-3800 or by email at SCLEnergyAdvisor@seattle.gov.

If you want to do additional research here are some resources you may find useful:

- U.S. Department of Energy Solar Energy Technologies Program—a consumer resource covering solar basics, applications, and, research and development at the national level. http://www.eere.energy.gov/solar/photovoltaics.html
- Solar Washington—the local chapter of the American Solar Energy Society, providing events, newsletter and links posted on the web. http://www.solarwashington.org
- Northwest Solar Center—a program and free education service of the WSU Cooperative Extension Energy Program (206) 396-8446. http://www.northwestsolarcenter.org

### Solar Works in Seattle!

We hope you decide to join the many Seattle area residents who are taking advantage of a local renewable resource to generate their own clean, green power.

*Seattle City Light is a publicly owned utility dedicated to exceeding our customers' expectations in producing and delivering low cost, reliable power in an environmentally responsible and safe way. We are committed to delivering the best customer service experience of any utility in the nation.*

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Seattle City Light
*Conserving Energy for a Sustainable Future*

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