

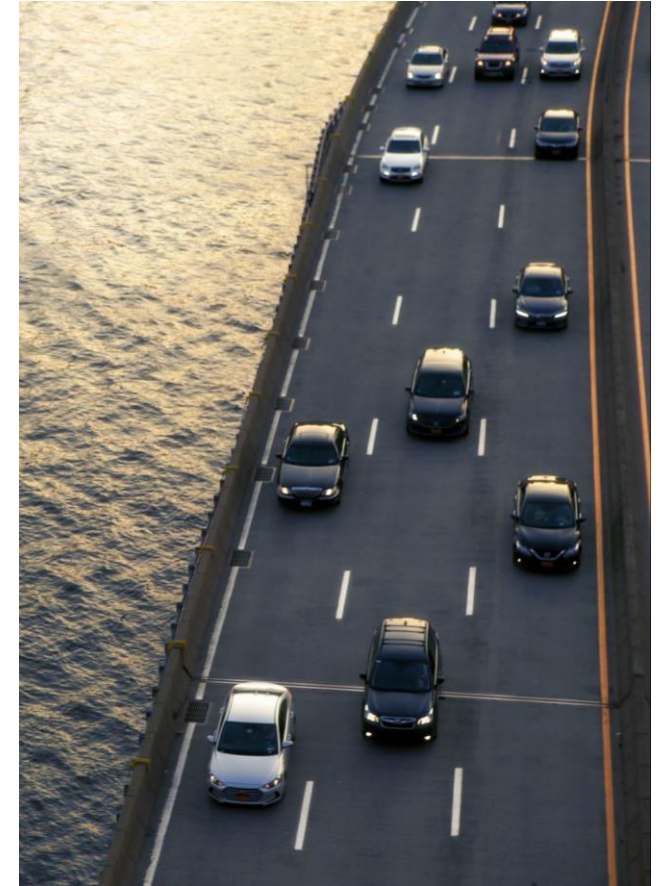
Introduction to Consumption-Based Emissions: Emissions Inventories and a Report to the Legislature on Emission Reduction Opportunities

Oregon Department of Environmental Quality

Dec. 11, 2023
Oregon Global Warming Commission

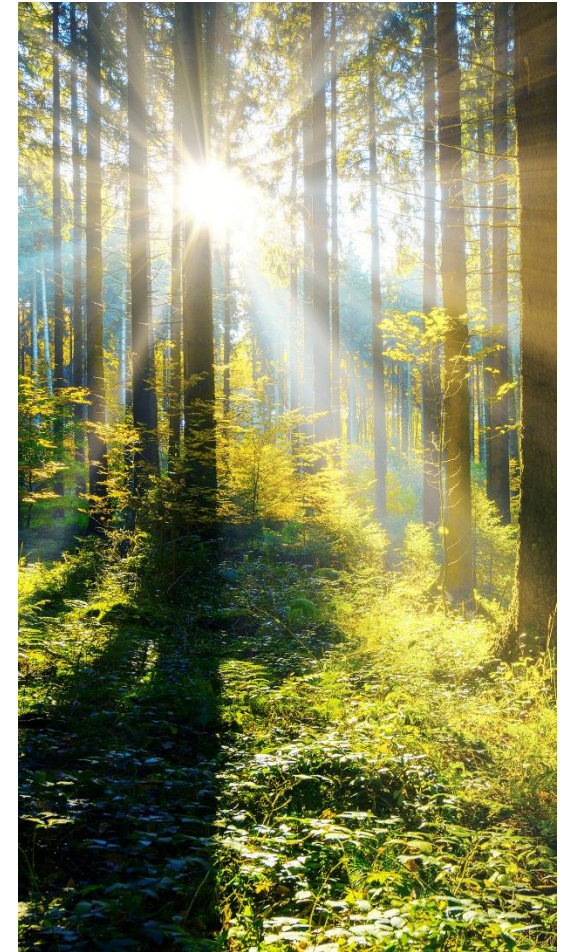
What are consumption-based GHGs?

- GHG emissions resulting from *consumption*
 - “Consumption” is defined as economic “final demand”
 - Purchases by households, governments, and business capital/inventory
 - Purchases include fuels, energy, materials and services “consumed” by the community
 - Consumption = a “root driver” of emissions
 - These emissions can occur anywhere in the world
 - Yet are associated with satisfying Oregon’s consumption

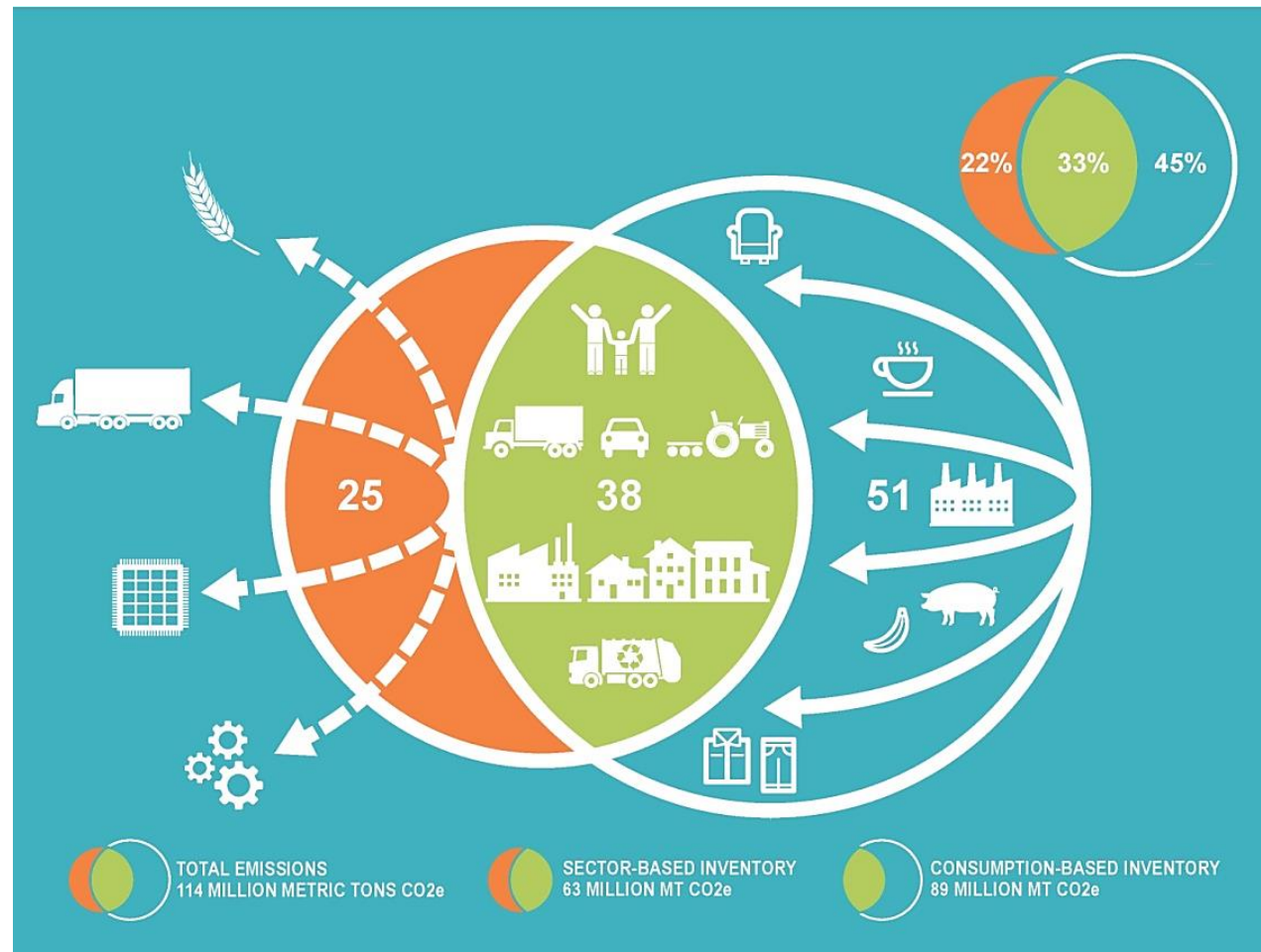


Why should we care?

- Oregon contributes to these emissions
 - Oregon could contribute to reductions of these emissions
- Oregon is impacted by these emissions
 - Climate doesn't stop at Oregon's borders
- Consumption-based inventories uncover additional opportunities to reduce emissions



Comparing Oregon's inventories (2015)



House Bill 3409 (2023)

OPPORTUNITIES TO REDUCE OREGON'S CONSUMPTION-BASED GREENHOUSE GAS EMISSIONS

SECTION 52. (1) The Department of Environmental Quality, **in consultation with the Oregon Climate Action Commission**, shall evaluate opportunities to reduce Oregon's consumption-based greenhouse gas emissions. The department shall present its findings in a report submitted in the manner provided in ORS 192.245, and may include recommendations for legislation, to the interim committees of the Legislative Assembly related to the environment, and the commission, no later than September 15, 2024.

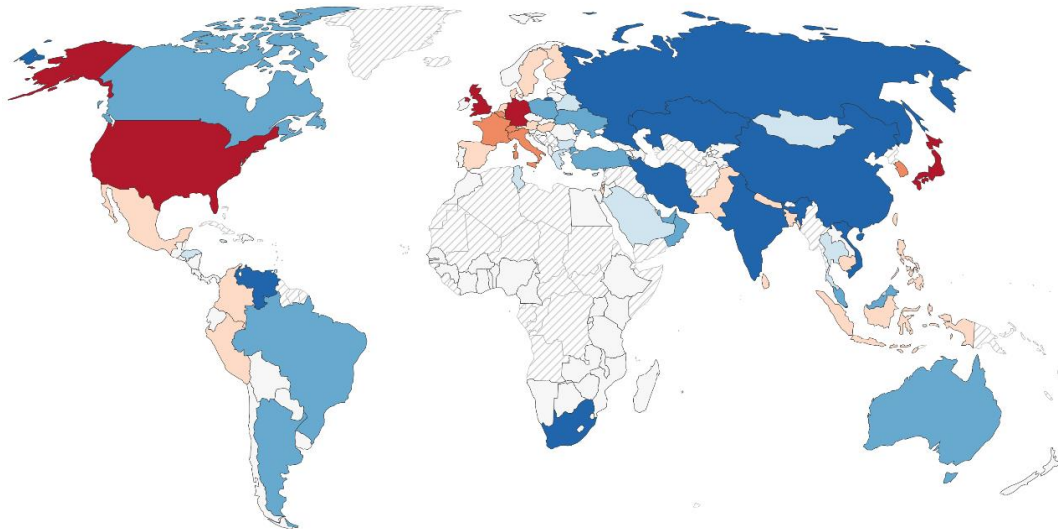
(2) The report under this section must:

- (a) Update Oregon's consumption-based greenhouse gas emissions inventory;
- (b) Identify opportunities to reduce consumption-based greenhouse gas emissions through materials management or other state programs or policies;
- (c) Include recommendations for regularly updating the consumption-based greenhouse gas emissions inventory; and
- (d) Evaluate the effects of consumption-based greenhouse gas emissions reductions, taking into account economic, social and environmental factors.

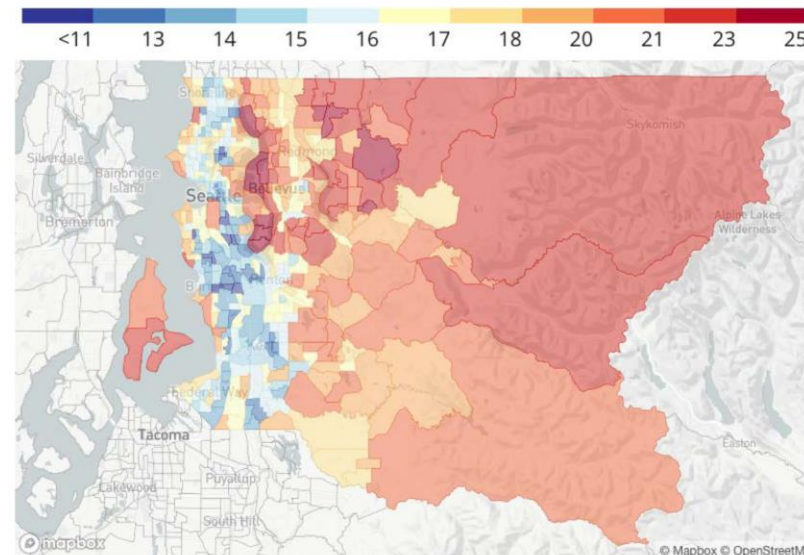
History

- Oregon published the first sub-national consumption-based emissions inventory in the U.S. in 2011 (for 2005)
- Updated inventories for 2010 and 2015

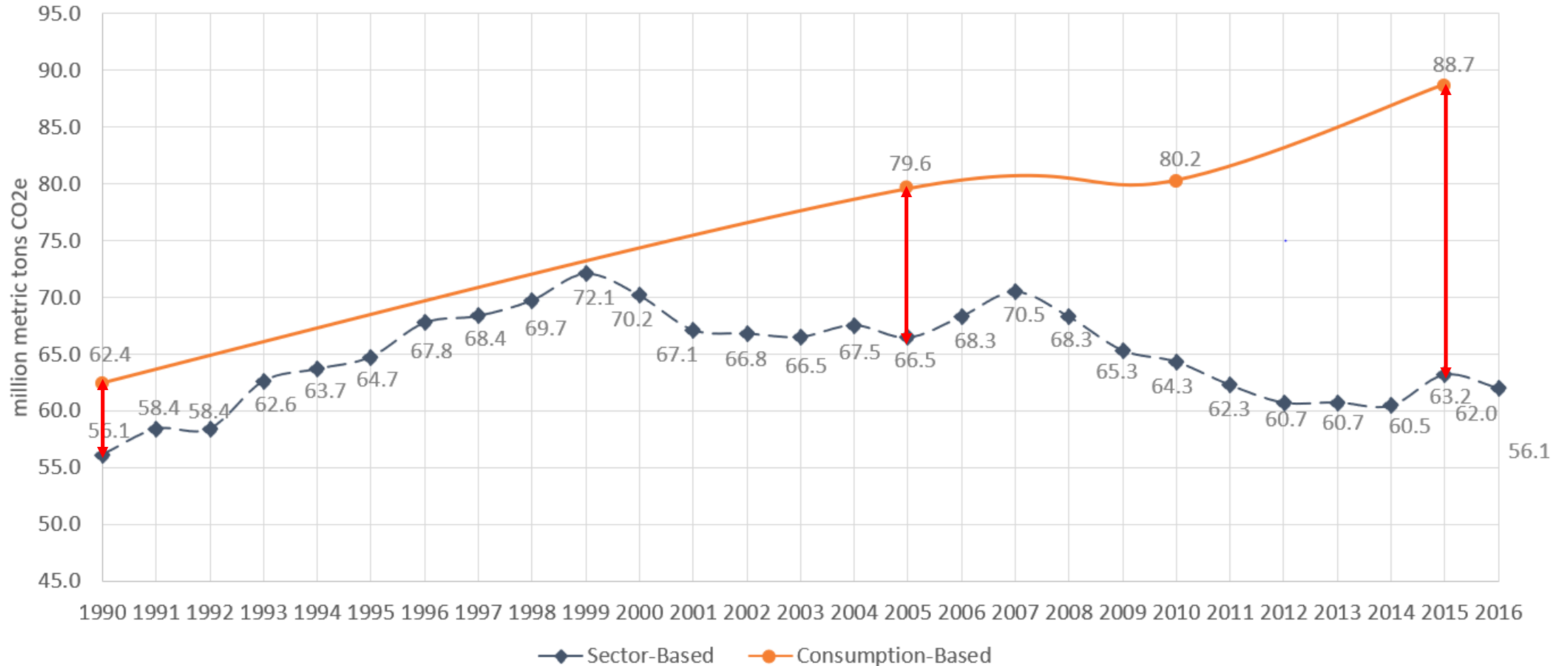
CO₂ emissions embedded in global trade, 2020



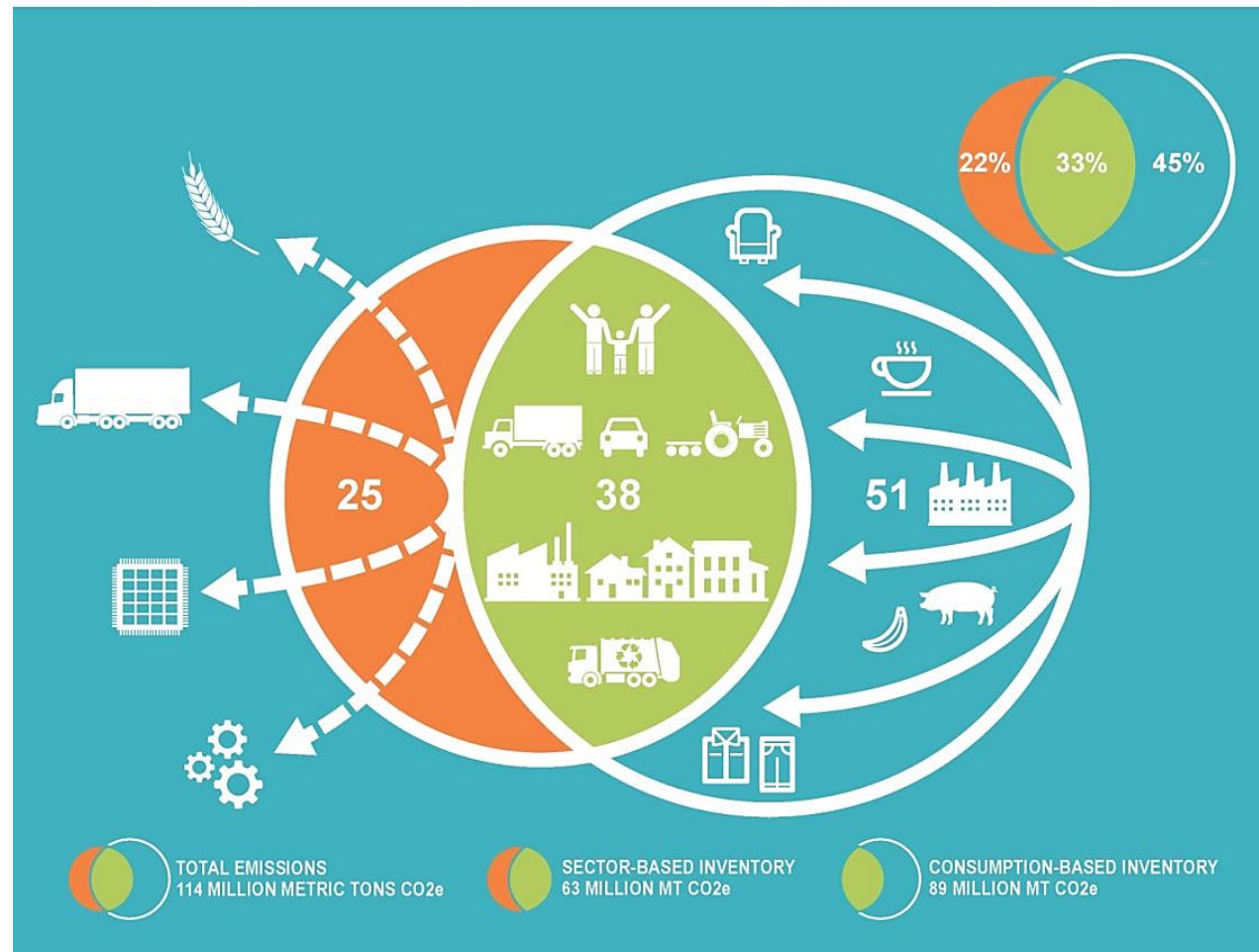
Consumption-based emissions map (Seattle)



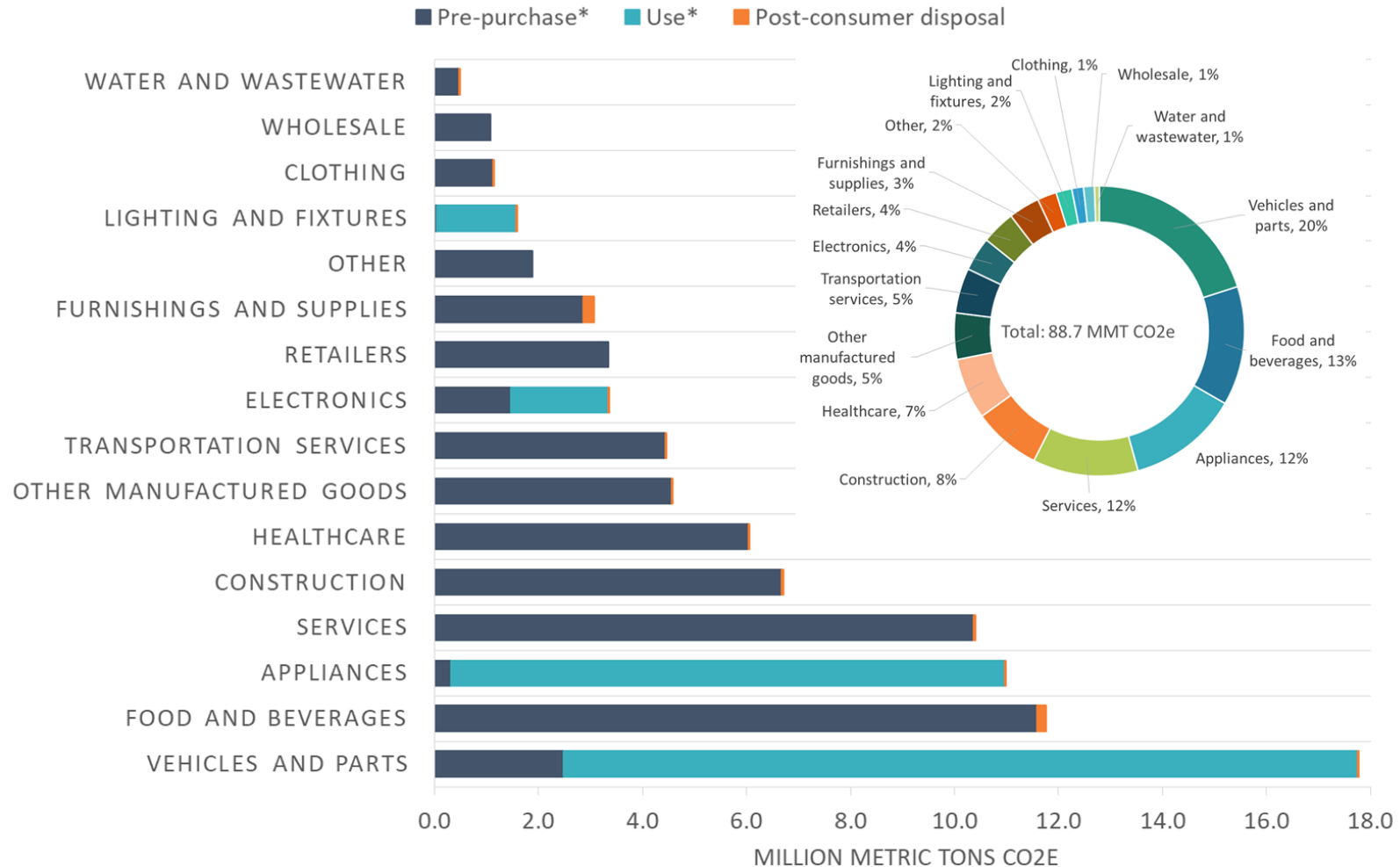
Historic trends in Oregon's emissions



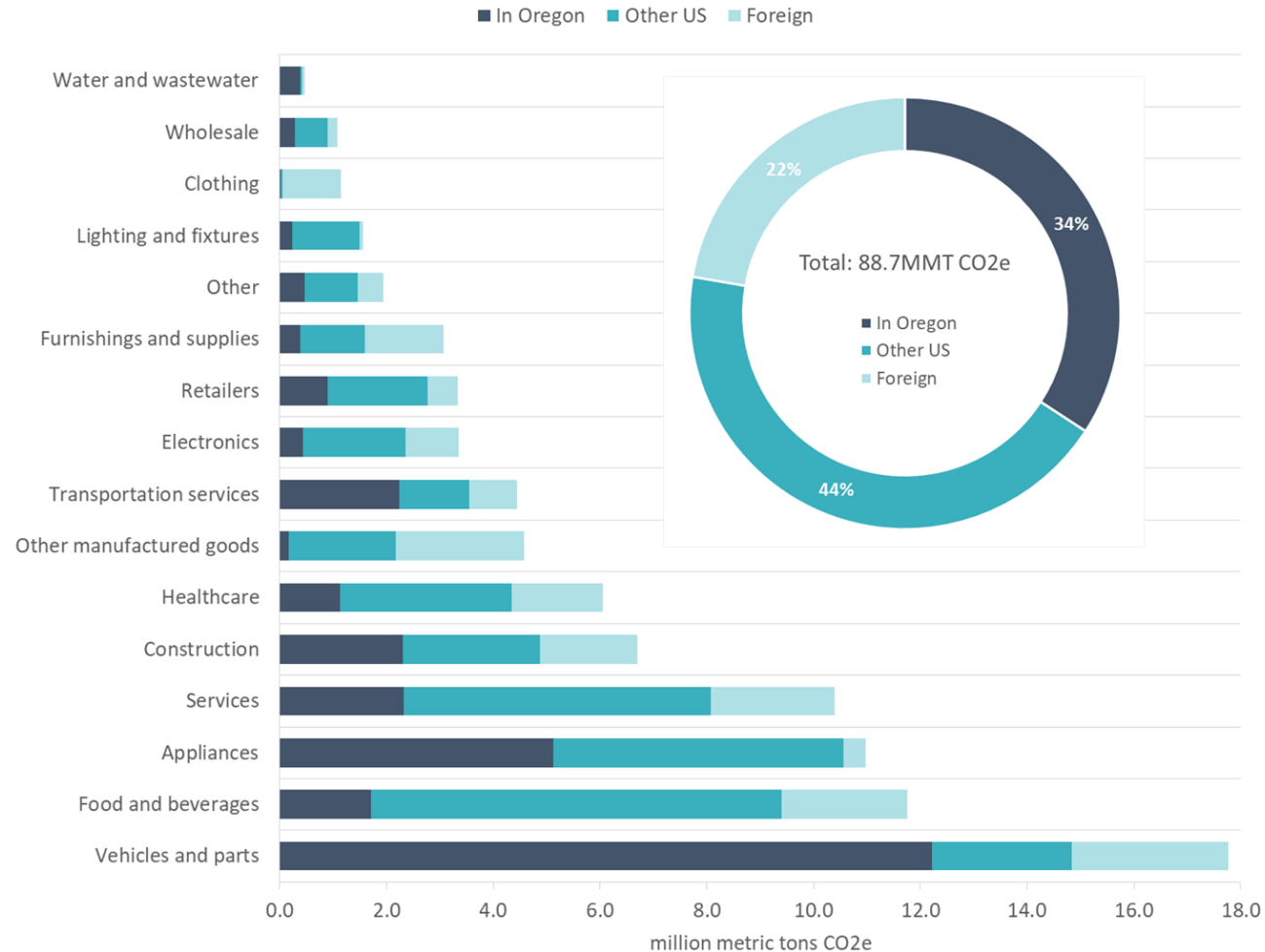
Comparing Oregon's inventories (2015)



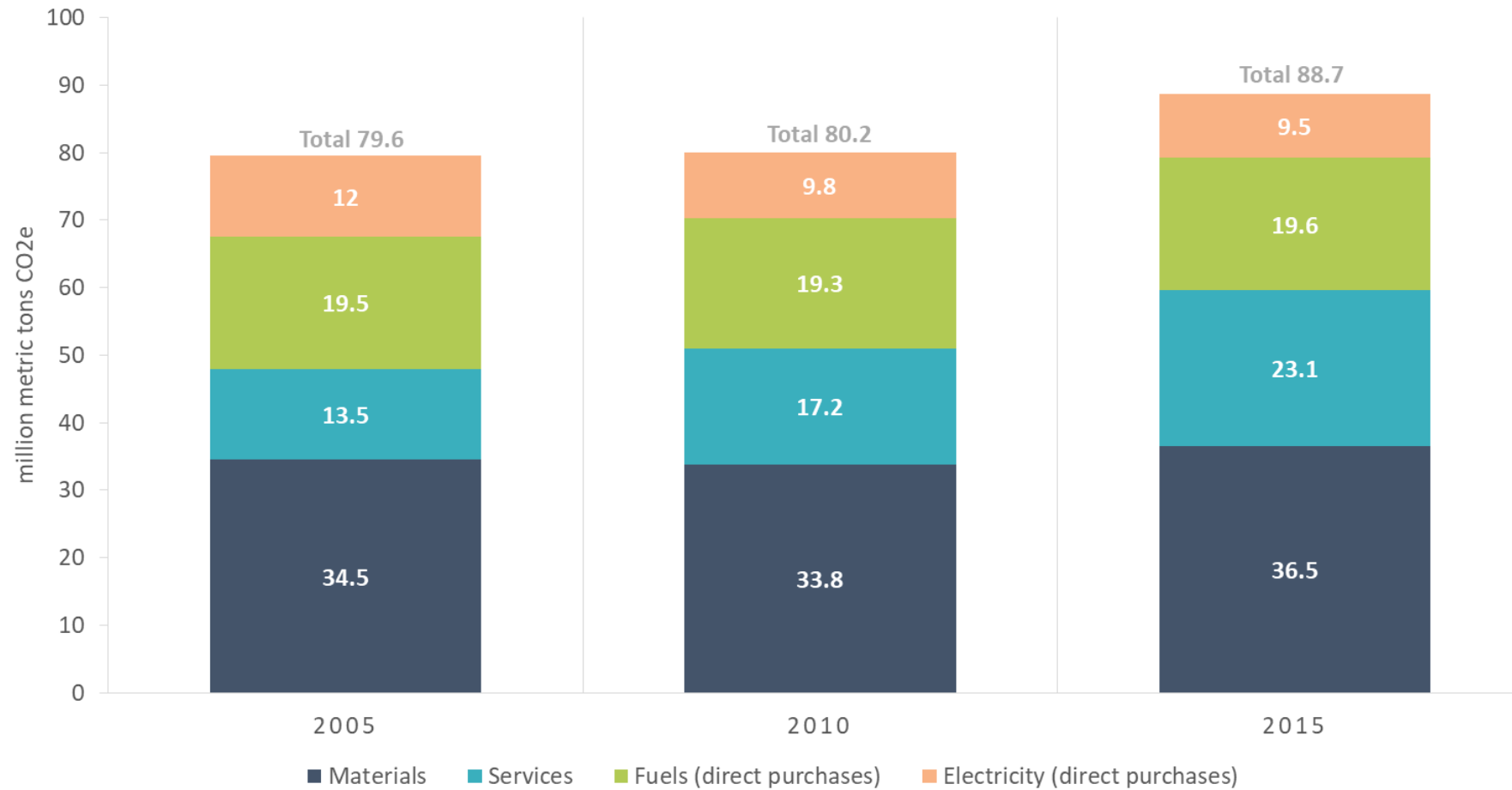
Major categories of consumption-based emissions (2015)



Locations of Oregon's consumption-based GHG emissions (2015)

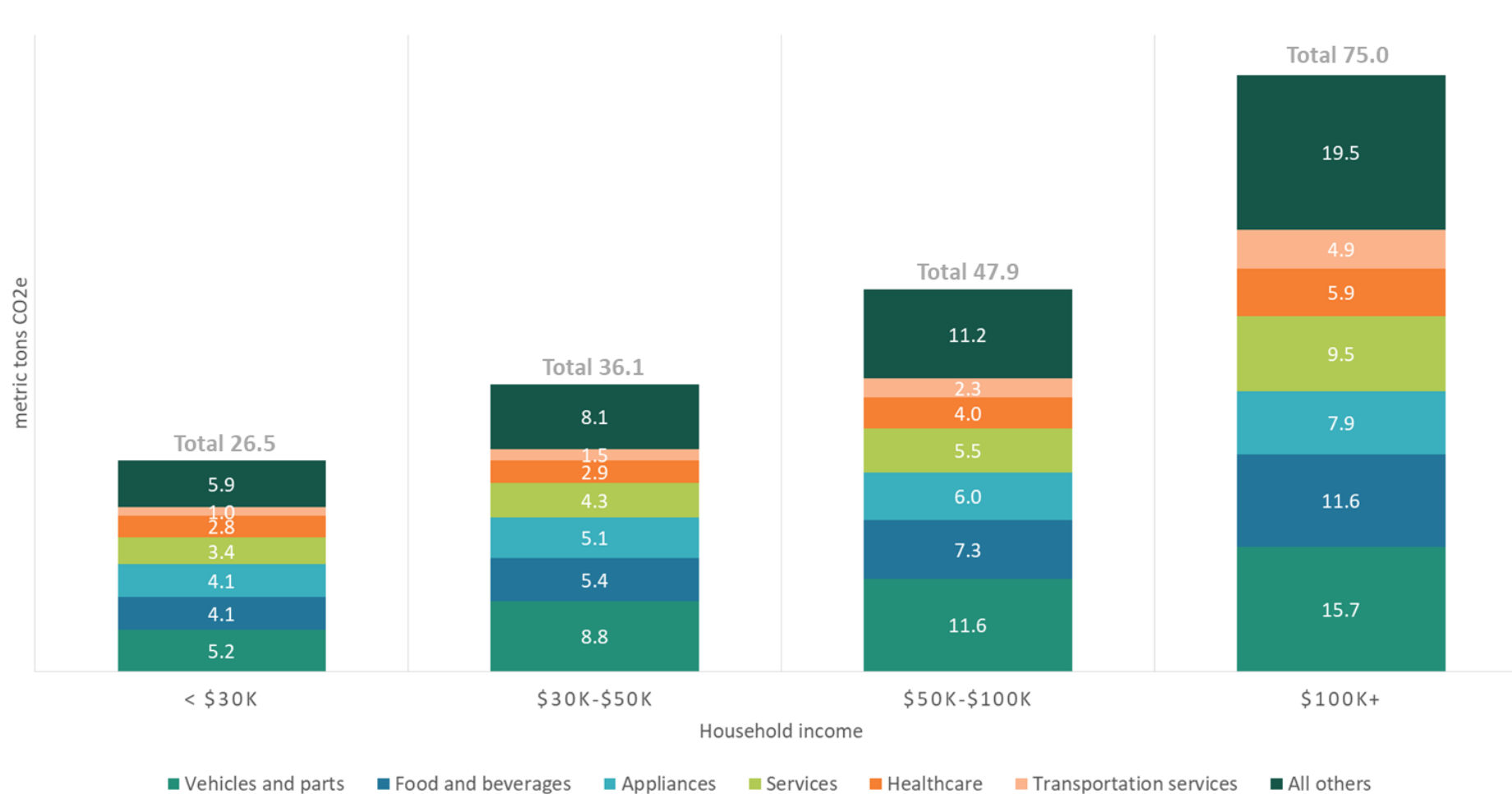


Materials contribute 41% to consumption-based emissions (2015)



Sums of categories may not exactly equal totals due to rounding

Average household consumption-based emissions by income strata (2015)



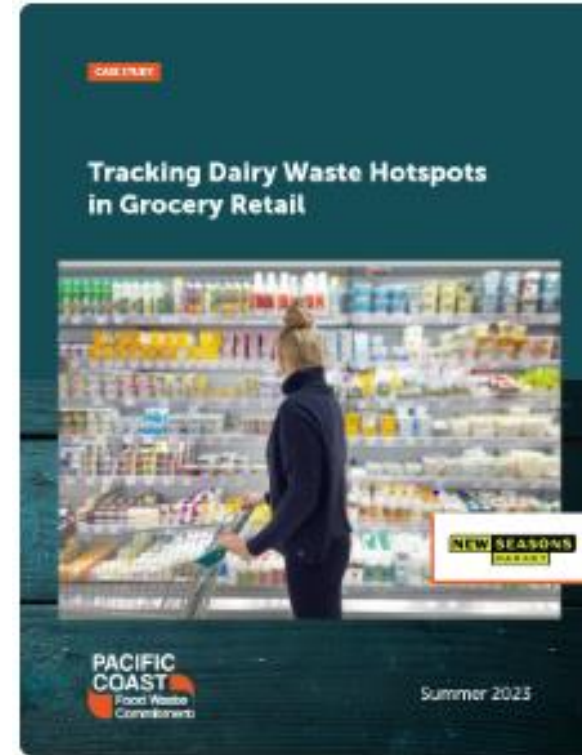
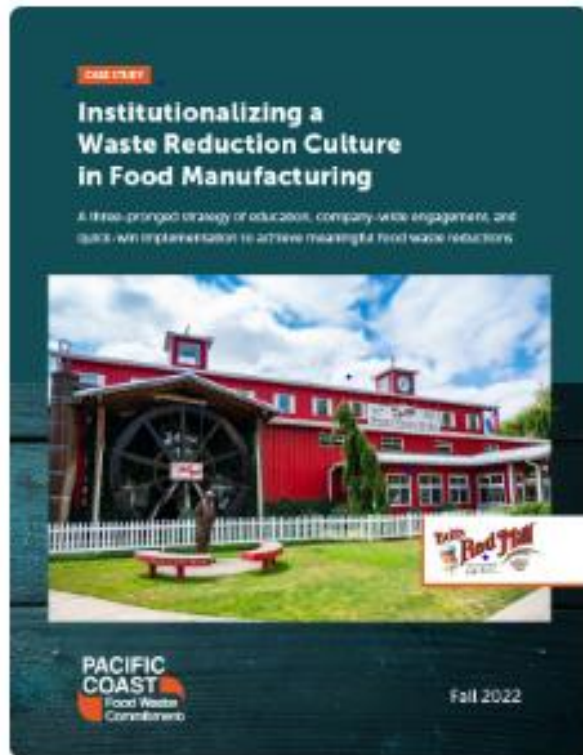
DEQ report to Legislature: scope

- Update the consumption-based inventory and make recommendations for future updates
- Identify opportunities to reduce emissions
- Evaluate economic, social and environmental impacts



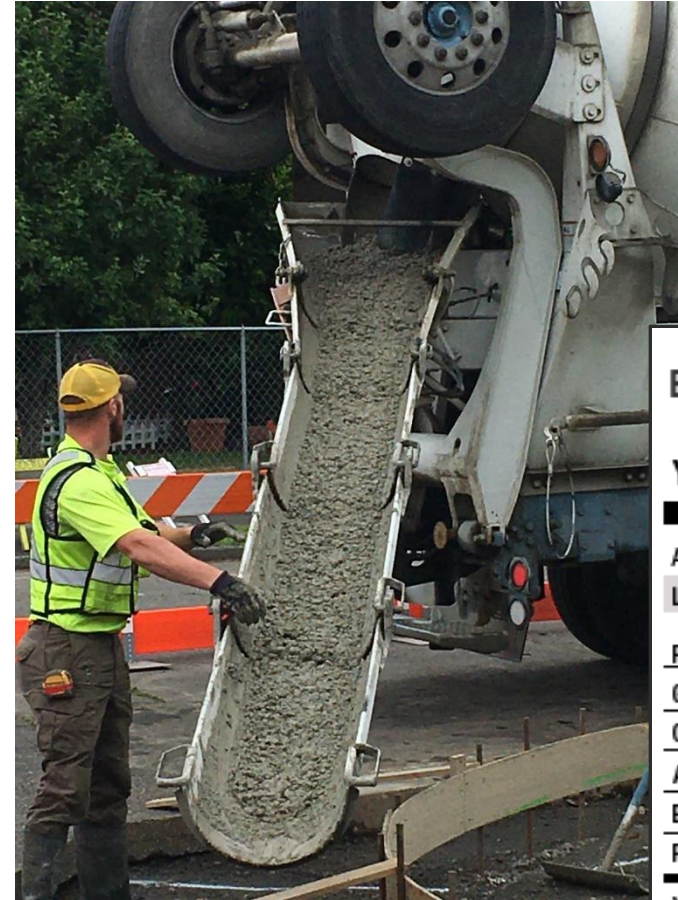
Examples of options: food

- Expand the Pacific Coast Food Waste Commitment



Examples of options: built environment

- Address embodied carbon through code or incentives
- PCC Low Carbon Construction Action Plan
- Impact assessment and disclosure



EPD “Nutrition” Label

Your Building Product

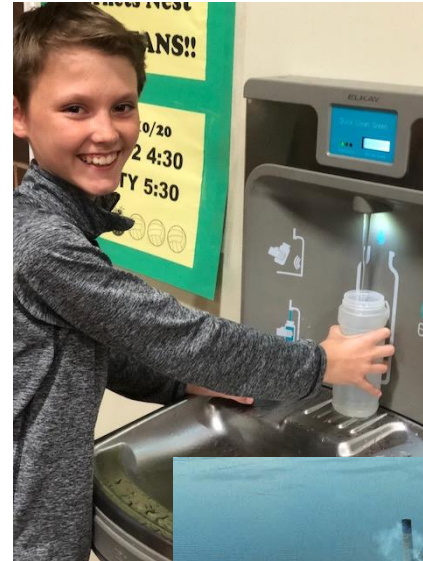
Amount per Unit

LCA IMACT MEASURES	TOTAL
Primary Energy (MJ)	12.4
Global Warming Potential (kg CO ² eq)	0.96
Ozone Depletion (kg CFC- 11 eq)	1.80E-08
Acidification Potential (mol H ⁺ eq)	0.93
Eutrophication Potential (kg N ⁻ eq)	6.43E-04
Photo-Oxidant Creation Potential (kg O ₃ eq)	0.121

Your Product's Ingredients: Listed Here

Examples of options: other

- Incent and/or require impact disclosure
- “Product policy” (including extended producer responsibility)
- Funding for industrial decarbonization
- State procurement
- Extending the lifespan of durable goods



One option for Commission consultation



***DEQ's report to the Legislature is due September 15**

Thank you

David Allaway

david.allaway@deq.oregon.gov

Title VI and alternative formats

DEQ does not discriminate on the basis of race, color, national origin, disability, age or sex in administration of its programs or activities.

Visit DEQ's [Civil Rights and Environmental Justice page](#).

[Español](#) | [한국어](#) | [繁體中文](#) | [Русский](#) | [Tiếng Việt](#) | [العربية](#)
Contact: 800-452-4011 | TTY: 711 | deqinfo@deq.state.or.us