Cascade Policy Institute
OREGON

Testimony of John A. Charles, Jr.
President & CEO
In support of SB 807
April 4, 2013

I support SB 807 because I believe that a fresh set of eyes is needed to review the $320 million per biennium that flows through the Energy Trust of Oregon. The oversight required by statute or PUC order has become routine and bureaucratized, and important questions are not being asked.

To highlight this problem, I will address three of the major points raised by PUC Chair Ackerman, and offer alternative perspectives that you may not have heard before.

PUC Assertion #1: "ETO has been tremendously successful delivering cost-effective conservation at a very low cost to ratepayers."

Response: Any assertions about the success and cost-effectiveness of ETO's energy efficiency programs should be viewed with skepticism. The reason is that a great deal is unknown about the effectiveness of efficiency measures after they are in place. There are also many assumptions made about consumer behavior both before and after ETO intervention, which may prove to be false. This is the reason that ETO publishes True Up reports every year, and those reports show that much of the "conventional wisdom" from a particular year is proven wrong in subsequent years.

For example, in the 2012 True Up report, the authors note that estimated savings for the "Existing Homes" program for the years 2003-2011 ***had to be revised downward by 20% for electric savings.*** The main reason was due to an update of assumptions used for calculating the savings for compact fluorescent lamps (CFLs) that had been installed.

Since the previous assumption had been for higher levels of use, it over-estimated savings resulting from switching to CFLs. Thus, the previously reported savings of 22.82 aMW had to be downgraded to 18.22 aMW for this program. In addition, the 2012 True Up made a ***large downward revision*** to previously reported gas savings of 16% for the time period covering 2008 to 2011.[1]

[1] Energy Trust of Oregon, "True Up 2012: Tracking Estimate Corrections and True up of 2002-2011 Savings and Generation", October 2012, pp. 7-8.

In the 2011 True Up report, under the heading **Megaproject Evaluation**, the report assesses a large pulp and paper mill energy efficiency project that was funded in 2005 and completed in 2006. The process improvement relied on increasing the use of recycled newsprint. After several years of increased prices for recycled newsprint which resulted in reduced use of the energy-saving process, the plant ceased operations. The plant is expected to operate again, but the savings are not expected to achieve forecast levels. According to the consultants:

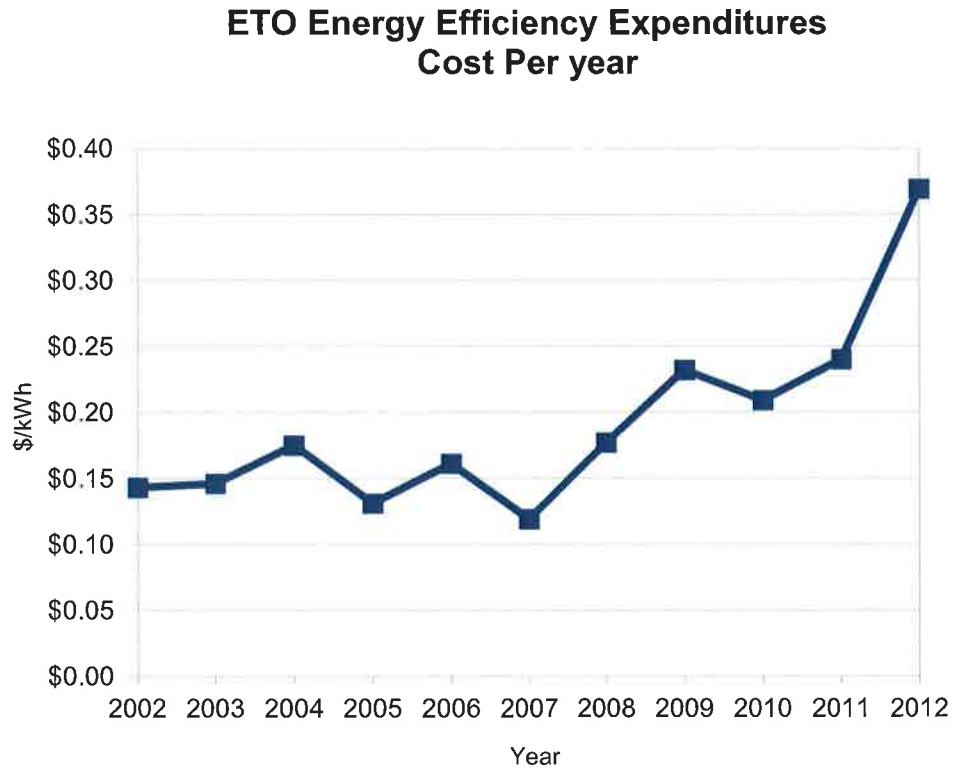
> *"An evaluation of the estimated savings found significant errors in initial estimates of the production levels and loads, and consequently the savings were lower than forecasted. Based on this evaluation, if operated at full capacity, the plant would save 24% of the forecast savings. Energy Trust's current projection, incorporated in this True Up, is that the plant will save 12% of initial savings projections on average for the forecast 10 year life. This is based on expectation that the plant will run, but not at full capacity all the time. The 2011 True up reflects a* ***savings reduction*** *of 50,881,756 kWhs, or 5.8 aMWs in 2005."*[2]

Each of the True Up reports includes revisions similar to the two mentioned above. Frequently the initial estimates of savings were overly-optimistic, and had to be revised downward. This makes it impossible to do accurate benefit-cost calculations or levelized cost analysis.

The charts below indicate that the costs of efficiency projects have been rising over time, and that "levelized cost" analysis may not be the best metric for evaluation.

ETO Expenditures on Electric Efficiency				**Data from ETO PUC Reports**		
Year	Expenditures	aMW Saved	mil $/aMW	kWh Saved	$/kWh	Levelized Cost
2002	$16,919,344	13.40	$1.26	117,969,120	$0.143	
2003	$22,465,094	17.40	$1.29	153,633,000	$0.146	
2004	$36,462,450	23.77	$1.53	208,225,200	$0.175	$0.017
2005	$44,948,371	39.17	$1.15	343,129,200	$0.131	$0.013
2006	$35,889,264	25.49	$1.41	223,292,400	$0.161	$0.016
2007	$36,399,342	35.00	$1.04	306,600,000	$0.119	$0.014
2008	$49,797,276	32.12	$1.55	281,371,200	$0.177	$0.021
2009	$65,654,056	32.30	$2.03	282,948,000	$0.232	$0.028
2010	$83,572,607	45.65	$1.83	399,894,000	$0.209	$0.025
2011	$98,671,715	46.89	$2.10	410,756,400	$0.240	$0.029
2012	$126,895610	23.50	$3.23	205,860,000	$0.369	
Totals/Averages	$566,675,133	334.69	$1.69	2,933,678,520	$0.193	

[2] "True Up 2011: Tracking Estimate Corrections and True Up of 2002-2010 Savings and Generation", Energy Trust of Oregon, May 4, 2011. http://energytrust.org/library/reports/2011_TrueUpSummaryPaper_Final.pdf



Measurement of Energy Efficiency Work: When ETO puts resources into an energy conservation/efficiency project, ***100% of the estimated energy savings are claimed by ETO for purposes of internal benchmarking, regardless of the total cost of the project.*** This methodology skews the accomplishments of the organization and makes "benchmarking" a meaningless task.

If SB 807 is enacted, the audit should analyze past and present methodologies for calculating the benefits of using ratepayer funds for energy efficiency projects and determining ETO's share of those benefits.

Problems with Specific Energy Efficiency Projects funded with PPC Money

A very large amount of money is provided to ETO each year, and the organization must find ways to spend it. This has led to some expenditures that were either subsidizing highly cost-effective projects that didn't need the money, or highly wasteful projects that should never have been considered. Below are just a few examples of this problem.

- ***I-205 Solar Highway Project.*** The total cost of this solar energy project was $1.28 million. The ETO helped fund the project in the amount of $175,000. It is estimated to produce 112,000 kWh annually. Across an expected twenty year lifespan, the cost per kWh is $0.57, roughly 7.8 times more than electricity that could have been purchased

directly from the utility. The electricity actually produced from these panels only accounts for 0.22% of the Oregon Department of Transportation's electricity usage[3] at that facility.

- ***Blue Heron Paper Company.*** After receiving a free audit from ETO, Blue Heron found many options to make their factory more energy efficient. The efficiency upgrades cost $13.75 million, allowing for savings of $5.3 million each year. To offset their costs, Blue Heron received a $5.4 million incentive from ETO, $3.85 million Business Energy Tax Credit (BETC), $500,000 from the Climate Trust, and a $4.5 million dollar loan from Oregon Department of Energy. With all the incentives they could have expected payback in a little over one year.

  In 2011, due to changing markets, Blue Heron Paper Company went bankrupt, taking all of these "public investments" with it.

- ***Oregon State's Dixon Recreation Center Elliptical Project.*** The Oregon State Dixon Recreation Center project subsidized 22 elliptical machines with devices that can capture energy while the equipment is in use. Total costs of the project were $15,000, of which the ETO funded $5,812.50. OSU officials expect "the project will not come close to paying for itself within the assigned 5 year system life". Each elliptical is "expected to produce 100 watts continuously under normal use". The average electricity used by a TV is about 200 watts.[4] Not including the electricity used to light the room, by watching TV and working out, students are consuming twice as much energy as they could produce.

- ***Parr Lumber high-efficiency lighting.*** In 2007, with subsidies of $20,047 from ETO, Parr Lumber installed high-efficiency lighting in 11 stores. The new lights saved the company $12,200 in annual electricity costs.[5] Since the payback for this project was only 1.6 years, clearly the company could have done the work without ETO funds, making this a poor use of ratepayer money.

PUC Assertion #2: "The Trust has met every target we've set for them in the past 10 years."

Response: A careful review of the record indicates that the targets set by PUC have sometimes been changed in ways that artificially inflate accomplishments. For example, the ETO is authorized by law to spend PPC money to subsidize the "above-market" costs of renewable energy projects, and the PUC sets annual goals. In its 2012 Quarter Four report to the Oregon PUC, the ETO claimed to have generated 110 average megawatts (aMW) of new renewable

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[3] Innovative Partnerships Program. Available at: http://www.oregon.gov/ODOT/HWY/OIPP/inn_solarhighway.shtml.

[4] Tesla Delays Model X One Year. Available at: http://reviews.cnet.com/4520-6475_7-6400401-2.html?tag=nav.

[5] Energy Trust of Oregon, 2007 Annual Report, (2).

energy since its inception[6]. According to the Trust, this represents 88% of the 2014 generation goal of 124 average megawatts.

While this appears reasonable, it is highly deceptive: the ETO and PUC have drastically reduced the goals since 2002.

When the ETO was created, the organization set goals for renewable energy production. The 2002 annual report to the OPUC stated:

> *"The Energy Trust established a goal to provide 10% of Oregon's electric energy from renewable resources by 2012. This represents an eight-fold increase in the amount of renewable energy available to Oregonians.* ***At least 450 average megawatts of new clean power*** *is needed to meet the goal."*[7]

Two years later, the 2002 goals remained consistent. The 2004 annual report stated, *"To date, cumulative generation secured totals 44.0 aMW, or 9.0% of the 2012 goal of 450 aMW."*[8]

However, in 2004, an ETO internal analysis concluded that the 450 aMW goal of renewable energy generation by 2012 was not possible. In response, ETO managers reevaluated their energy production program and ended up making some strategic changes. The ETO chose to reduce its goals from 450 aMW to 150 aMW because, as of June 2005, cumulative results were just 3% of the 2012 goal, and *"Staff analyses in 2004 indicated that 42% (190 aMW) of the goal was possible, given expected energy policies."*

Corresponding with these finding were OPUC's revised benchmarks for the ETO, which were below the level that the ETO had set for itself. The OPUC benchmark for 2005 *"expects the Trust to deliver at least 15 aMW of new renewable resource development annually, computed on a three-year rolling average, from a variety of renewable resources."*

The new benchmarks supplied by the OPUC provided the ETO with an alternative to its unrealistic original goal. The original 450 aMW goal reflected the ETO's assumption that they could take credit for projects which they had nothing directly to do with, through what they call "market transformation." The revised goals were established on the principle of *direct acquisition*, meaning that the ETO would only be able to take credit for those projects which would not have happened without their involvement.

For this reason the 26.7 aMW PGE Klondike wind project near Wasco, which the ETO originally claimed credit for, was not included in the 2005 annual report, partially explaining the reduction from 44.0 aMW to 14.85 aMW in 2005 for new renewable power generation.

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[6] Energy Trust of Oregon, Quarter Four 2012 Report to the Oregon PUC, February 28, 2013, p. 5.
[7] Energy Trust of Oregon, 2002 Annual Report. Available at: THIS LINK NEEDS TO BE FIXED http://energytrust.org/library/reports/2002_Annual_Report.pdf?link_programs_reports_lin1Page=8.
[8] Energy Trust 2004 Annual Report. Available at: http://energytrust.org/library/reports/2004_Annual_Report0.pdf.

In December 2009, ETO published a new strategic plan for the 2010-1014 period. This plan reflected statutory changes made in SB 838, including changes limiting ETO to renewable energy projects of 20 aMW or less. For internal planning purposes, ETO established a new goal of achieving an additional 23 average megawatts of renewable energy between 2010 and 2014. The plan set a target of 124 aMW of renewable power cumulatively acquired for the 12-year period of 2002-2014.

Thus, ETO's 12-year goal of 124 aMW ***is actually less than the former 10-year goal of 150 aMW, and significantly less than their original 10-year goal of 450 aMW goal.***

Inflated Claims for Renewable Energy Generation

In addition to steadily diminishing goals, ETO claims of actual renewable energy generation are overstated. In the past, ETO has funded two types of energy production projects: utility scale and small scale. The ETO has provided funding for three utility scale wind projects which account for the overwhelming majority of the 110 aMW claimed to date. The three projects include:

- Biglow Canyon wind farm (46 aMW)
- Goodnoe Hills wind farm (30.47aMW)
- Combine Hills wind farm (14.25 aMW)

The ETO credits itself with all of the energy produced by these projects, even though it provided only a fraction of the total investment capital. The ETO claims these projects would not have gone forward without the additional funding provided by the PPC, but this assertion is dubious at best. All of these projects received other federal and state subsidies, making them attractive for investors.

Moreover, Oregon electric utilities are mandated to procure 25% of their power from certain types of "renewable resources" by 2025, which has become a *de facto* wind mandate (large hydro projects on the Columbia River are not included in the statutory definition of "renewable resources"). California has an even more aggressive RPS mandate, which has placed additional incentives for Oregon wind producers in the form of a guaranteed market. Thus these projects would have been developed anyway in order for utilities in the two states to comply with the RPS.

ETO's first utility-scale wind project was Combine Hills Turbine Ranch near Milton-Freewater. The project was planned as a 41-megawatt (14.25 aMW) facility in the first phase, with the possibility of an additional 63 megawatts. Phase I was to be operational by the end of 2003. It was developed by Eurus Oregon Wind Power with the power purchased by PacifiCorp.

The ETO Board of Directors approved up to $4.15 million in funding for Combine Hills on December 12, 2002[9], and spent $3.9 million in 2003[10]. In its 2003 annual report to the OPUC,

[9] Energy Trust 2002 Annual Report to the Oregon Public Utility Commission, Appendix 3, (2).
[10] Energy Trust 2003 Annual Report to the Oregon Public Utility Commission, (5).

the ETO claimed a total of 14.296 aMW in renewable power production for 2002.[11] The Combine Hills project accounted for 99.8% of that total, even though ETO's expenditure was a small percent of the capital investment. The actual cost of the project is confidential, but according to a Pacific Power spokesman[12], the project would have been constructed with or without ETO support.

Thus, while ETO might plausibly claim credit for a portion of the power output approximately equal to the percentage of ETO funding, claiming 100% is not credible.

ETO does the same with the Biglow Canyon wind project. Phase 1 of that project involved the construction of 76 wind turbines with an installed capacity of 125 MW, at a total cost of about $260 million. ETO contributed $6 million to the project, or 2.3% of the total, but took credit for 100% of the 46 aMW[13] produced by the project.

For calendar year 2007, ETO claimed to have produced a total of 47 aMW of renewable power, which was far above the 17 aMW claimed during the preceding four years combined. However, if ETO had simply taken credit for a share of the output proportionate to its expenditure, the total renewable power generation for that year would have equaled 2.06 aMW, not 47.

Finally, ETO helped finance the Goodnoe Hills wind project with $4.5 million.[14] Goodnoe Hills is a 94 MW project with 47 turbines located near Goldendale, WA. Pacific Power purchases the annual power output of about 30 aMW. Although ETO's share of the total capital investment was minimal (once again the percentage is not known since total costs are confidential), ETO claimed all 30 aMW for purposes of moving towards its renewable energy goal.

When ETO subsequently filed its 2008 annual report with the OPUC, it stated that total renewable power generation had increased that year by 33 aMW, making it the second year in a row where power production had taken another big leap. But ETO's true progress was much smaller.

In its 2012 Quarter Four report to the OPUC, ETO claims 110 aMW of cumulative renewable generation, or 88% of the new 12-year goal. However, a ***proportionately accurate analysis would indicate that actual ETO-induced generation has only totaled about 18.4 aMW, which is 4% of the original 450 aMW goal***, or 15% of the revised 124aMW goal after ten years. This has been accomplished at a cumulative cost of $100.2 million.

Rising Costs

Of equal concern is the fact that ETO renewable energy projects are becoming progressively more expensive, as seen in the charts below.

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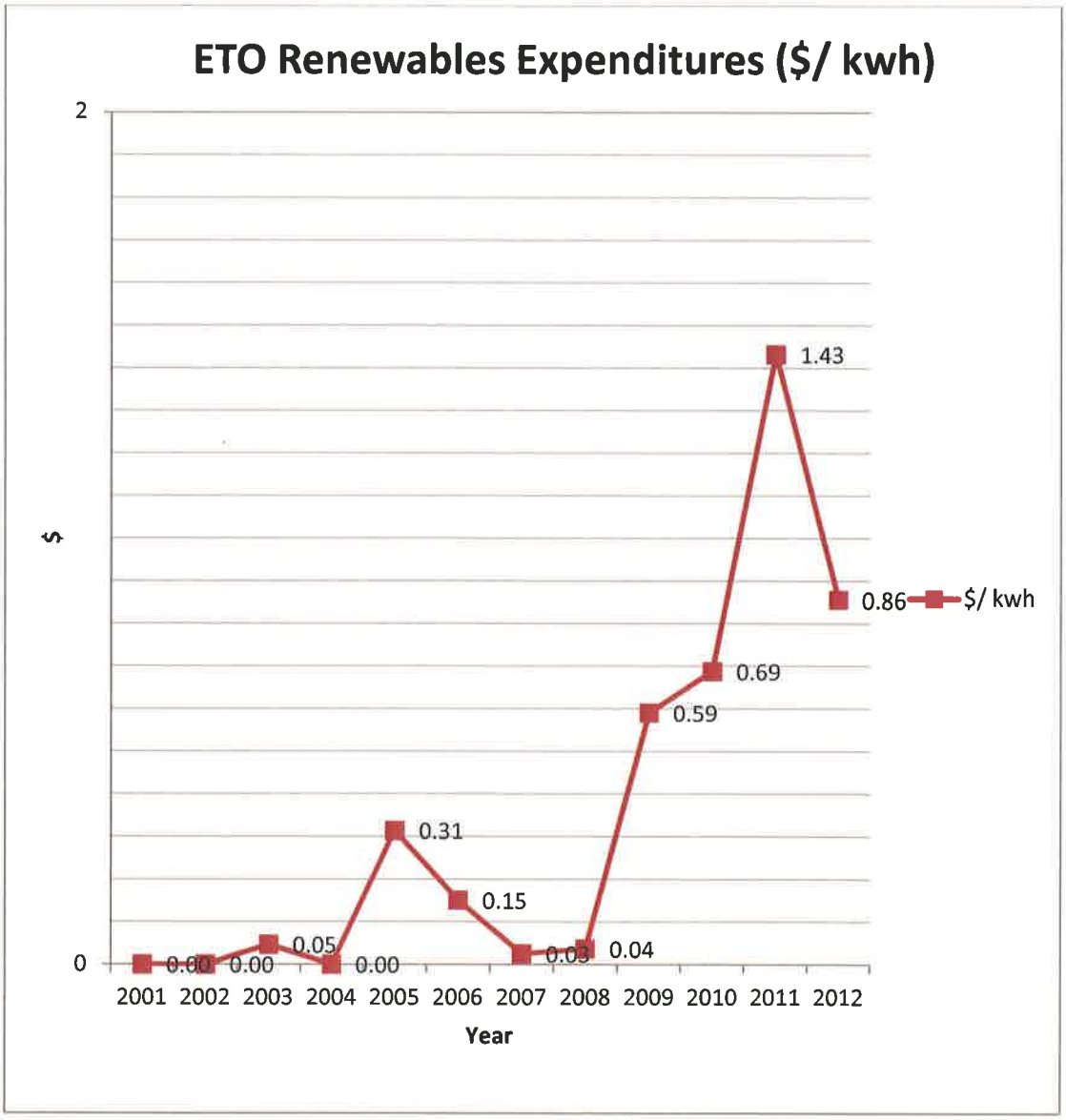
[11] Energy Trust of Oregon Annual Report to the Oregon Public Utilities Commission, (5).
[12] Scott Bolton, Pacific Power, personal communication with John A. Charles, Jr., December 2012.
[13] Energy Trust Board Decision for Biglow Canyon Wind Project.
[14] Energy Trust Board Meeting Minutes. 2007.


ETO Renewables Expenditures ($/ kwh)
2
0
$
0.00
0.00
0.05
0.00
0.31
0.15
0.03
0.04
0.59
0.69
1.43
0.86
$/ kwh
2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012
Year

ETO Renewable Energy Expenditures by Year

Year	Renewables Expenditures	aMW generated	kwh generated	$/kwh
2001	20,774	0	0	
2002	211,976	0	0	
2003	5,791,939	14.3	125,268,000	0.04623638
2004	3,050,348	0	0	
2005	2,747,380	1	8,760,000	0.31362785
2006	2,637,273	2	17,520,000	0.15052928
2007	10,383,493	47	411,720,000	0.02521979
2008	10,547,242	33.3	289,080,000	0.03648555
2009	13,651,818	2.64	23,126,400	0.59031315
2010	19,814,165	3.29	28,820,400	0.68750486
2011	18,560,497	1.48	12,964,800	1.43160689
2012	12,744,714	1.7	14,892,000	0 .85581

These numbers actually understate the magnitude of the problem because they only reflect ratepayer funds used to subsidize the capital costs of certain renewable energy projects. Since most of the output from these projects is intermittent, it needs to be backed up by other sources that can be quickly ramped up or down. The financial burden of integrating unreliable renewable energy projects into the regional power grid is substantial.

PUC Assertion #3: "Every five years the Energy Trust must undergo a detailed management audit."

Response: This may be true, but that doesn't mean that the OPUC is requiring management improvements at ETO based on those audits. Some conclusions of the audits suggest that improvements are warranted.

For example, in 2007 the ETO paid Research Into Action Inc. for an assessment of the program delivery methods used for energy efficiency and renewable energy generation programs.[15] Research Into Action conducted interviews with 47 people from January through March 2007, reviewed evaluations of programs conducted between 2003 and 2007, and analyzed

[15] Peters, J. S. (2007). *Final Report: Assessment of Energy Trust of Oregon's Contracting and Delivery Models.* Research Into Action Inc. Available at http://www.energytrust.org/library/reports/070619_AssesmentofDeliveryModels.pdf

information on program management and delivery costs incurred by Energy Trust. The main reason for this audit was to assess the strengths and weaknesses of the Program Management Contractor (PMC) model used by Energy Trust to deliver its energy efficiency programs.

The results of the study suggest problems with the PMC model. Summing all of the costs for the ETO in 2006, Research Into Action found 57% of total costs went towards incentives, 28% for program management (PMC) and 15% for internal program management. That is a combined 43% of total costs that goes to management, which is classified under administration costs.[16] This is well above the 11% cap imposed by the PUC. It appears that ETO's annual calculations of administration costs simply add up only those actually incurred by the ETO, while ignoring the costs of outsourcing management to the PMCs.

Other Issues of Concern with the Public Purpose Charge

Apart from the relationship ETO has with OPUC, there are other fundamental problems that the legislature should consider, which could be addressed with amendments to SB 807. The first is the ***change in sunset date for the PPC.***

The language of SB 1149 stated that "*..the electric company shall collect a public purpose charge from all of the retail electricity consumers located within its service area for a period of 10 years.*"[17] Because the charge would begin for PGE and PPL in 2002, it was to sunset in 2012.

Many diverse political interests negotiated the bill and all participants were clear that the amount of time needed to subsidize "public purposes" would be ten years.[18] Ron Eachus, the chair of the Public Utility Commission and a participant in the work group for the bill, spoke for the group consensus when he stated:

> *"10 years provides both an assurance of funding and provides some stability and at the same time it provides an opportunity for a competitive market to develop. Then you can decide that the public purpose charge is not needed."*

Notwithstanding this agreement, during the 2007 legislative session the sunset date for the PPC was extended to 2026 as part of SB 838. No public explanation was ever provided for this extension, but it certainly implies a credibility problem for the proponents who were so certain in 1999 that the PPC was only needed for 10 years. If their forecast was actually off by 14 years, the legislature should be skeptical of other claims made by them on this subject.

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[16] Peters, J. S. (2007). *Final Report: Assessment of Energy Trust of Oregon's Contracting and Delivery Models.* Research Into Action Inc. Page 13. Available at http://www.energytrust.org/library/reports/070619_AssesmentofDeliveryModels.pdf

[17] Senate Bill 1149, Section 3. Available at: http://www.leg.state.or.us/99reg/measures/sb1100.dir/sb1149.en.html.

[18] Senate Bill 1149 hearing minutes.

The PPC Plus the SB 838 Increment is Placing a Large Financial Burden on Ratepayers

The PPC originally generated a modest amount of money. However, with rising rates and a growing consumer base, the 3% premium has compounded. In addition, the SB 838 "increment" is negotiated each year between ETO and PUC, and there is no statutory cap. The combination of these two surcharges means that many ratepayers of IOUs are paying a surcharge of 6% or more.

	Energy Trust of Oregon Revenue 2001 – 2014					
Year	Public Purpose Funding	Interest Income	Other Income	SB 838 Incremental Funding	Total Revenue	% Change in Total Revenue
2001	395,216	37	3,145	.	**398,398**	
2002	19,160,688	31,650	106,189	.	**19,298,527**	4,744.0
2003	47,092,779	262,325	119,030	.	**47,474,134**	146.0
2004	50,642,826	491,730	.	.	**51,134,556**	7.7
2005	52,602,527	1,250,909	.	.	**53,853,436**	5.3
2006	58,101,063	2,270,829	53,598	.	**60,425,490**	12.2
2007	63,328,071	3,197,780	550,000	.	**67,075,851**	11.0
2008	65,433,014	1,766,864	292,714	12,137,218	**79,629,810**	18.7
2009	69,486,368	588,192	6,264	21,810,741	**91,891,565**	15.4
2010	83,905,492	-	-	41,023,323	**124,928,815**	36.0
2011	82,263,013	195,329	5,185	52,890,309	**135,353,836**	8.3
2012	79,984,985	140,914	90,380	66,078,150	**146,294,429**	8.1
2013 Projected	84,781,566	120,000	-	84,781,566	**165,315,351**	13.0
2014 Projected	84,024,178	120,000	-	87,995,361	**172,139,539**	4.1

None of this money is reviewed by the legislature as part of the normal Ways and Means process. It may be time to revise the mechanics of how these funds are appropriated***, or eliminate the PPC altogether*** now that the SB 838 increment has grown so rapidly.

SB 838 makes ETO's work on renewable energy redundant: The passage of the RPS mandate in 2007 requires utilities to procure large amounts of power from designated "renewable energy" sources. However, ETO is subsidizing the above-market costs of renewable energy projects, because that was one of the legislative tasks specified in its enabling statute (SB 1149).

If utilities have to purchase green energy, subsidizing individual renewable energy projects through ETO is no longer necessary. One thing the legislature could do right now to save ratepayers money would be to eliminate renewable energy development as part of ETO's mission. SB 807 should be amended to accomplish this task.