



Built Environment GHG Emissions Reduction Options

Comparison of Global Warming Commission Recommendations and State Actions 7/10/2020

Category	GWC Recommendation	Actions Taken by State Agencies	Other Actions Required
Codes and Standards	(1) Establish a life cycle building carbon intensity standard (CSI)	<p>Oregon Department of Energy (ODOE) does not have authority to execute this activity. The Department of Environmental Quality (DEQ) has been working to measure, disclose, and reduce embodied carbon at the material and building scale. Examples include developing carbon disclosure of concrete mixes (e.g., environmental product declarations (EPDs)) and assisting City of Portland with Concrete EPD requirement and carbon limits. Cement is the second most used substance in the world, generating 5-6% of annual global emissions. Alternatives, like fly ash and slag, can significantly reduce the GWP of concrete.</p> <p>DEQ has taken similar actions to reduce embodied carbon on select state projects associated with the directive from EO 17-20 to lower the embodied carbon of building materials in new construction of state buildings.</p>	<p>The wide range of carbon intensities/emissions factors for electricity across the state, depending on utility territory, presents a barrier. This may be done at the local level.</p> <p>A consistent reporting framework for embodied carbon measurement and disclosure creates consistency and comparability of information. A framework will need to be developed.</p>
	(2) Update appliance/plug load standards*	Rulemaking in process by ODOE. The first stakeholder panel for new appliance standards was conducted in early June 2020. More information is available here and here .	
	(3) Set carbon (operational and embodied) code for new construction*	The energy code sets efficiency standards and do not have specific carbon regulations. EO 17-20 and 20-04 put Oregon residential and	<p>Industrial manufacturing and process loads are not regulated by code.</p> <p>Embodied carbon is not currently</p>

		<p>commercial energy codes on an energy efficiency path to 60% reduction of regulated loads in new buildings by 2030. Grey water, solar-readiness and electric charging enabled spaces are addressed in 17-20. See here for more details.</p>	<p>regulated by energy or building code, though embodied emissions from the building sector make up 11% of annual global GHG emissions. Opportunities to incorporate include: Restrict high impact materials within categories like insulation, roofing, concrete, and refrigerants; Require measurement and disclosure of carbon impacts using Whole Building Life Cycle Assessment (WBLCA). Models include the State of Minnesota, Canada Green Building Council’s Zero Carbon Building Standard, and Vancouver, BC.</p> <p>It would be helpful to have a statewide definition of net-zero construction. For example, Energy Trust of Oregon (ETO) net-zero home construction allows natural gas use but not offsets from onsite generation of electricity. See here for more details.</p>
	<p>(4) Adopt existing building retrofit carbon (operational and embodied) code</p>	<p>Some portions of the energy code apply to remodels.</p>	<p>This could be similar to what New York City and most recently Washington State have done to require energy use targets and energy audits in existing buildings for energy performance, not for carbon/emissions performance.</p> <p>Embodied carbon is not currently regulated by energy or building code, though embodied emissions from the building sector make up 11% of annual global GHG emissions. Opportunities to incorporate include: Restrict high impact materials within categories like insulation, roofing, concrete, and refrigerants; Require measurement and disclosure of carbon impacts using Whole Building Life Cycle Assessment (WBLCA). Models include the State of Minnesota, Canada Green Building Council’s Zero Carbon Building Standard, and Vancouver, BC.</p>
	<p>(5) Create an Energy- and Carbon-Efficient Reach Code alternative to the Statewide Code uniformity for large jurisdictions</p>	<p>Work on an Energy Efficiency Reach Code is in progress by the Building Codes Division (BCD).</p>	<p>Embodied carbon is not currently regulated by the Reach Code, though embodied emissions from the building sector make up 11% of annual global GHG emissions. Opportunities to incorporate include: Restrict high impact materials within categories like insulation, roofing, concrete, and refrigerants; Require measurement and disclosure of carbon</p>

			impacts using Whole Building Life Cycle Assessment (WBLCA). Models include the State of Minnesota, Canada Green Building Council’s Zero Carbon Building Standard, and Vancouver, BC.
	(6) Reduce industrial energy-use emissions	ODOE, ETO, and Bonneville Power Administration (BPA) have energy reduction, but not GHG reduction programs. For example, see ODOE’s Large Electric Consumer Public Purpose Program “ self-direct ” for large customers.	Note, ETO and BPA are not regulated by the state.
Policies and Outcomes	(1) Design energy investment policies and incentives for co-benefits**	ETO and Oregon Housing Community Services (OHCS) provide some rebates and subsidies for low-income households, including the Low-Income Weatherization Assistance Program. Portland Clean Energy Fund provides grants to Qualifying Non-profits for projects providing energy and community benefits.	
	(2) Utilities should design and deploy SmartGrid-enabled, neighborhood-located microgrids	Public Utilities Commission (PUC) has been working on these issues through planning dockets (e.g., UM 2005 on smart grids) and comprehensive distribution system planning.	
	(3) Eliminate all coal-by-wire electricity imports into Oregon by NLT 2027	This was legislatively mandated (by SB 1547) and regulated through the PUC for investor-owned utilities.	Consumer-owned utilities could take similar action through their independent local governance board, council or commission.
Ways and Means	(1) Allow regulated utilities to provide, and rate-base, certain additional carbon-reducing products and services to customers, such as electric vehicles.	Public Utilities Commission (PUC) has been working on these issues through their transportation electrification planning dockets: UM 1810 (PacifiCorp), UM 1811 (PGE), and UM 1815 (Idaho Power). This is also being discussed in Pacific Power’s rate case UE 374.	
	(2) Transition natural gas utilities to renewable natural gas (RNG): e.g., biogas, electrolytic hydrogen	In 2018, ODOE conducted a study on the RNG market and availability of RNG.	SB 98 allows large gas utilities to provide up to 30% RNG by 2050. Northwest Natural is piloting RNG projects.

Note: * demarcates measures that are also addressed in Governor’s Executive Orders 17-20 and 20-04.

** indicates measures that link with equity outcomes.