



## ***An Oregon Solar Primer***

### ***A brief description of solar energy in Oregon and available incentives***

#### ***Solar Energy in Oregon***

While eastern and southern Oregon certainly have more sunny days, the Willamette Valley is an entirely viable solar energy location. For example, Germany is making a huge investment in solar energy, and currently over one half of the solar panel capacity in the world is used there. Germany's best location gets as much solar radiation as the Willamette Valley. Solar works here.



Domaine Drouhin Oregon - Dundee, Oregon

#### ***How does a Solar Energy system work?***

A grid-tie solar electric system is comprised of two major components: photovoltaic panels (PV) and DC-AC inverters. While there is certainly some complex technology in the design and manufacture of solar electric systems, the process of converting sunlight to electricity is fairly simple: sunlight strikes specially treated silicon cells in the photovoltaic (PV) panels creating an electron flow. The electrons pass through the inverter which "inverts" the DC power from the panels to AC and sends it out to the utility grid. These systems are referred to as "grid-tie" systems because the building remains attached to the grid. Unlike "off-grid" systems, there are no batteries. A grid-tie solar electric system is designed to supplement the power used from the electric utility. These systems can be installed in several different ways - roof attachment along with pole and ground mounting.

## ***Net Metering***

The term *net metering* refers to the method of accounting for a PV system's electricity production. It is a policy that allows PV system owners to receive the full value of the electricity that their solar energy system produces. As the owner's PV system produces electricity, the kilowatts are used first to meet any electric requirements of that meter's load. If more electricity is produced from the PV system than needed, the extra kilowatts are fed into the utility grid.

Understanding your rate schedule, especially if you have several meters on the site, is important. If the meters are on the same utility rate schedule you can aggregate their total usage in sizing your system. If not, there are other options. Tanner Creek Energy will help you interpret your utility usage and billing information.



Les Schwab corporate headquarters - Bend, Oregon

## ***Financing a Solar Power System***

***Get your CPA involved early! They may be the most important person in the process.***

While there are several available financial incentives, only your financial advisor can determine which, if any, are applicable to your business. There are many sources for these incentives: they include the Oregon Business Energy Tax Credit, the federal renewable energy Investment Tax Credit, MACRS 5-year accelerated depreciation and, depending which utility territory your operation resides in, the Energy Trust of Oregon or the Bonneville Power Administration. In addition, each system is allowed to retain use of its Green Tags for the first two years of operation. Tanner Creek Energy will work with your advisor to take the best possible advantage of these programs.

### **Oregon Business Energy Tax Credit (BETC)**

The Oregon Business Energy Tax Credit (BETC), commonly called the "betsy", is up to 50% of the eligible system cost based on the system size and efficiency. It includes a pass-through option, which allows the system purchaser to "pass" the tax credit to a partner with an Oregon tax liability. The Oregon BETC requires an application fee of .06% of the eligible system cost.

### **Federal Business Energy Tax Credit**

The Federal BETC offers a straight 30% tax credit. This is designed to be taken in the tax year of system start-up. Unlike the Oregon BETC, which is credited over 5 years, this is a single, one-time deduction. Also unlike the Oregon BETC, the pass-through option is not available; the credit must be used by the system owner.

## Accelerated Depreciation - MACRS

Under the Modified Accelerated Cost-Recovery System (MACRS), businesses can recover investments in solar, wind and geothermal property through depreciation deductions. The MACRS establishes a set of class lives for various types of property, ranging from three to 50 years, over which the property may be depreciated. For solar, wind and geothermal property placed in service after 1986, the current MACRS property class is five years. The basis calculation is reduced by half the amount of the federal tax credit or 15%. In other words, 85% of the purchase price would be the depreciation calculation basis.

## Energy Trust of Oregon (ETO)

The Energy Trust of Oregon offers rebates of between \$1.00 and \$1.50 per watt of installed DC capacity for PGE and PP&L customers for system up to 100kW. Your system must be approved for the rebate before beginning the project. It's also important to note that ETO requires that roof mounted systems be on a roof certified with at least 15 years of remaining life. We're responsible for the majority of this paperwork. It includes such things as expected annual electricity production, sun charts, technical specifications, and equipment list. This rebate is taxable.

## For More Information

The following web sites offer further information on these incentives:

Oregon Department of Energy: <http://egov.oregon.gov/ENERGY/CONS/BUS/BETC.shtml>

Energy Trust of Oregon: <http://www.energytrust.org/RR/PV/provide.html>

Database of State Incentives for Renewable Energy: <http://www.dsireusa.org/>

Tax Incentives Assistance Project: <http://www.energytaxincentives.org>



Elk Cove Vineyards - Gaston, Oregon

## ***Operation and Maintenance***

Solar PV systems have no moving parts and, as such, need little maintenance. The primary maintenance will be ensuring that the PV panels stay clean for maximum efficiency. In western Oregon, our climate will take care of this much of the year. Most systems come with remote monitoring systems that will notify both you and Tanner Creek Energy about possible system problems. With panel warranties of 25 years and inverter warranties of up to 20 years these systems are designed for an extended system life - perhaps 30 - 40 years. Your solar energy system will be producing renewable, carbon neutral energy for a long time.

## ***About Tanner Creek Energy***

Tanner Creek Energy is an Oregon-based, Oregon focused general contractor and project developer of commercial/industrial scale solar PV projects. Located in Portland, we offer turn-key solutions including design and project management as well as assistance with all applicable incentive paperwork. In addition to our skills and experience, we have full compliment of experienced, Oregon-based, subcontractors including electrical, excavation, engineering, general construction and design. Tanner Creek Energy is member of the Oregon Wine Growers Association as well as a participant in the annual Oregon Winegrowers Symposium. We are also the host and sponsor of the annual *The Sun and the Vines: Renewable Energy and the Oregon Wine Industry* seminar held each summer.

### **Completed systems:**

Columbia Sportswear corporate headquarters, Portland, OR  
100.1 kW roof mounted system

Domaine Drouhin Oregon, Dundee, OR  
94.5 kW ground mounted system

Elk Cove Vineyards, Gaston, OR  
38.8 kW roof mounted system

Express Plaza, Tualatin, OR  
31.8 kW ballasted roof system

Grand Cru Estates, Carlton, OR  
51.3 kW ground mounted system

Kramer Vineyards, Gaston, OR  
3.6 kW roof mounted system

Lemelson Vineyards, Carlton, OR  
49.7 kW ground mounted system

Les Schwab Tire Centers headquarters, Bend, OR  
35.1 kW roof mounted system

Pacific Crest Alpacas, Hillsboro, OR  
24.0 kW ground mounted system

Patricia Green Cellars, Newberg, OR  
3.6 kW ground mounted system

Sue Buel School, McMinnville, OR  
19.2 kW roof mounted system

