Board Decision
Authorizing Funds for Christmas Valley Solar PV Project
December 16, 2011

Summary
Authorize funding of up to $5,000,000 toward the above-market cost of a 5.88 megawatt (MW) ground-mounted solar photovoltaic facility in Christmas Valley, developed by Obsidian Finance Group and delivering energy to Portland General Electric (PGE).

Background
- Goal 2 of the 2010-2014 Strategic Plan: to accelerate the rate at which renewable energy resources are acquired, helping to achieve Oregon's 2025 goal of meeting at least eight percent of retail electrical load from small-scale renewable energy projects.

- The nameplate capacity of the photovoltaic array will be approximately 5.88 MW. The project will generate 1.15 average megawatts per year.

- PGE is obligated under Oregon's Solar Capacity Standard, established in 2009 by House Bill 3039, to install specific amounts of photovoltaic capacity by 2020. This project will achieve 46% of PGE's assigned goal. The legislature amended the law in 2010 to specify that Energy Trust can support the above-market costs of such projects.

- PGE brought this project to Energy Trust under our Master Agreement for renewables. The master agreements with the electric utilities ensure that proposed projects are examined on the same basis as other projects the utilities are considering, and that Renewable Energy Certificates (RECs) that Energy Trust acquires for these projects will benefit the ratepayer.

- The renewable energy programs expect to have approximately $8 million in uncommitted PGE incentives at the end of 2011. The 2012 solar budget has sufficient funding to support a large project such as this.

- There are no other renewable resource projects currently competing for these PGE incentive funds.

- A custom incentive based on above-market cost has been calculated for this project, since it far exceeds the size supported by the standard solar electric incentive program.

- The Renewable Advisory Council strongly supports this project.

Discussion
- At 5.88 MW, this will be the largest solar electric project Energy Trust has funded, and the largest in the state. For comparison, the enXco solar projects in Yamhill County total 3 MW and the Baldock solar highway project is 1.75 MW.

- The project will be installed in Christmas Valley, Oregon, interconnect to Midstate Electric, transmit power through Bonneville Power Administration (BPA) and sell power to PGE. This will be the first solar project in Oregon to wheel power through a consumer-owned utility and BPA.

- For PGE, acquiring this resource is much like bringing power from some of the large wind projects in eastern Oregon into their supply. The project will sell power to PGE under a 25-year contract with a negotiated power purchase price. It will not be a Qualifying Facility under PGE's standard tariff.

- Because the sun shines 30 percent more in Christmas Valley than in PGE service territory, the additional cost of wheeling power to PGE will be outweighed two-to-one by the additional revenues from this project's solar generation compared to the same system installed on PGE's network.

- The project will likely use trackers, making it the first large solar installation in Oregon to track the sun. Tracking would boost the generation approximately 20 percent compared to a fixed-tilt array. The developer would be required by Energy Trust and PGE agreements to maintain the trackers over the life of the system.

- The project has a coveted Business Energy Tax Credit (BETC) pre-certification, received before the BETC program was capped by the legislature this year. Because of its ability to leverage state funding, this is the only viable large solar project PGE is considering at this time. The project seeks a pass-through partner to claim the BETC. To qualify for its BETC, the project must be operational and receive final certification by end of 2012.

- The project is being developed by Obsidian Finance Group, and will be owned and operated by a second developer that meets PGE's financial and credit requirements. The developer will bring investor(s) to provide the equity and claim the tax benefits.

- Staff reviewed the project design and costs and found them to be reasonable for a project of this size, type and design. This project's up-front cost of $3.82 per watt is less than previously-funded large solar projects, and its operation and maintenance costs are comparable.

- Energy Trust determines incentives based on a project's above-market cost: the difference between the cost of power from the project and the cost of comparable power in the market. The analysis includes tax credits and other benefits available to the project. Above-market costs are calculated as a net-present value. As shown in the table below, we calculate an above-market cost of $5,558,004.

- Staff recommends an incentive of up to $0.85 per watt of final total project capacity.
    - PGE is optimistic that it can buy the power at a price that will support this incentive rate.
    - This incentive rate is less than the $1.15 per watt for enXco (3 MW, 2009) and the $1.00 per watt for Baldock (1.75 MW, 2010).
    - Although it is higher than the $0.75 per watt incentive offered through the standard solar program for commercial projects, it is 15% lower on a per-kilowatt

hour basis due to the additional sunshine in Christmas Valley, and would be even lower if trackers are utilized.

- Total capital project cost is $22,336,411. An Energy Trust incentive of $5,000,000 would cover 90% of the $5,558,004 above-market cost. Above market costs will be reevaluated after the second developer is confirmed.

- The final incentive, not to exceed $5,000,000, will be negotiated with the developer. Depending on the revised costs and the power purchase price offered by PGE, Energy Trust's incentive may be reduced.

Project Financial Summary - NPV Basis

Project Capacity (MW)			5.88
Annual Output (MWh)			10,054
Evaluated Resource Life (Years)			25
NPV Revenues			
	Power Sales	$	9,547,252
	BETC pass through	$	6,118,721
	Tax Benefits	$	8,369,300
	Total NPV Revenues	$	24,035,273
NPV Costs			
	Capitalized Construction Cost	$	22,336,411
	Operations Expense	$	34,919
	Maintenance Expense	$	719,604
	Other Expense	$	2,752,302
	Transmission Expense	$	1,450,892
	Taxes	$	167,322
	Total NPV Cost	$	27,461,449
	Net Above Market Cost	$	(3,426,176)
Net Above Market Cost After Tax Adjustment		$	(5,558,004)

- Energy Trust will receive 100% of the Renewable Energy Certificates for this project and assign them all to PGE under the Master Agreement for compliance with Oregon's Renewable Energy Standard (RES) and Solar Capacity Standard. Under Oregon law, PGE can expect to receive 2-for-1 credit for these solar RECs toward the RES.

- The Energy Trust contract will have the standard performance and payback provisions.

- The incentive will be paid upon project commissioning or over time, depending on security provisions in the Energy Trust and PGE contracts.

Recommendation

Authorize up to $5,000,000 for the 5.88 MW Christmas Valley Solar PV project.

RESOLUTION 613

AUTHORIZING FUNDS FOR CHRISTMAS VALLEY SOLAR PV PROJECT

Whereas:

1. **Portland General Electric (PGE) desires to purchase energy from 5.88 megawatts (MW) of solar photovoltaic generating capacity in Christmas Valley, Oregon, to count toward its state Renewable Energy Standard and Solar Capacity Standard mandates.**

2. **This project has already secured Business Energy Tax Credit precertification, a major barrier to renewable energy projects in Oregon.**

3. **Total project cost is estimated to be $22,336,411, which staff considers reasonable for a project of this size and design.**

4. **The above-market cost on a net-present value basis over 25 years is estimated to be up to $5,558,004.**

5. **Staff recommends an Energy Trust incentive of up to $0.85/watt, representing approximately 90% of the above-market cost, and PGE supports this incentive level.**

6. **Energy Trust will receive 100% of the Renewable Energy Certificates (RECs) for the project, and will assign those to PGE.**

It is therefore RESOLVED that the board of directors of Energy Trust of Oregon, Inc. authorizes:

1. **An incentive of up to $5,000,000 for a 5 MW, ground-mounted solar photovoltaic facility in Christmas Valley, Oregon.**

2. **Energy Trust to assign the RECs from this project to PGE for the benefit of its ratepayers and for compliance with PGE's renewable energy generation and solar capacity obligations to the state.**

3. **The executive director to negotiate and sign an agreement consistent with this resolution.**

Moved by: Seconded by:

Vote: In favor: Abstained:

Opposed: [list name(s) and, if requested, reason for "no" vote]