

West Coast Climate and Materials Management Forum Climate Friendly Government Purchasing

Reducing the Carbon Footprint of Government Purchasing: Analysis, Tools & Opportunities

- U.S. federal, state, & local government spends estimated \$2.6 trillion/yr on products & services
- We need to walk our talk & do more to address the gaps
- Smart purchasing decisions are a win-win when it comes to government finances and the environment



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Reducing the Carbon Footprint of Government Purchasing: Analysis, Opportunities and Tools

- Use a carbon-focused consumption frame that goes beyond “single attribute” purchasing
- Review GHG inventories & other tools to evaluate where the carbon impacts of purchasing occur
- Identify the highest impact areas of government & higher education purchasing
- Facilitate movement towards climate friendly purchasing



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Government Institutions – Boundaries

- Federal, regional, state, and local governments & higher education
- Could expand to address other institutions in the future (e.g. hospitals, prisons)





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Single Attribute Bias



- Recycled content
 - Local
- Energy-efficient
 - Fair trade
- Biodegradable
 - Recyclable
- Low VOCs
 - Bio-based
- Sustainably harvested
 - Organic



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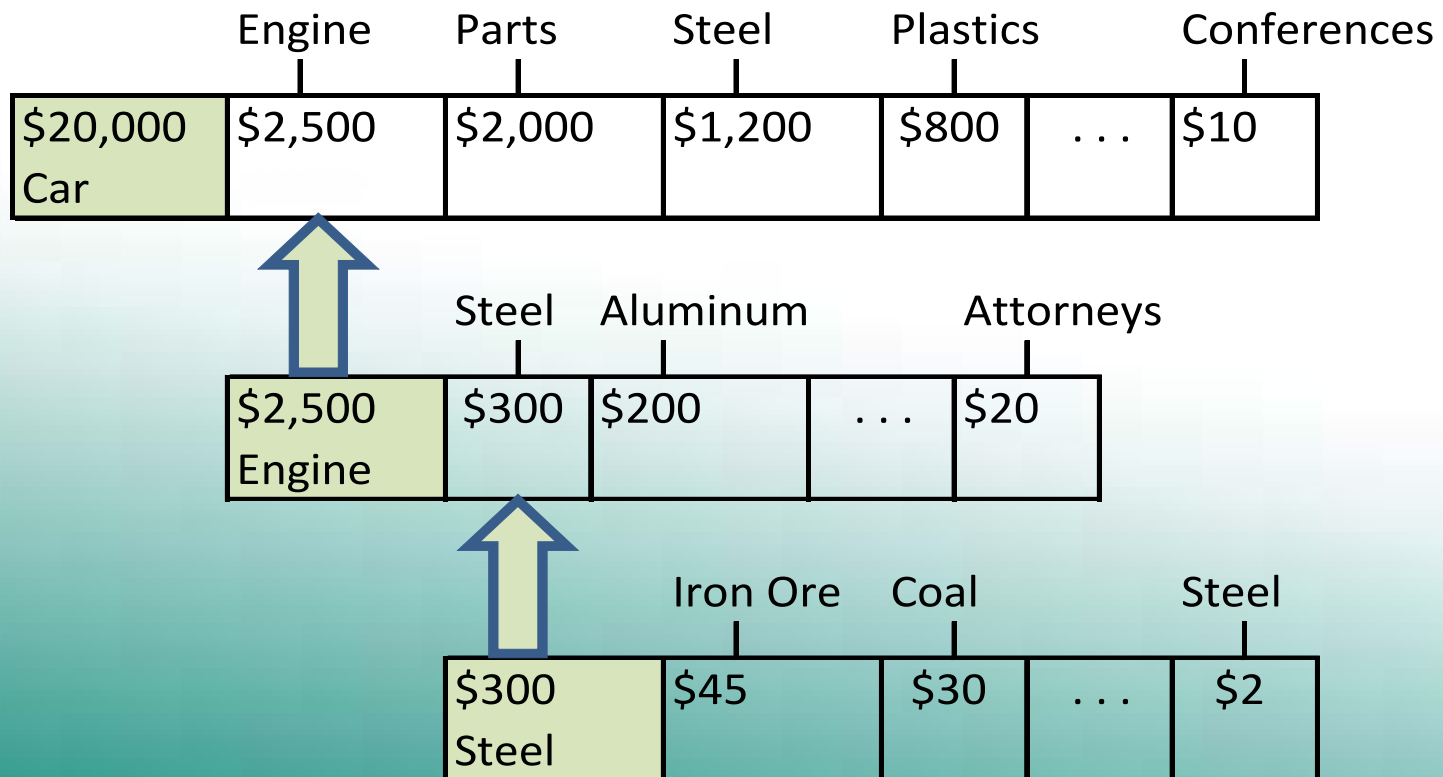
Tools for Identifying High Carbon-Impact Categories of Purchasing

- Economic Input-Output Life Cycle Analysis (EIO-LCA) (Carnegie Mellon University)
- Consumption-Based Emissions Inventory (CBEI) developed for Oregon and King County, WA (Stockholm Environment Institute)

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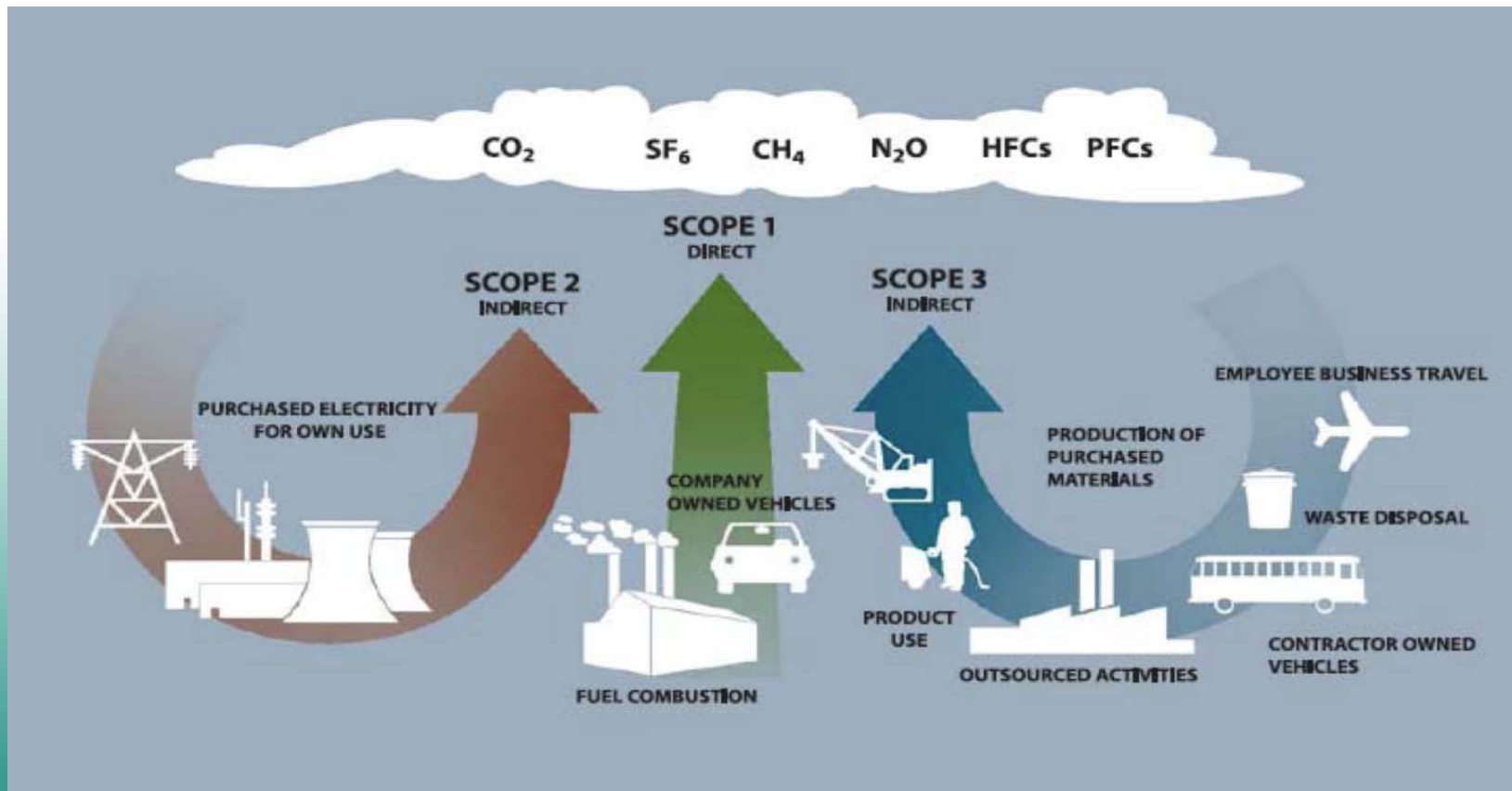
Input-Output LCA



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Scope 1, 2 & 3 Emissions





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Scope 3 Purchasing-Related GHG Emissions

Institution	% of Total GHG emissions that are Scope 3 procurement emissions	Procurement Emissions Source	% of Total Procurement Emissions
King County, WA (CBEI)	37%	Construction Consulting/other services	55% (5.5% is cement) 19.3%
Beaverton, OR (EIO-LCA)	42%	Construc./maintenance Professional services	76% 10%
Eugene, OR (EIO-LCA)	60%	Construction Cement manufacturing	45% 16%
Portland Metro	36%	Food (Zoo) Construc./maintenance Professional services	44.4% 18% 18.2%
UC Berkeley (EIO-LCA Hybrid)	39%	Construction Scientific equipment Office equipment IT/Telecom services	24% 20% 13% 13%

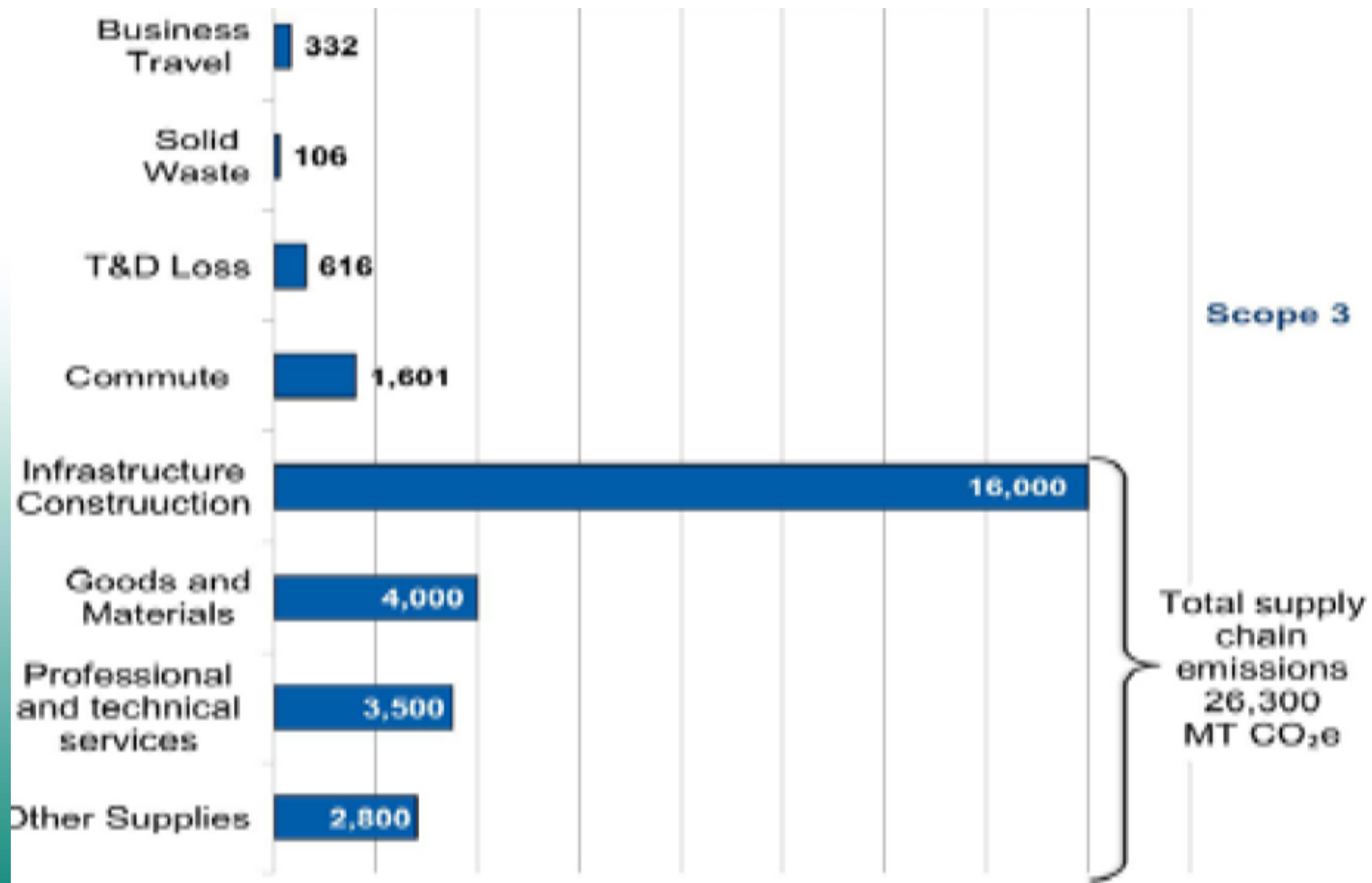


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Eugene, Oregon - Scope 3 Emissions

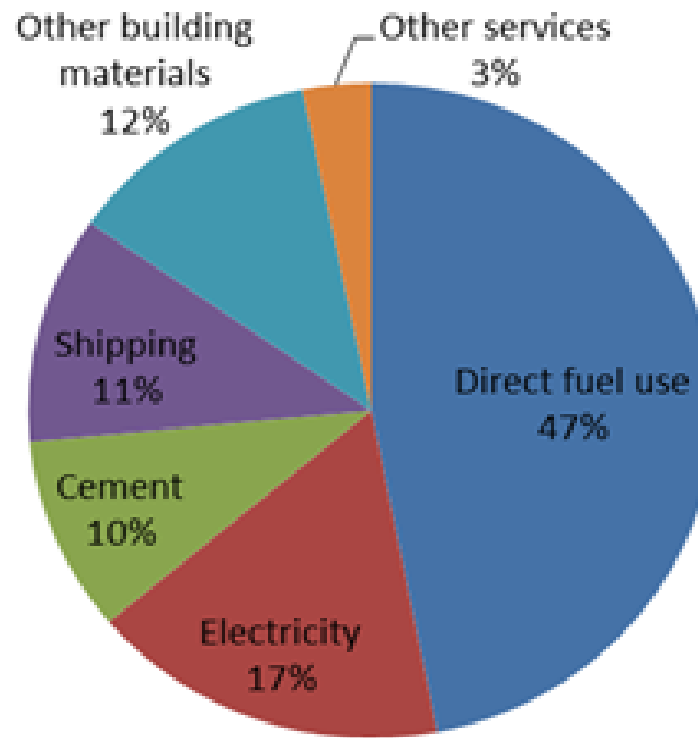


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King County Scope 3 Construction Emissions

Figure 3. Estimated Relative Sources of Construction GHG Emissions

Source: SEI's CBEI model



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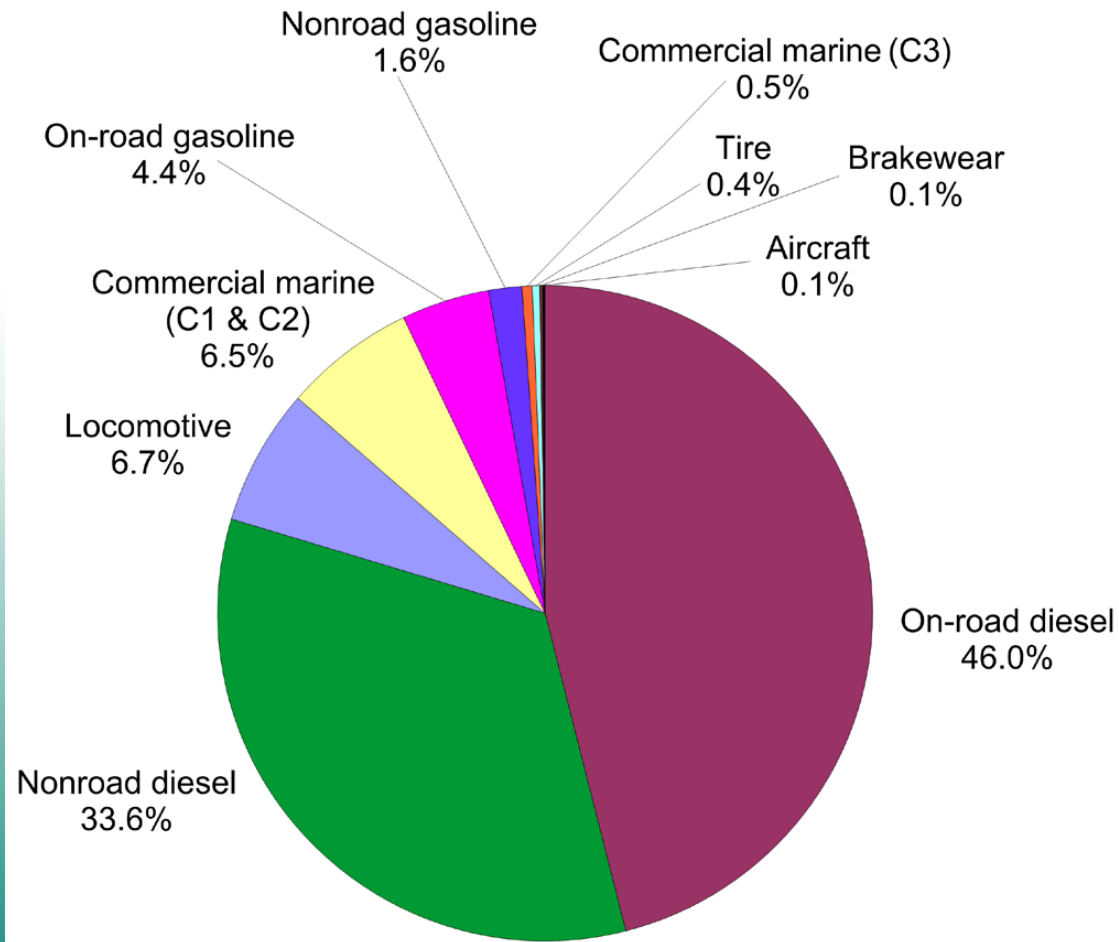
Black Carbon & Climate Change

- Most fuel-dependent construction equipment and transport trucks use diesel
- Diesel combustion produces black carbon, the 2nd largest contribution to global warming
- The impacts of diesel emissions are undercounted in GHG inventories
- Black carbon is a potent climate change mitigation opportunity



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U.S. BC Emissions from all Mobile Source Categories



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The OPPORTUNITY Consideration - *Low hanging fruit that will reduce emissions AND costs*

The LeanPath – Intel Story:

- Tracked all pre-consumer food waste at Intel dining facilities in Hillsboro, OR
- Goal: To tackle upstream wasting of food by eliminating at pre-consumer level
- Pre-consumer food waste reduced by 47%, cost per meal reduced by 13.2%, and GHG emissions reduced by 100 MTCO₂e over 1 year





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LeanPath/Intel Project – Avoided GHG Emissions/Yr

Selected Items	Upstream GHG reductions, MTCO ₂ e	Downstream GHG reductions, MTCO ₂ e	Total GHG reductions
Bread/bakery	3.35	0.62	3.97
Coffee	3.38	-	3.68
Dairy	9.21	0.36	9.57
Fish	1.25	0.07	1.32
Fruit/veg	15.6	7.12	22.72
Poultry	10.7	2.05	12.75
Beef	41.7	1.14	42.84
Total	85.49	11.36	96.85



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Identifying High Carbon Impact Categories of Government Purchasing

Medium-high impact categories

- Construction/maintenance (e.g., concrete, asphalt)
- Diesel (black carbon)
- Food
- IT
- Carpet

Other categories not fully evaluated but significant

- Professional services
- Lab chemicals & equipment
- Furniture & equipment
- Other building materials

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What Can We Do As Purchasing Agents, Sustainability Coordinators, Climate Change Experts?

- Walk our climate talk – Use the carbon lens and avoid single attribute bias
- If doing GHG inventories, include Scope 3 purchasing-related emissions
- Address high impact purchases & services through smart purchasing strategies
- Look for opportunities (e.g. low-hanging but impactful fruit, financial savings, cross-benefits)



Reducing the Carbon Footprint of Government Purchasing: EPA Forum Toolkit

- Web-based toolkit for government & higher education
- Research on high-impact categories & alternatives
- Stories - innovative approaches, successful implementation, & measurement
- Links to studies, procurement guides & collaboration partners
- Interactive network





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EPA Forum Government Purchasing for Climate Protection Workgroup

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More information on EPA West Coast Climate & Materials Forum

<http://www.epa.gov/region10/westcoastclimate.html>

A link to the Carnegie Mellon EIO-LCA website:

<http://www.eiolca.net/>

A link to a Comparison between the CBEI and EIO-LCA:

<http://www.deq.state.or.us/lq/pubs/docs/GreenhouseGasEmissionsReport.pdf>