Testimony of John A. Charles, Jr.
President and CEO
Regarding HB 2136

February 5, 2017

The basic problem with HB 2136 is that it mandates certain levels of electrical output from politically-favored sources without regard to cost or feasibility.

The Energy Trust of Oregon, a state-sponsored enterprise that receives about 74% of all funds generated by the Public Purpose tax on ratepayers, has an entire program dedicated to encouraging and subsidizing small-scale renewable projects. Despite great enthusiasm and technical expertise, the results of have been modest, as shown below.

Energy Trust of Oregon
Expenditures for Small-Scale Renewables and Total Energy Production
2012-2016

	2012	2013	2014	2015	2016 (thru 9/30)	Totals
Solar Electric	3.29 aMW	0.72	1.15	1.19	1.98	**8.33 aMW**
Biopower	1.32 aMW	2.13	n/a	n/a	n/a	**3.45 aMW**
Other	0.44 aMW	0.02	1.24	1.99	0.00	**3.69 aMW**
Total	5.05 aMW	2.87	2.39	3.90	1.98	**15.47 aMW**
ETO expense	$2.26 million	$8.2 million	$13.5 million	$17.9 million	$4.00 million	**$66.2 million**

Source: ETO Annual Reports to the Oregon PUC

Many of the projects examined by ETO never even get built. Those projects are shown in the attached pages, excerpted from the most recent biennial report to the Legislative Assembly on public purpose charge expenditures.

The Energy Trust has had the most success with small-scale solar electric projects. Unfortunately, as an intermittent source, this does almost nothing to benefit the grid. Virtually every megawatt of power generated by intermittent sources must be backed up at all times by Columbia River hydro projects or natural gas-fired turbines. This is both costly and environmentally harmful.

Generating reliable, 24/7 power from small-scale sources is extremely challenging, and mandating arbitrary levels of production will not make the job any easier.

Appendix A – Energy Trust Feasibility Studies and Projects

Title	Status	Year	Project Type	County	Utility Service Territory	Cost to Energy Trust	Energy Trust Share
Biopower #1	Initiated	2015	Feasibility Analysis	Clackamas	PGE	$ 11,000.00	50%
Biopower #2	Completed	2015	Feasibility Analysis	Columbia	PGE	$ 40,000.00	47%
Biopower #3	Initiated	2015	Feasibility Analysis	Clackamas	PGE	$ 20,527.00	50%
Biopower #4	Completed	2015	Feasibility Analysis	Multnomah	PAC	$ 23,264.50	50%
Biopower #5	Completed	2016	Feasibility Analysis	Multnomah	PAC	$ 884.00	50%
Biopower #6	Completed	2015	Feasibility Analysis	Deschutes	PAC	$ 19,950.00	50%
Biopower #7	Initiated	2016	Feasibility Analysis	Hood River	PAC	$ 10,000.00	25%
Biopower #8	Initiated	2016	Feasibility Analysis	Grant	PGE	$ 80,500.00	50%
Geothermal #1	Initiated	2015	Feasibility Analysis	Klamath	PAC	$112,500.00	50%
Geothermal #2	Completed	2015	Feasibility Analysis	Klamath	PAC	$ 585.00	50%
Hydro #1	Completed	2015	Feasibility Analysis	Jefferson	PAC	$139,089.00	17%
Hydro #1	Initiated	2015	Feasibility Analysis	Jefferson	PAC	$ 37,770.50	100%
Hydro #2	Completed	2015	Feasibility Analysis	Umatilla	PAC	$ 1,800.00	50%
Hydro #2	Completed	2016	Feasibility Analysis	Umatilla	PAC	$ 8,990.00	100%
Hydro #2	Initiated	2015	Feasibility Analysis	Umatilla	PAC	$ 10,000.00	50%
Hydro #2	Initiated	2015	Feasibility Analysis	Umatilla	PAC	$ 8,000.00	50%
Hydro #2	Initiated	2016	Feasibility Analysis	Umatilla	PAC	$ 7,500.00	50%
Hydro #3	Completed	2015	Feasibility Analysis	Wallowa	PAC	$ 4,350.00	100%
Hydro #3	Completed	2015	Feasibility Analysis	Wallowa	PAC	$ 1,800.00	100%
Hydro #3	Completed	2015	Feasibility Analysis	Wallowa	PAC	$ 675.00	100%
Hydro #3	Completed	2015	Feasibility Analysis	Wallowa	PAC	$ 505.00	100%
Hydro #3	Completed	2015	Feasibility Analysis	Wallowa	PAC	$ 600.00	100%
Hydro #3	Completed	2015	Feasibility Analysis	Wallowa	PAC	$ 487.50	100%
Hydro #3	Completed	2016	Feasibility Analysis	Wallowa	PAC	$ 487.50	100%
Hydro #4	Completed	2015	Feasibility Analysis	Washington	PGE	$ 8,500.00	50%
Hydro #4	Completed	2016	Feasibility Analysis	Washington	PGE	$ 6,024.87	50%
Hydro #5	Completed	2015	Feasibility Analysis	Wallowa	PAC	$ 412.50	100%
Hydro #5	Completed	2015	Feasibility Analysis	Wallowa	PAC	$ 1,080.00	100%
Hydro #5	Completed	2015	Feasibility Analysis	Wallowa	PAC	$ 1,237.50	100%
Hydro #5	Completed	2015	Feasibility Analysis	Wallowa	PAC	$ 1,275.00	100%
Hydro #5	Completed	2015	Feasibility Analysis	Wallowa	PAC	$ 525.00	100%
Hydro #5	Completed	2015	Feasibility Analysis	Wallowa	PAC	$ 450.00	100%
Hydro #5	Completed	2016	Feasibility Analysis	Wallowa	PAC	$ 300.00	100%
Hydro #5	Completed	2016	Feasibility Analysis	Wallowa	PAC	$ 300.00	100%
Hydro #5	Completed	2016	Feasibility Analysis	Wallowa	PAC	$ 1,162.50	100%
Hydro #6	Completed	2015	Feasibility Analysis	Clackamas	PAC	$ 21,030.60	50%
Hydro #6	Completed	2015	Feasibility Analysis	Clackamas	PAC	$ 8,993.92	50%
Hydro #6	Completed	2015	Feasibility Analysis	Clackamas	PAC	$ 9,975.48	27%
Hydro #6	Completed	2016	Feasibility Analysis	Clackamas	PAC	$ 25,000.00	50%
Hydro #6	Initiated	2016	Feasibility Analysis	Clackamas	PAC	$ 40,024.26	22%
Hydro #6	Initiated	2016	Feasibility Analysis	Clackamas	PAC	$ 48,145.17	26%
Hydro #7	Completed	2016	Feasibility Analysis	Crook	PAC	$ 12,000.00	50%
Hydro #7	Completed	2016	Feasibility Analysis	Crook	PAC	$ 4,328.56	50%
Hydro #8	Completed	2015	Feasibility Analysis	Deschutes	PAC	$ 11,197.00	50%
Hydro #8	Initiated	2015	Feasibility Analysis	Deschutes	PAC	$ 33,000.00	50%
Hydro #9	Completed	2015	Feasibility Analysis	Wallowa	PAC	$ 375.00	100%
Hydro #9	Initiated	2015	Feasibility Analysis	Wallowa	PAC	$ 13,625.50	63%
Hydro #9	Initiated	2015	Feasibility Analysis	Wallowa	PAC	$ 2,662.00	100%
Hydro #10	Completed	2015	Feasibility Analysis	Wallowa	PAC	$ 450.00	100%
Hydro #10	Completed	2015	Feasibility Analysis	Wallowa	PAC	$ 675.00	100%

Title	Status	Year	Project Type	County	Utility Service Territory	Cost to Energy Trust	Energy Trust Share
Hydro #10	Completed	2016	Feasibility Analysis	Wallowa	PAC	$ 2,362.50	100%
Hydro #10	Completed	2016	Feasibility Analysis	Wallowa	PAC	$ 525.00	100%
Hydro #10	Completed	2016	Feasibility Analysis	Wallowa	PAC	$ 2,062.50	100%
Hydro #10	Completed	2016	Feasibility Analysis	Wallowa	PAC	$ 525.00	100%
Hydro #10	Completed	2016	Feasibility Analysis	Wallowa	PAC	$ 250.00	100%
Hydro #10	Initiated	2015	Feasibility Analysis	Wallowa	PAC	$ 8,200.00	52%
Hydro #10	Initiated	2015	Feasibility Analysis	Wallowa	PAC	$ 4,162.50	100%
Hydro #11	Completed	2015	Feasibility Analysis	Hood River	PAC	$ 2,727.50	100%
Hydro #11	Completed	2015	Feasibility Analysis	Hood River	PAC	$ 5,655.00	100%
Hydro #11	Completed	2015	Feasibility Analysis	Hood River	PAC	$ 17,755.17	100%
Hydro #11	Completed	2015	Feasibility Analysis	Hood River	PAC	$ 4,320.00	100%
Hydro #11	Completed	2016	Feasibility Analysis	Hood River	PAC	$ 3,880.00	100%
Hydro #11	Completed	2016	Feasibility Analysis	Hood River	PAC	$ 6,293.00	100%
Hydro #11	Completed	2016	Feasibility Analysis	Hood River	PAC	$ 13,353.45	100%
Hydro #11	Initiated	2015	Feasibility Analysis	Hood River	PAC	$ 574.81	100%
Hydro #12	Completed	2015	Feasibility Analysis	Wallowa	PAC	$ 1,650.00	100%
Hydro #12	Completed	2015	Feasibility Analysis	Wallowa	PAC	$ 750.00	100%
Hydro #12	Completed	2015	Feasibility Analysis	Wallowa	PAC	$ 1,275.00	100%
Hydro #12	Completed	2015	Feasibility Analysis	Wallowa	PAC	$ 975.00	100%
Hydro #12	Completed	2015	Feasibility Analysis	Wallowa	PAC	$ 1,950.00	100%
Hydro #12	Completed	2015	Feasibility Analysis	Wallowa	PAC	$ 1,500.00	100%
Hydro #12	Completed	2015	Feasibility Analysis	Wallowa	PAC	$ 1,125.00	100%
Hydro #12	Completed	2016	Feasibility Analysis	Wallowa	PAC	$ 2,887.50	100%
Hydro #12	Completed	2016	Feasibility Analysis	Wallowa	PAC	$ 2,700.00	100%
Hydro #12	Completed	2016	Feasibility Analysis	Wallowa	PAC	$ 1,050.00	100%
Hydro #12	Completed	2016	Feasibility Analysis	Wallowa	PAC	$ 450.00	100%
Hydro #12	Completed	2016	Feasibility Analysis	Wallowa	PAC	$ 450.00	100%
Hydro #12	Initiated	2016	Feasibility Analysis	Wallowa	PAC	$ 21,725.50	90%
Hydro #12	Initiated	2016	Feasibility Analysis	Wallowa	PAC	$ 1,825.00	100%
Hydro #13	Completed	2015	Feasibility Analysis	Umatilla	PAC	$ 400.00	100%
Hydro #13	Completed	2015	Feasibility Analysis	Umatilla	PAC	$ 5,255.00	100%
Hydro #13	Completed	2016	Feasibility Analysis	Umatilla	PAC	$ 8,617.56	100%
Hydro #13	Initiated	2015	Feasibility Analysis	Umatilla	PAC	$ 1,729.50	100%
Hydro #13	Initiated	2015	Feasibility Analysis	Umatilla	PAC	$ 85,293.00	100%
Hydro #14	Completed	2015	Feasibility Analysis	Wallowa	PAC	$ 4,064.61	100%
Hydro #14	Completed	2015	Feasibility Analysis	Wallowa	PAC	$ 800.00	100%
Hydro #14	Completed	2016	Feasibility Analysis	Wallowa	PAC	$ 4,709.17	100%
Hydro #14	Initiated	2015	Feasibility Analysis	Wallowa	PAC	$ 52,036.98	100%
Hydro #15	Completed	2015	Feasibility Analysis	Wallowa	PAC	$ 500.00	100%
Hydro #15	Completed	2015	Feasibility Analysis	Wallowa	PAC	$ 6,546.81	100%
Hydro #15	Completed	2015	Feasibility Analysis	Wallowa	PAC	$ 1,720.00	100%
Hydro #15	Completed	2016	Feasibility Analysis	Wallowa	PAC	$ 2,280.00	100%
Hydro #15	Completed	2016	Feasibility Analysis	Wallowa	PAC	$ 440.00	100%
Hydro #15	Completed	2016	Feasibility Analysis	Wallowa	PAC	$ 774.00	100%
Hydro #15	Completed	2016	Feasibility Analysis	Wallowa	PAC	$ 4,161.35	100%
Hydro #15	Initiated	2015	Feasibility Analysis	Wallowa	PAC	$ 28,120.74	100%
Hydro #16	Completed	2016	Feasibility Analysis	Deschutes	PAC	$ 16,200.04	100%
Hydro #16	Completed	2016	Feasibility Analysis	Deschutes	PAC	$ 6,967.00	100%
Hydro #16	Completed	2016	Feasibility Analysis	Deschutes	PAC	$ 20,298.46	100%
Hydro #16	Initiated	2015	Feasibility Analysis	Deschutes	PAC	$ 36,653.65	100%

Title	Status	Year	Project Type	County	Utility Service Territory	Cost to Energy Trust	Energy Trust Share
Hydro #17	Completed	2016	Feasibility Analysis	Deschutes	PAC	$ 16,565.99	100%
Hydro #17	Completed	2016	Feasibility Analysis	Deschutes	PAC	$ 6,340.50	100%
Hydro #17	Completed	2016	Feasibility Analysis	Deschutes	PAC	$ 12,756.94	100%
Hydro #17	Initiated	2015	Feasibility Analysis	Deschutes	PAC	$ 50,871.67	100%
Hydro #18	Completed	2016	Feasibility Analysis	Crook	PAC	$ 19,427.50	100%
Hydro #18	Completed	2016	Feasibility Analysis	Crook	PAC	$ 6,983.00	100%
Hydro #18	Completed	2016	Feasibility Analysis	Crook	PAC	$ 23,098.01	100%
Hydro #19	Completed	2016	Feasibility Analysis	Jefferson	PAC	$ 22,727.24	100%
Hydro #19	Initiated	2015	Feasibility Analysis	Jefferson	PAC	$ 36,530.73	100%
Hydro #20	Completed	2016	Feasibility Analysis	Deschutes	PAC	$ 26,660.48	100%
Hydro #20	Completed	2016	Feasibility Analysis	Deschutes	PAC	$ 8,782.98	100%
Hydro #20	Completed	2016	Feasibility Analysis	Deschutes	PAC	$ 29,368.67	100%
Hydro #21	Completed	2016	Feasibility Analysis	Deschutes	PAC	$ 29,986.07	100%
Hydro #21	Initiated	2015	Feasibility Analysis	Deschutes	PAC	$ 54,569.80	100%
Hydro #21	Initiated	2015	Feasibility Analysis	Deschutes	PAC	$ 65,597.50	100%
Hydro #22	Completed	2016	Feasibility Analysis	Deschutes	PAC	$ 9,626.96	100%
Hydro #22	Completed	2016	Feasibility Analysis	Deschutes	PAC	$ 10,997.50	100%
Hydro #22	Completed	2016	Feasibility Analysis	Deschutes	PAC	$ 24,054.32	100%
Hydro #22	Initiated	2015	Feasibility Analysis	Deschutes	PAC	$ 11,287.98	100%
Hydro #23	Completed	2016	Feasibility Analysis	Crook	PAC	$ 22,664.80	100%
Hydro #23	Initiated	2015	Feasibility Analysis	Crook	PAC	$ 57,744.50	100%
Hydro #24	Initiated	2015	Feasibility Analysis	Wallowa	PAC	$ 13,625.00	62%
Hydro #24	Initiated	2015	Feasibility Analysis	Wallowa	PAC	$ 5,625.00	100%
Hydro #25	Completed	2016	Feasibility Analysis	Wallowa	PAC	$ 1,050.00	100%
Hydro #25	Completed	2016	Feasibility Analysis	Wallowa	PAC	$ 4,837.50	100%
Hydro #25	Completed	2016	Feasibility Analysis	Wallowa	PAC	$ 2,550.00	100%
Hydro #25	Initiated	2016	Feasibility Analysis	Wallowa	PAC	$ 25,882.50	100%
Hydro #26	Completed	2016	Feasibility Analysis	Wallowa	PAC	$ 375.00	100%
Hydro #26	Completed	2016	Feasibility Analysis	Wallowa	PAC	$ 300.00	100%
Hydro #26	Completed	2016	Feasibility Analysis	Wallowa	PAC	$ 675.00	100%
Hydro #26	Initiated	2016	Feasibility Analysis	Wallowa	PAC	$ 33,453.00	100%
Hydro #26	Initiated	2016	Feasibility Analysis	Wallowa	PAC	$ 5,937.50	100%
Hydro #27	Completed	2016	Feasibility Analysis	Hood River	PAC	$ 31,659.50	100%
Hydro #27	Completed	2016	Feasibility Analysis	Hood River	PAC	$ 10,237.50	100%
Hydro #27	Initiated	2016	Feasibility Analysis	Hood River	PAC	$ 28,579.26	100%
Hydro #28	Completed	2016	Feasibility Analysis	Hood River	PAC	$ 26,916.00	100%
Hydro #28	Completed	2016	Feasibility Analysis	Hood River	PAC	$ 10,112.50	100%
Hydro #28	Initiated	2016	Feasibility Analysis	Hood River	PAC	$ 2,563.05	100%
Hydro #29	Initiated	2016	Feasibility Analysis	Klamath	PAC	$ 42,698.00	27%
Hydro #29	Initiated	2016	Feasibility Analysis	Klamath	PGE	$ 37,800.00	50%
Hydro #29	Initiated	2016	Feasibility Analysis	Jackson	PAC	$ 42,150.00	27%
Hydro #29	Initiated	2016	Feasibility Analysis	Jackson	PAC	$ 37,200.00	50%
Hydro #30	Initiated	2016	Feasibility Analysis	Clatsop	PAC	$ 91,750.00	27%
Hydro #30	Initiated	2016	Feasibility Analysis	Clatsop	PAC	$ 81,000.00	50%
Hydro #31	Initiated	2016	Feasibility Analysis	Clatsop	PAC	$105,300.00	26%
Hydro #32	Initiated	2016	Feasibility Analysis	Clatsop	PAC	$ 42,150.00	27%
Hydro #32	Initiated	2016	Feasibility Analysis	Clatsop	PAC	$ 37,200.00	50%
Hydro #33	Initiated	2016	Feasibility Analysis	Linn	PAC	$ 35,706.00	28%
Hydro #33	Initiated	2016	Feasibility Analysis	Linn	PAC	$ 28,894.00	50%
Hydro #34	Initiated	2016	Feasibility Analysis	Lane	PAC	$ 40,215.00	28%

Title	Status	Year	Project Type	County	Utility Service Territory	Cost to Energy Trust	Energy Trust Share
Hydro #34	Initiated	2016	Feasibility Analysis	Lane	PAC	$ 32,500.00	50%
Hydro #35	Initiated	2016	Feasibility Analysis	Wasco	PAC	$ 40,215.00	28%
Hydro #35	Initiated	2016	Feasibility Analysis	Wasco	PAC	$ 32,500.00	50%
Wind #1	Completed	2015	Feasibility Analysis, Resource Assesment	Washington	PGE	$ 417.50	50%
Wind #1	Completed	2015	Feasibility Analysis, Resource Assesment	Washington	PGE	$ 1,555.93	50%
Wind #2	Completed	2015	Feasibility Analysis, Resource Assesment	Morrow	PAC	$ 258.00	50%
Wind #2	Completed	2015	Feasibility Analysis, Resource Assesment	Morrow	PAC	$ 150.00	50%
Wind #2	Completed	2015	Feasibility Analysis, Resource Assesment	Morrow	PAC	$ 950.00	50%
Wind #3	Completed	2015	Feasibility Analysis, Resource Assesment	Sherman	PAC	$ 750.00	50%
Wind #3	Completed	2015	Feasibility Analysis, Resource Assesment	Sherman	PAC	$ 950.00	50%