EnergyTrust of Oregon, Inc.

Board Briefing
Revised Renewable Energy Strategic Goals and Minimum Performance Measures

August 8, 2007

Summary

At the request of the board, staff drafted revised goals for the Energy Trust's renewable energy efforts, reflecting the new focus on projects of 20 megawatts (MW) and less as specified in the Oregon Renewable Energy Act. Staff analyses suggest reducing the current OPUC performance measures from the minimum 12 average megawatts (aMW) of renewable energy production per year to a new range. The proposed starting point would be 3.2 aMW in 2009, growing to 4.2 aMW by 2016. Staff seeks feedback from the board on the approach and results.

Background

The passage of SB 838, Oregon's Renewable Energy Act, created a renewable portfolio standard for Oregon electric utilities. Along with specifying the amount of new renewable resources that must be in utility portfolios, it extended the life of the public purpose charge and refocused the renewable energy portion of the charge on smaller projects of 20 MW or less. Referred to in the legislation as 'community energy projects,' the definition of what constitutes renewable energy for Energy Trust purposes was not changed.

Energy Trust current strategic plan goals and minimum OPUC performance measures for renewable energy include investment in large utility-scale projects. While such projects require significant incentives, they also deliver large amounts of energy for less incentives on a per kWh basis.

Including projects that are operating, under construction and under contract, Energy Trust will have helped bring 91.1 aMW of large-scale generation and 19.7 aMW of community energy generation (20 MW and less) on line by the end of 2008. This averages to 15.2 aMW of large-scale generation per year and 3.28 aMW of smaller-scale generation per year, above the minimum 12 aMW anticipated each year.

Proposed Revised OPUC Performance Measures

Since 2003, annual funding for large-scale generation has averaged 40% - 45% of the overall budgets for renewable energy generation. Assuming that all other program considerations remain equal, increasing the small-scale renewable budget by 40% might suggest that the new minimum performance measure should be 40% higher than the historical average, or 4.6 aMW per year. This would presume that all future projects cost on average what they have historically.

There are reasons why historical costs are not expected to continue in the future. First, prices have significantly increased for all energy technologies in the last two years. While the increase has leveled off, equipment and construction costs are still expected to rise for the relatively lower cost community wind projects. Second, Energy Trust has developed the least expensive projects, those that were easy and quick to bring on line. This deliberate strategy created volume, attracted a market and rationed limited funds among numerous, competing opportunities.

It is assumed that to achieve greater volume in the future, we will need to penetrate markets more deeply, investing more than was initially required to achieve continued results. Over the longer term, we can also expect some costs to come down due to technology improvements, economies of scale and experience. These gains should allow increasing levels of achievement over time.

Approach

The suggested staff approach to forecasting new minimum performance measures involved the following steps:

1. Establish base costs to acquire renewable energy by program and by utility.
    a. Derive from actual projects completed in 2007 and known contract costs for 2007-2008.
    b. Revise to incorporate any changes to or new state and federal tax benefits.
2. Forecast future revenues by utility.
3. Establish program shares of the budget for each program by each utility by year.
4. Forecast trends in acquisition costs by program considering:
    a. Technology cost trends
        - Energy Information Administration, trade groups, industry experts
    b. Electricity price forecasts
        - Utility IRP, Qualified Facility filings
    c. Tax benefit changes
    d. Energy Policies
        - Renewable Portfolio Standards
        - CO2 regulations and requirements

Results

Staff performed the analysis through 2016 to correspond with the first real RPS milestone and to reflect the increasing uncertainty around technology forecasts. Staff found the range of realistic achievement was from 3.2 – 5.2 aMW in 2009, growing to 4.2 - 7.7 aMW a year by 2016. This range primarily reflects the differences in expectations for technology gains and other project-related cost savings. The first chart (below) graphs the possible annual achievement by year from 2009-2016.

Not counting the accomplishments through 2008, the Energy Trust can expect to get from 29.4 to 49.8 aMW of additional community energy with funding through 2016. The second chart shows the cumulative achievement from the annual acquisitions in the first chart.

The Oregon Renewable Energy Act sets out a "soft" goal of deriving 8% of the state's energy from community energy projects by 2025. Staff estimates this roughly translates to 270 aMW in 2015 and 450 aMW in 2025 for PGE and Pacific Power. Our analysis indicates that Energy Trust has enough completed installations, pending projects and future funding, to meet 18%-26% of the community energy goal identified in the Oregon Renewable Energy Act.

Sensitivity Analysis

There are varying levels of uncertainty surrounding this projected range of results. Aside from the significant assumptions about gains in technology and costs, other assumptions that have large impacts on these results include tax codes, energy policy, public purpose revenues, program mix and market prices for power.

The single largest effect on the results will come from changes in state and federal tax program and energy policies. For instance, elimination of just the federal tax credits would increase Energy Trust costs and reduce potential results by at least 20-35%. An inability to utilize the state's business energy tax credits could reduce achievable potential by at least another 30%. There are an infinite number of possible changes and alternative futures for such tax and policy changes which could be considered. In this analysis, staff assumed the state and federal tax benefits and policies for renewable programs would continue at the current levels. Staff proposes to retain this same assumption as goals and performance measures are finalized.

Differences in funding for the mix of individual programs can also change results. Staff estimated program shares based on the following: historical distribution, near-term opportunities and a balance between high and low cost resources. These assumptions are reflected throughout the following analysis:

Program	Pacific Power	PGE
Biopower	35%	30%
Wind	25	30
Solar	20	30
Open Solicitation	20	10

At the extreme, achievable potential can be increased by 24% in both the high and low cases by reducing the open solicitation and solar programs to half of today's levels and assuming the additional biopower and wind can be acquired faster and at the same cost as in the base cases.

Changes in revenue forecasts will impact the results. In this analysis staff assumed a 2% annual growth rate in public purpose revenues, resulting in average total renewable energy program funding of $12.0 million per year. Keeping the revenue forecast flat over time would reduce the overall budget and lower both the high and the low forecasts by 9%.

Higher than expected prices to developers will lower the above-market costs to Energy Trust and allow more projects to be built. Lower market prices will increase above-market costs and constrain the number of projects Energy Trust could fund. However, such impact is not linear across technologies. The pattern and type of change in prices paid for peak, off-peak and seasonal prices will have widely differing effects on biomass, wind, solar and hydro projects.

Pacific Power and PGE are identifying revised power prices for qualifying facilities, those that are 10 MW and smaller with standard contracts. Our staff analysis includes an average estimate of

the impact of the new prices. The impact will need to be examined for all technologies separately and incorporated into final goals and revised performance measures.

Renewable Advisory Council Review

Members of the Renewable Advisory Council (RAC) thought the approach, assumptions and results seemed reasonable.

Next Steps

Based on board input and new utility power prices , staff will finalize this analysis and propose goals for board approval as part of the budget process. Staff will also work with the OPUC toward adoption of revised minimum performance measures.

Chart One

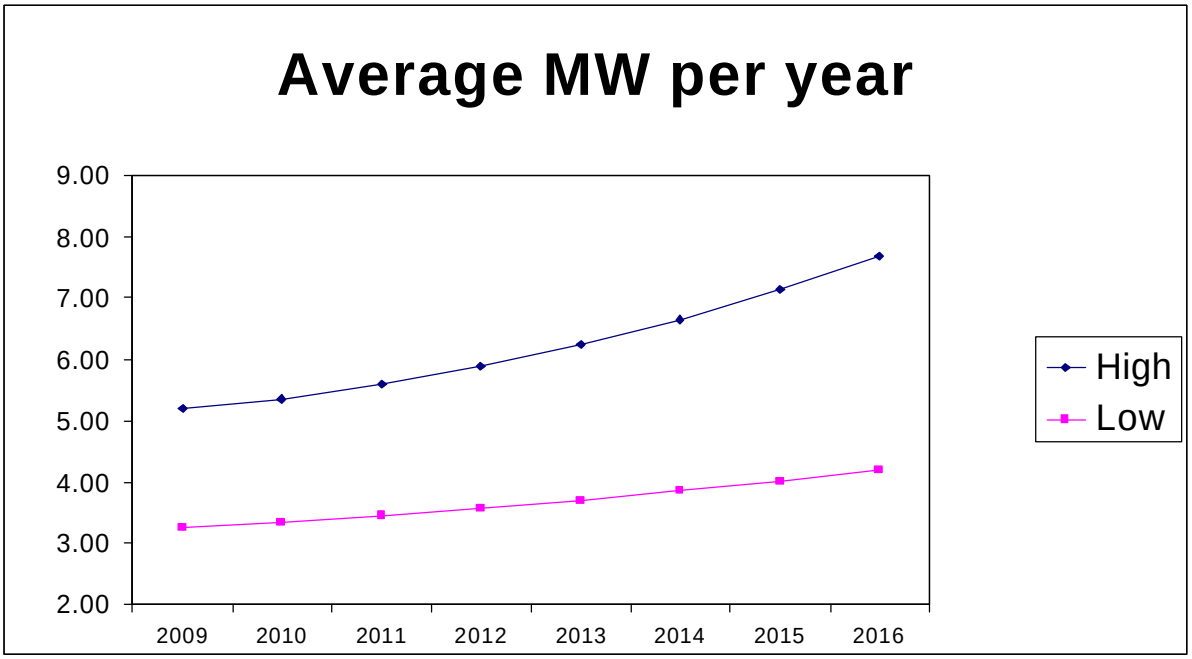
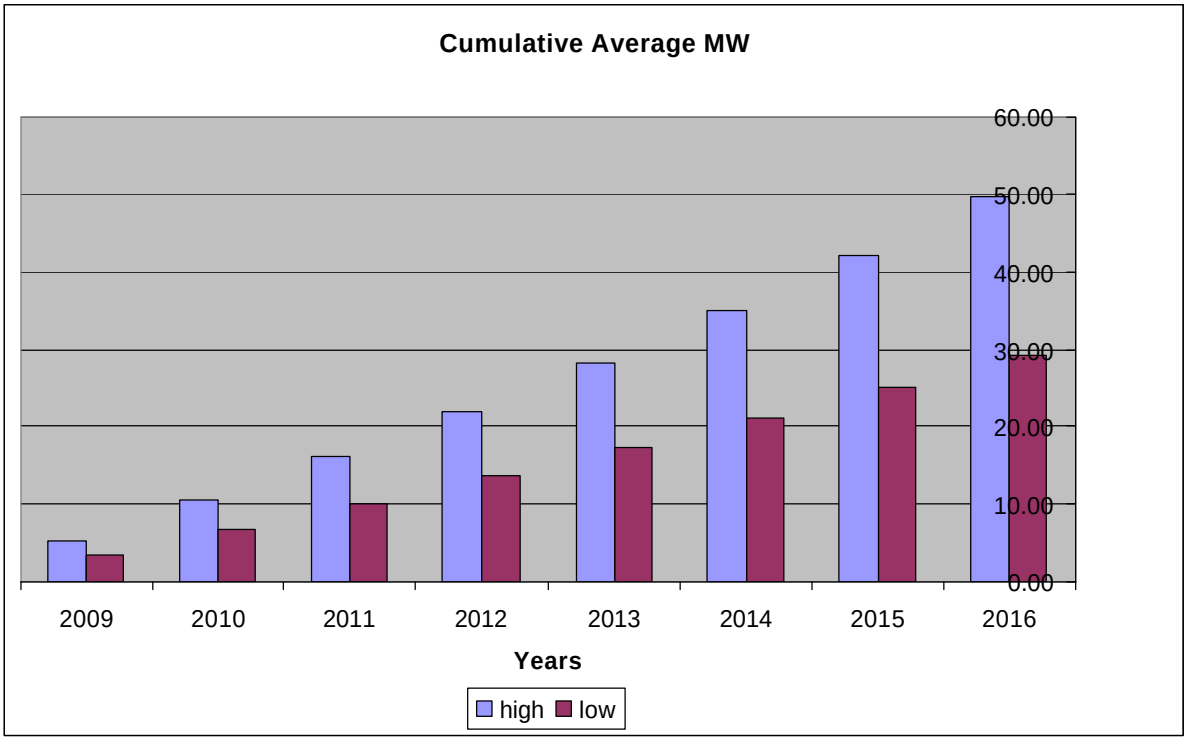
Chart Two