Carbon Effects of Clean Electricity and Coal Transition Plan (HB 4036)

Attached is the current draft of the carbon effect of the proposed bill, measured against a combined GHG reduction curve for the two utilities that is proportional to the State's overall reduction trajectory, but modified to reflect a baseline date of 2005 (vs. 1990) and a 2050 reduction from that point of 80% (vs. 75% from a 1990 baseline). This modified utility trajectory and target were presented in the 2015 OGWC Biennial Report to the Legislature. Assumptions are detailed in the inset, are derived from ODOE reported and projected data, and are intentionally conservative (e.g., assuming 50/50 renewable and gas CT replacement resource).

- Meeting Oregon's electricity GHG goals: Backing coal out of service to Oregon loads and ramping up to a 50% by 2040 RPS has the effect of bringing carbon emissions from the electricity sector into consistency with Oregon goals by 2030, and at least through 2035 (see Figure One), as we presently account for carbon relative to Oregon's goals.
- Net Reductions from Coal-by-Wire Plants: If the out-of-state coal plants no longer delivering to Oregon loads choose to redispatch, and transmission is available to enable redispatch to other loads within the western grid, it is conceptually possible but unlikely that there could be no net emissions reduction resulting directly from the coal reduction elements of the bill. Certainly the effects of EPA Clean Power Plan regulation will have the greater effect. However, California's experience with utility divestment of out-of-state coal deliveries is that facility closures have occurred in general proportion to such divestment (see LADWP at Navaho; SCE at Four Corners; CA COU's at San Juan; DADWR at Reid Gardner; etc).
- Carbon Effects of Reduced Reliance on New Baseload Gas: The effect of coal withdrawal and RPS ramp-up should largely preclude new additional baseload CCGT capacity added to the PGE and PAC systems serving Oregon loads, thus avoiding the 30 year+ capital commitments to fossil fuels that would imperil Oregon's ability to meet its out-year (2030-2050) emissions goals. Added gas capacity is most likely to be in the form of units devoted to integrating the increased variable renewable resources.
- Carbon Intensity in Western Grid: As a practical matter of generation dispatch within the
 western grid, a greater proportion of renewable resources in PAC and PGE system should
 have the result of lowering carbon intensity throughout the grid. As has been historically true
 with hydro, so wind and solar resources, with their low marginal operating costs, are likely to be
 dispatched first to power pool loads.
- Oregon's Transportation GHG Reduction Goals: Meeting Oregon's transportation sector GHG emissions goals depends on (a) ≥ 50% fleet turnover from ICE (internal combustion engine) to EV (electric vehicle) by 2050, and (b) electrical charging service from utilities also in compliance with the State's 2050 GHG reduction goal. The bill will substantially lower the carbon intensity of electricity fueling the EV fleet.

Angus Duncan, Chair Oregon Global Warming Commission

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2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
7.35	6.79	6.91	7.05	7.18	6.69	6.82	6.94	7.07	7.19	7.12	7.23	7.34	7.45	7.56	7.67
(0.60)	(0.60)	(0.60)	(0.60)	(0.60)	(0.60)	(0.60)	(0.60)	(0.60)	(0.60)	(2.25)	(2.25)	(2.25)	(2.25)	(2.25)	(2.25)
9.94	10.03	10.08	10.14	10.19	10.24	10.04	9.83	9.61	9.39	9.15	9.38	9.62	9.85	10.09	10.25
(0.15)	(0.15)	(0.15)	(0.15)	(0.31)	(0.31)	(0.31)	(0.31)	(0.31)	(0.65)	(6.19)	(6.19)	(6.19)	(6.19)	(6.19)	(6.19)
16.55 17.30	16.06 16.81	16.25 17.00	16.43 17.18	16.46 17.37	16.03 16.94	15.95 16.86	15.86 16.77	15.77 16.68	15.33 16.58	7.83 16.27	8.17 16.61	8.51 16.95	8.86 17.30	9.21 17.65	9.48 17.92
17.245091	16.827028	16.408965	15.990902	15.57284	15. 15477 7	14.736714	14.318651	13.900588	13.482526	13.064463	12.6464	12.228337	11.810274	11.392212	10.974149