EnergyTrust of Oregon, Inc.

Approve Funding for Farmers Irrigation District Pressurization Project

December 19, 2008

Summary

Through the Open Solicitation Program, authorize up to $225,000 for Farmers Irrigation District (FID) to increase renewable energy generation by 465 megawatt-hours per year by replacing open, gravity-fed canals with pressurized pipes and equipment that regulates water use. Additionally an energy efficiency incentive of $154,067 will be offered separately by the Production Efficiency program, and requires no board action.

Background

- FID, near Hood River, includes several hundred non-domestic water users – a mix of orchards, nurseries, and hobby farms.

- FID has a year-round water right to extract 73 cubic feet per second (cfs) from the Hood River. This water is used either for irrigation or hydroelectric generation at a plant operated by FID.

- Historically, FID's water distribution system exclusively used gravity-fed canals. During the April 15-September 30 irrigation season, district members extract water from one of the distribution canals with their own irrigation pumps.

- FID is now embarking on the Lower District Pressurization Project, which will replace canals with enclosed, pressurized pipes, install two 125-horsepower pumps to pressurize the system, and install flow control valves to regulate water use.

- The pressurized pipes should eliminate canal leakage, evaporation and spillage at the end of each branch of the canal network.

- The water saved by the system, 4.91 cubic feet per second over the course of each irrigation season, will be run through the existing 1 and 2 megawatt turbines. This water is expected to generate an additional 465 megawatt-hours (MWh) over the course of the irrigation season.

- The project will reduce energy used by FID members for pumping by 481 MWh per year.

Discussion

- The Open Solicitation Program requires board approval for incentives of the proposed size.

- The project is unique in that it generates and saves electricity from the installation of common and inseparable components. Staff accordingly evaluated it under both the energy efficiency program and the renewable energy criteria to see if both incentives were warranted.

- For purposes of evaluation, the most straightforward cost allocation method is to allocate costs based on the percentage of electricity generated or saved: 49.2% to renewable generation and 51.8% to efficiency. This ensures project costs are not double counted. Under the efficiency program, the 481 MWh per year of savings would warrant a $154,067 incentive.

- Project costs assignable to renewable energy would be $1,328,659 plus $303,772 interest. Assuming a system life of 20 years, a BETC pass-through of $445,101 and accounting for power sale revenues and reduced operation and maintenance costs, staff determined that the above-market cost assignable to renewable energy is $590,984.

- An Energy Trust renewable incentive of $225,000 would fund 38% of the above-market renewable costs, provide FID with enough of a return to proceed with the project, and entitle Energy Trust to take 38% of the project's green tags. The proposed incentive has a levelized value of $0.039/kWh.

- This incentive meets FID's minimum financial return necessary to be able to immediately move forward with the project, and would meet other FID objectives: creating savings for their members, reducing operations and maintenance costs, and meeting the goals of their sustainability plan.

- Other benefits:

    - This would be Energy Trust's fifth hydro project, which would not only help demonstrate Energy Trust's commitment to this market, but would help further Energy Trust's relationships with irrigation districts. These relationships will be significant if Energy Trust decides to create a stand-alone hydroelectric program in the future.

    - In addition to saving electricity and generating renewable energy, the project conserves water and increases in-stream flows, which are important sustainability goals for FID.

    - Over its first 20 years, the project's clean power production will help to avoid 3,540 tons of CO_2 emissions – equivalent to planting 12 acres of trees.

- Funds for the project are in the Open Solicitation program budget for Pacific Power.

- The RAC reviewed this project on December 3, 2008 and recommended funding.

Recommendation

- Authorize up to $225,000 in incentives for the renewable energy portion of the project by approving resolution #497.

RESOLUTION 497

AUTHORIZING FUNDS FOR THE FARMERS IRRIGATION DISTRICT PRESSURIZATION PROJECT

WHEREAS:

1. **Farmers Irrigation District (FID) proposes to increase renewable energy generation by approximately 465 megawatt-hours per year at its existing hydroelectric plant by replacing open, gravity-fed canals with pressurized pipes and equipment that regulates water use. The same system will save approximately 481 MWh per year in energy from pumping.**
2. **Because the project generates and saves electricity from the installation of common and inseparable components, staff allocated project costs based on the percentage of electricity generated or saved: 49.2% to renewable generation and 51.8% to efficiency.**
3. **The energy saved warrants an energy efficiency incentive of $154,067, which Energy Trust will offer through the Production Efficiency program, which requires no board action.**
4. **The above-market cost of the renewable energy part of the project is $590,984. Combined with state energy tax credits, power revenues and other savings, an Energy Trust renewable energy incentive of $225,000 will make the project feasible.**

IT IS THEREFORE RESOLVED that the Energy Trust of Oregon, Inc., Board of Directors:

1. **Authorizes an incentive of $225,000 to offset the above-market costs of the renewable energy generation portion of the Farmers Irrigation District Pressurization Project.**
2. **The executive director is authorized to sign an agreement to pay such incentives provided Energy Trust takes title to at least 38% of the project's green tags (renewable energy certificates).**

Moved by: Seconded by:

Vote: In favor: Abstained:

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