The global climate impact of local government purchasing

Alameda County Sustainability

Climate Corps Bay Area

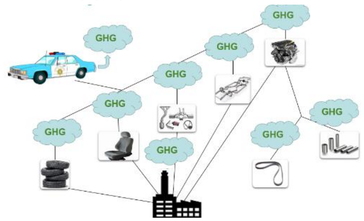
Supply Chain Emissions Inventory

Introduction

In the climate protection world, we typically focus on greenhouse gas (GHG) emissions released from burning fossil fuels to heat and cool buildings, produce electricity, and power vehicles and machinery. Yet the complete climate impact of local government – or any organization — also includes the emissions from the entire *life cycle* of the goods and services purchased and consumed (Jones 2007). This supply chain GHG emissions inventory of Alameda County purchasing estimates the 'upstream' emissions associated with all government expenditures in fiscal year 2010.

Government Operations Emissions

Supply Chain Emissions



Method

Economic input-output life cycle assessment uses data from the transactions between different industries to construct an average supply chain for the goods or services produced by a given industry, or economic sector. Data on the environmental impacts per dollar output of each sector is used to create *emission factors* — the total supply chain emissions per dollar spent on the final output of each sector (Carnegie Mellon University 2014).

For each sector: $\$ \times \frac{CO_2e}{\$} = CO_2e$

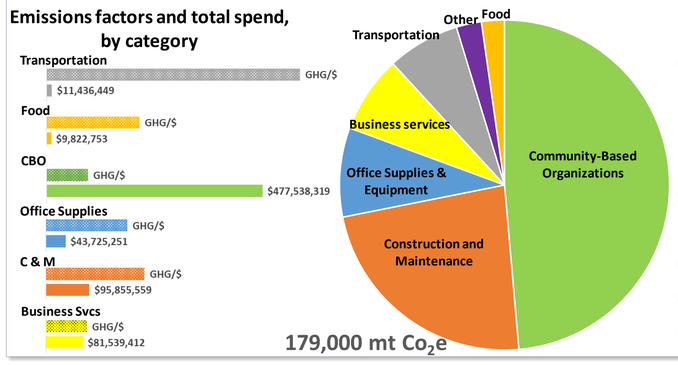
Variable:	Total County expenditure	US average *emissions factor*	Estimated GHGs
Data source:	AlcoLink purchase data	EIOLCA Database	(Dependent)

Jones, Christoper M. "Appendix R: Lifecycle Analysis - UC Berkeley Climate Footprint." In *Feasibility Study 2006-2007 Final Report*, by Fahmida Ahmed, 81-88. UC Berkeley Climate Action Partnership (CalCAP), 2007.

Carnegie Mellon University Green Design Institute. "Economic Input-Output Life Cycle Assessment (EIO-LCA) US 2002 (428 sectors) Producer model." 2014.

Results

FY 2010 Supply Chain Greenhouse Gas Emissions



The *pie chart* divides the total carbon footprint of what the County purchases into six high-impact categories. The supply chain releases more than triple the GHGs from government services and operations. The *stacked bar charts* show the drivers of supply chain emissions for each category: GHGs per dollar spent on top, and total expenditure below.

Recommendations & Conclusions

In order to limit the climate impact of purchasing practices, I recommend that the County:

1) expand reuse initiatives to reduce consumption of goods;
2) develop programs to extend County's climate action success to service contractors;
3) include sustainability of vendors in environmentally preferable purchasing policy;
4) promote low-carbon construction and materials in the Green Building Ordinance; and
5) investigate mechanisms for decreasing the carbon intensity of food and fuel purchases.

More broadly, the sustainable purchasing community should focus on *buying less* through reusing goods, rethinking needs, and increasing the efficiency of processes in order to reduce *all* the negative consequences of commodities' production, use and disposal, plus save money. Alternatively, *buying green* often entails hidden trade-offs between sustainability goals.

Sam Bliss

I am an aspiring ecological economist with research interests in climate change, political economy, inequality, currency, and degrowth. I believe greenhouse gas emissions are the responsibility of consumers and fossil fuel extractors, and should be counted accordingly.

Strategic Energy Innovations

Alameda County SUSTAINABILITY Local Action, Global Impact.

Acknowledgements

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