

Reducing Embodied Carbon: Options for the Oregon Global Warming Commission

DEQ Materials Management Program

July 28, 2020

Outline

- Introduction to embodied emissions
- Results from Oregon's Consumption-Based Emissions Inventory
- Options for reducing embodied emissions

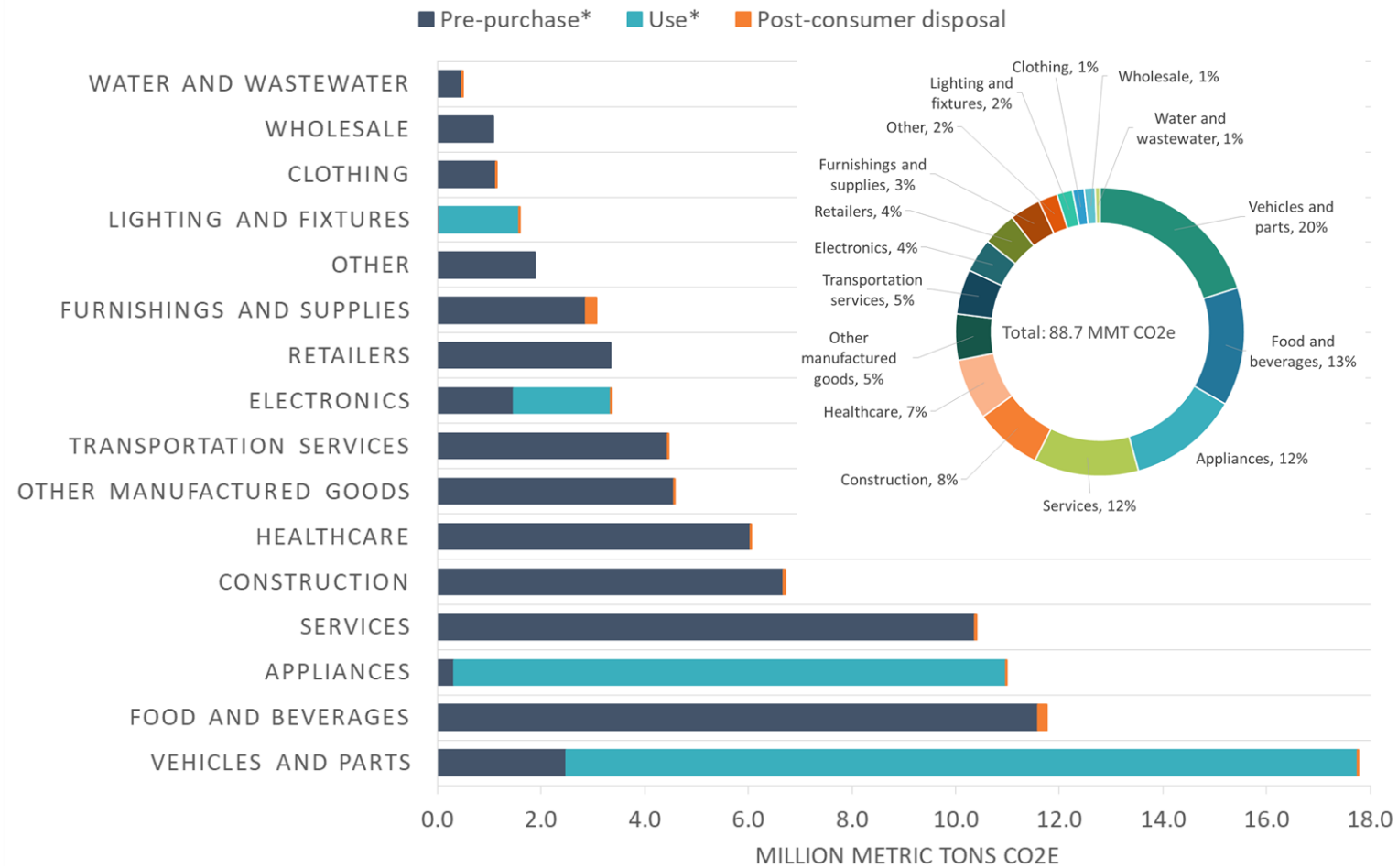
Local consumption, global production (and emissions)



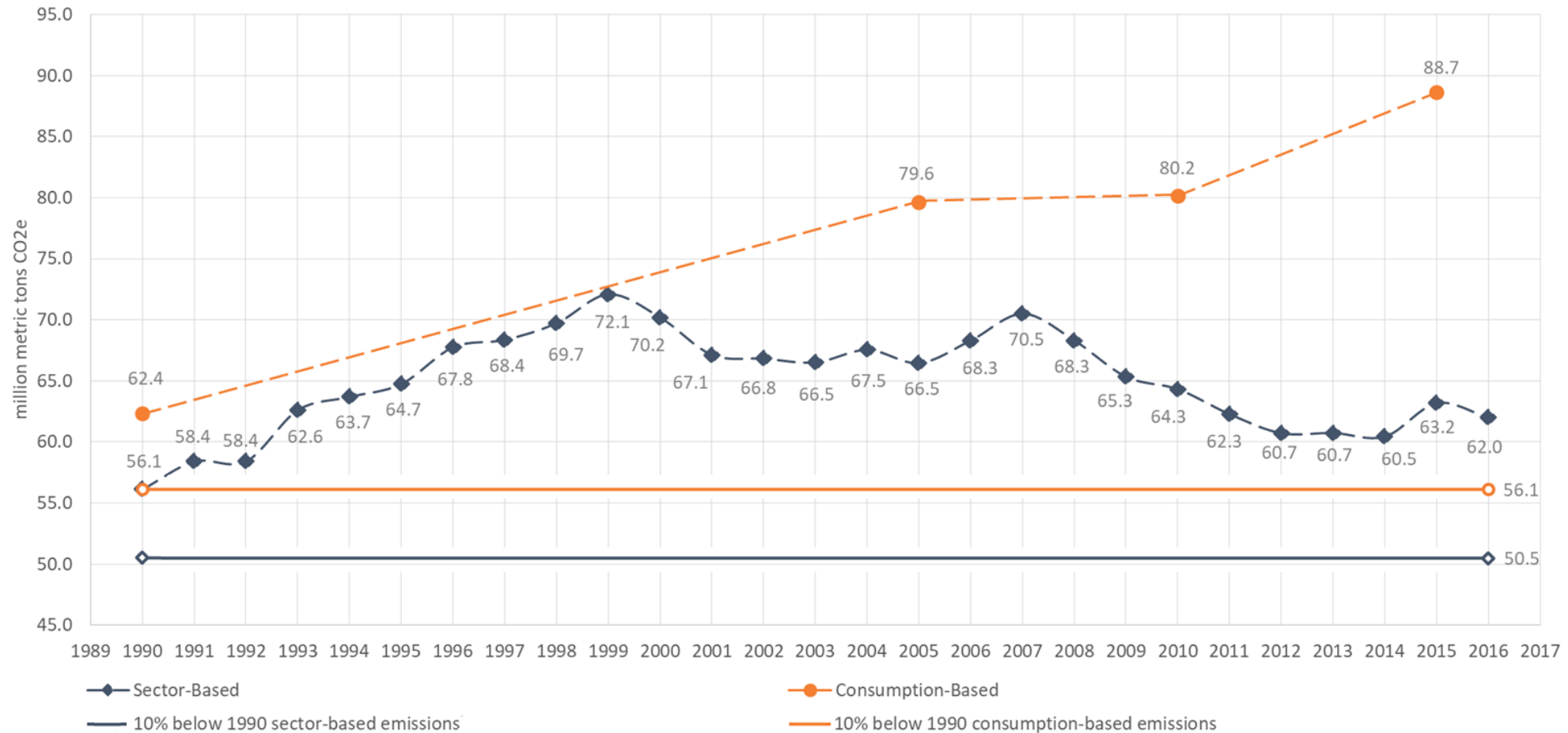
Embodied emissions

- Embodied carbon in the materials we use
 - Life cycle emissions = supply chain/production + use + disposal
- Why embodied emissions?
 - More complete picture of both Oregon's contribution to global climate change and opportunities to reduce emissions
 - Focus on most carbon-intensive activities and materials

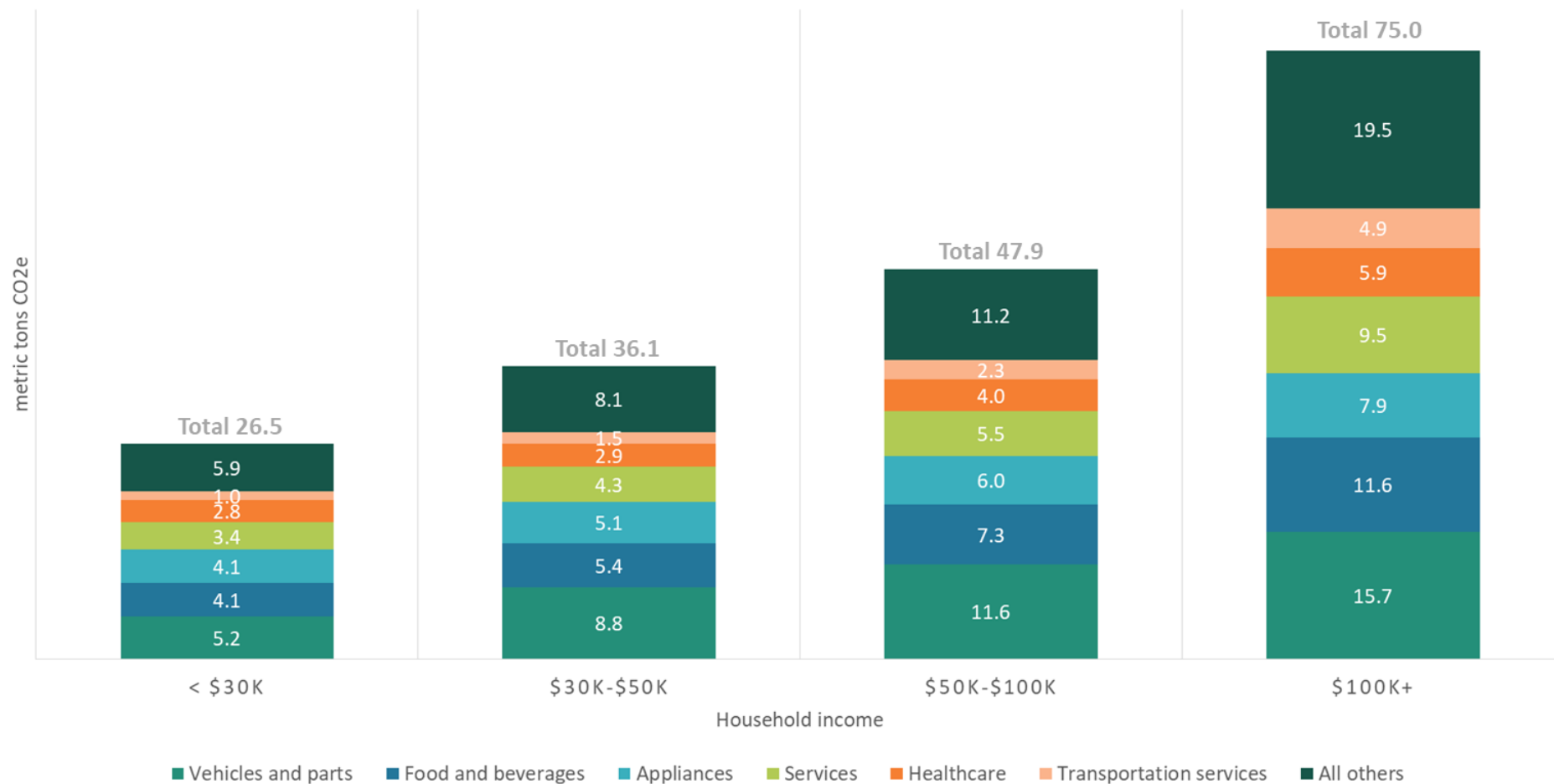
Oregon 2015 consumption-based GHG emissions, by category of consumption and life cycle stage



Oregon sector-based and consumption-based GHG emissions, 1990 - 2016



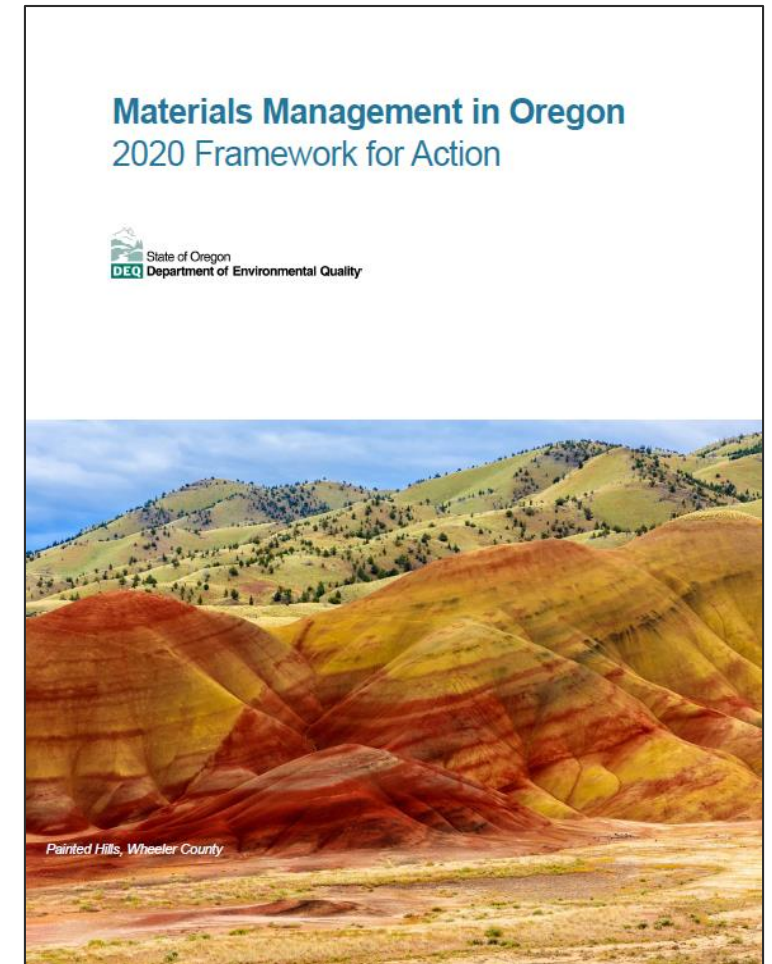
Average per-household 2015 consumption-based GHG emissions, by income group



Materials Management Program

2050 Vision and Framework for Action

- Food waste prevention strategy
- Product environmental footprinting
- Reuse and repair strategy
- Space-efficient housing
- Built environment strategic plan
- CBEI reporting



A close-up photograph of vibrant green leafy vegetables, likely lettuce or spinach, filling the entire frame. The leaves are layered, showing their intricate vein structure and varying shades of green from deep emerald to bright lime. The lighting is soft, highlighting the texture of the leaves.

25-40%

OF ALL FOOD

grown or
imported into the
U.S. for human
consumption is
never eaten

Food waste prevention and recovery

EO 20-04: reduce food waste by 50 percent by 2030 (from 2015 baseline)

- Prioritize prevention
 - Maximize prevention reductions using known approaches
 - Research and scope new prevention efforts
- Expand recovery

Preventing food waste

- Commercial outreach
- Systemic/institutional causes of food waste
- Schools
- Residential campaigns and initiatives
- State procurement





OREGON BUYS

eProcurement System

Procurement

- Goals, measurement and tracking of embodied emissions.
- Standards for embodied carbon in construction materials.
- Tools and guidance for low-carbon food purchasing.
- Expanded scope for new Sustainable Building Standards.
- Extended product lifespan.



Photos: (left to right) Corvallis Bicycle Collective, Green Lents, St. Vincent DePaul of Lane County and the Drexel H. Foundation.

2020 Repair and Reuse Grant Recipients

Reuse and repair

- Grants to reuse and repair businesses and non-profit organizations.
- Right to Repair policy.



Embodied carbon will be responsible for

almost half

of total new construction emissions
between now and 2050.

Building materials and built environment

- Measurement and disclosure of carbon impacts.
- Use of low-impact alternatives.
- Whole-building carbon disclosure.
- Building and zoning codes for smaller housing.
- Mandatory deconstruction ordinances in cities.
- Producer responsibility for recovery of building materials.



Refrigerants

- Regulatory and incentive programs for refrigerants in new products.
- Comprehensive inspection and enforcement program to reduce leaks.



Aviation emissions

- Regulatory and incentive programs to reduce aviation emissions.

Thank you

- Questions?

