Board Decision
EBD Hydro LLC '45 Mile' 3.5MW Hydroelectric Project

September 1, 2010

Summary

Authorize up to a total of $2.0 million over five years to offset the above-market cost of a 3.5 megawatt (MW) hydroelectric facility on an irrigation canal near Madras, OR.

Energy Trust Goals

- This project supports 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 Strategic Plan estimates that Energy Trust can acquire 23 average megawatts (aMW) of renewable energy between 2010 and 2014, an average of 4.6 aMW per year.
- This project supports the Open Solicitation program goal of developing hydroelectric facilities located outside federal and state protected areas.

Background

- EBD Hydro, LLC (EBD), a third-party developer, has agreed with the North Unit Irrigation District (NUID) to develop and operate a 3.5MW hydroelectric facility at Mile 45 of the NUID main canal. The project is expected to come online in the spring of 2012.
- Since 1946, NUID has delivered water from the Deschutes River and Crooked River to 50,000 acres under irrigation via 65 miles of main canal and 235 miles of laterals. The district is considered to be very efficient in its water transport and use. NUID will receive a lease payment from EBD tied to a percentage of the project's power sales.
- This project is EBD's first hydropower venture, but the developer has retained a skilled project team experienced with similar irrigation hydropower facilities.
- The project has been approved for a $7.2MM loan from the Oregon State Energy Loan Program (SELP) and will know the status of its Business Energy Tax Credit (BETC) application in November.
- After the RAC reviewed the project in July, we refined our analysis in two respects: the Federal Investment Tax Credit lowers the above-market cost more than we thought, and our consultant is concerned that the project's average generation could be lower. As a result, we propose that Energy Trust take more RECs than we represented to the RAC (48% of RECs rather than 25%).

Technical Analysis

- The proposed facility would:
  - Install 3,000 feet of pipe to create 128' of head;
  - use an average of ~360 cubic feet per second of water, April through October;
  - install a new generation facility that is expected to generate approximately 11,750MWh annually; and
  - be a Qualifying Facility, selling to PacifiCorp under standard rates and terms.

Above-Market Cost

- The project's above-market, net-present value is $3,023,499 over 20 years, including installation and operating costs, and assuming the project qualifies for state and federal tax benefits, as shown in the calculation below.
- We used our standard approach to determine the project's above market cost, i.e., the net-present value of the difference between the cost to produce the power from the project over its life and the market value of the equivalent grid power at standard rates. The analysis includes tax credits and other benefits available to the project:

Project Financial Summary - NPV Basis	
Project Capacity (Megawatts)	3.5
Annual Output (MWh)	11,750
Evaluated Resource Life (years)	20
NPV of Costs (capital costs and all expenses)	$ 16,894,265
NPV of Revenues	$ 14,116,185
NPV of Tax Benefits	$ 914,274
Net Above Market Cost	$ (1,863,806)
Net Above Market Cost After Tax Adjustment	**$ (3,023,499)**

- Staff and an independent contractor reviewed the project design and costs and found them to be standard and reasonable for projects of similar size, type and design.
- The total cost of project is $16,894,265.

Proposed Incentive

- Staff proposes an incentive of $2,000,000, paid in five $400,000 increments: the first payment would be made on project commissioning; the next four would be paid annually on the commissioning anniversary if the project generated at least 10,500MWh during the previous irrigation season (~90% of expected generation). Because first-year

production is often lower, the project would be given 5 years to meet the 4 year production goals. The net present value of this five-year payment stream is $1,441,910.

- At a total payment of $2,000,000, the project's energy would cost Energy Trust about $1.491 million per average megawatt (aMW).

- This cost is in the range of what we have paid for other hydropower projects: the Central Oregon Irrigation District project cost $652,028 per aMW; the Swalley project cost $2.916 million/aMW.

- Based on board policy, Energy Trust's share of Renewable Energy Certificates (environmental attributes of renewable energy that can be used to meet renewable portfolio standards and/or sold apart from the underlying energy) would be a minimum of 5,600 annually, up to 48% of the expected generation over the project's 20-year life.

- Staff propose contract milestones to ensure the project remains viable and on schedule and allow Energy Trust to withdraw funding if the project stalls. Milestones would be:, contracting for construction financing, successful permitting at local, state and federal levels, signing of interconnection and power purchase agreements, and site mobilization.

- Funds for the project are within the 2010 Open Solicitation program budget.

- At 3.5 MW, the project significantly increases the capacity in the Open Solicitation program hydropower portfolio. Currently, Energy Trust has ~1.25 MW of hydropower projects in operation and an additional 3.5MW under construction.

Recommendation

Staff recommends approval of $2,000,000 in funding for the EBD Hydro LLC project, by adopting resolution #563, below, authorizing the executive director to sign contracts consistent with the resolution.

RESOLUTION 563

APPROVING FUNDS FOR THE EBD Hydro LLC GENERATION PROJECT

WHEREAS:

1. **EBD Hydro LLC proposes to develop a 3.5 megawatt hydropower facility (expected to generate 26.83 average megawatts over a 20-year operating life).**
2. **Staff and an independent contractor reviewed the project design and costs and found them to be standard and reasonable for projects of similar type and design.**
3. **The net-present value of the project's above-market costs is $3,023,499 over 20 years.**
4. **Staff proposes a $2,000,000 incentive, to be paid in equal amounts ($400,000) over the course of five years.**
5. **At the proposed payment, the project's energy would cost Energy Trust about $1.491 million per average megawatt (aMW).**
6. **Energy Trust's hydropower generation portfolio is currently 4.75MW. At 3.5MW, the project would be a 73% increase.**

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

1. **Payment of up to $2,000,000 to be paid to EBD to offset the above-market costs of the hydroelectric plant;**
2. **Energy Trust will take ownership of 48% of the green tags expected to be produced by the project annually, 112,000 total with a minimum of 5,600 annually; and**
3. **The executive director to enter into a contract(s) consistent with this resolution.**

Moved by: Seconded by:

Vote: In favor: Abstained:

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