A Framework for Evaluating Carbon Footprint Tools

The Carbon Footprint of Freight: Tools & Methods October 25, 2012 Cambridge, MA

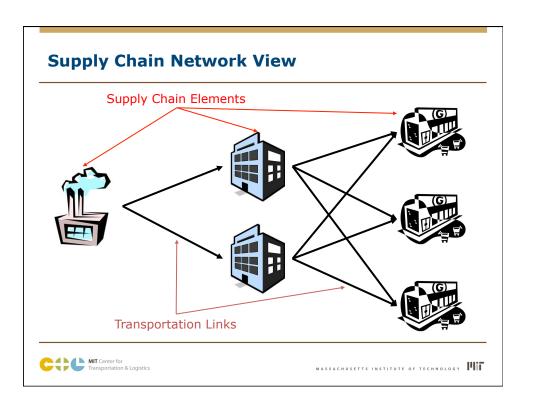
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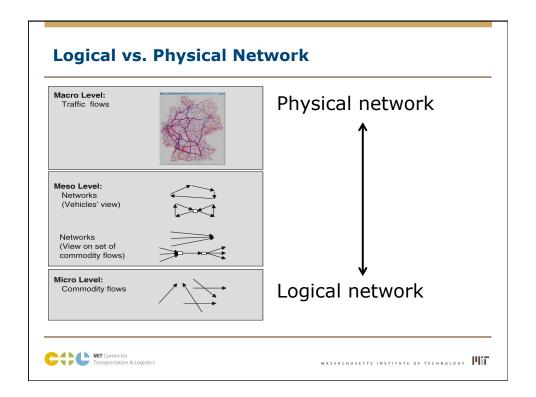


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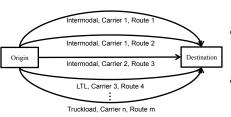
Agenda

- Network view of supply chains
- Programs, methodologies, and tools
- Carbon accounting systems
- Criteria for evaluating tools





Constructing the Virtual Network



- Each link represents a possible route
- Potentially large number of links
- Carbon calculated for each link

How do we determine which links should be included?



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Programs, Methodologies, and Tools

Program

Methodology

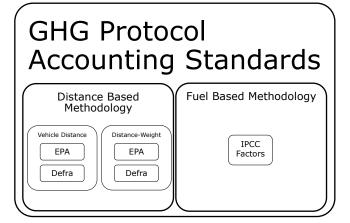
Tool

- Programs
 - Guidelines that specify what to include
- Methodologies
 - Describe the process for calculating emissions
- Tools
 - Implement methods with actual data/numbers



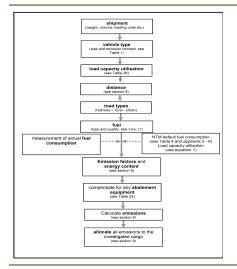
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Program, Methodology, and Tool Example





Methods vs. Data



- · EPA ClimateLeaders
 - · National estimate of fuel

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- Ton-miles statistics from FHWA
- Defra
 - Surveys
- NTM
 - Emission modeling software
 - Defined scenarios



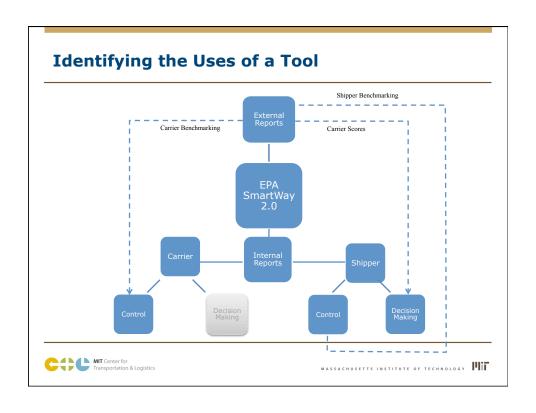
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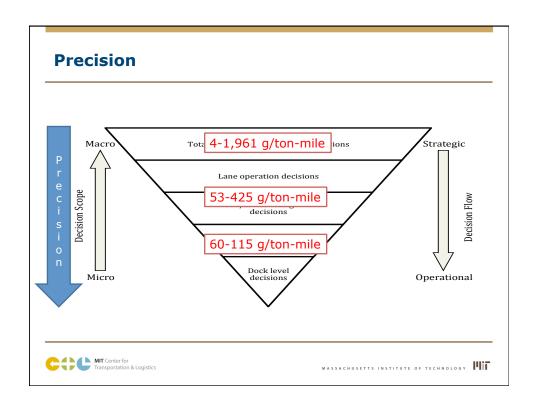
How do we decide what is the best approach?

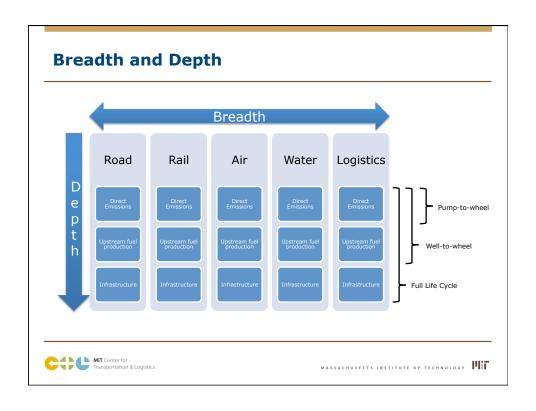


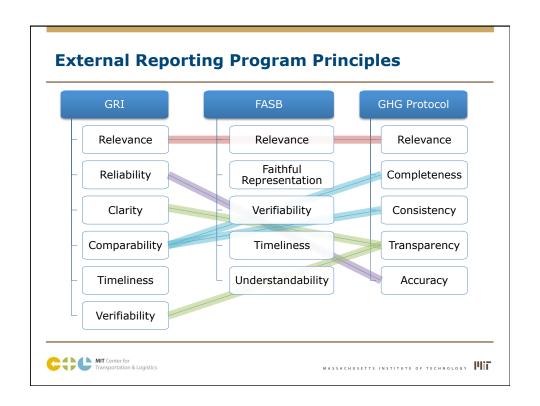
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Multiple Roles of Carbon Accounting Systems Regulators Customers MIT Center for Transportation & Logistics MASSACHUSETTS INSTITUTE OF TECHNOLOGY









Evaluating Tools: Five Criteria

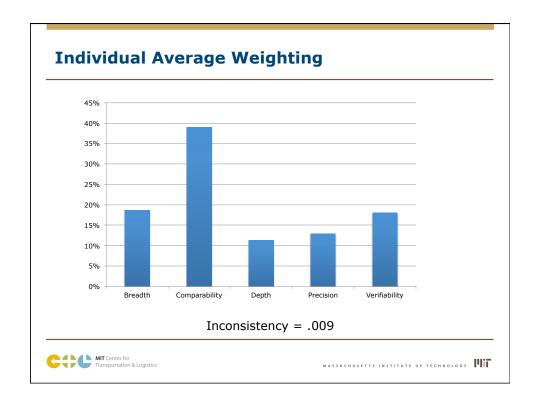
- Breadth
 - The scope of activities included in the measurement
- Depth
 - The range of direct and indirect emissions included in the measurement
- Precision
 - The level of detail provided by the measurement
- Comparability
 - The degree with which measurements can be compared across time, organizations, and

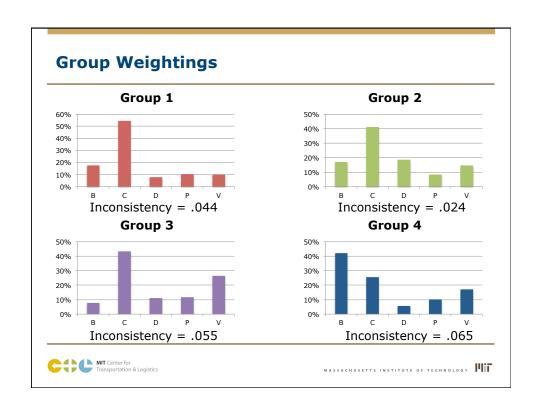
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- Verifiability
 - Degree of assurance and transparency in the measurement



LowBrea	adth ────────────────────────────────────
A focus on only one mode of transport.	All modes of transport and supporting logistics activities.
Compa	
Low Firms may choose different system boundaries, sources of data, or report results in non-standard ways.	All firms report in a standard format with identical system boundaries, methods, and data.
Dep	
Low ← Only direct (Scope 1) emissions are included.	Full life cycle assessment including direct emissions, upstream fuel production, infrastructure, and capital goods.
Prec	
Low Global averages or aggregate carbon emissions reporting	High Shipment level reporting
Verifia	
Low No checks are performed to verify calculations and little to no data is made publicly available.	High Results have been audited and verified by a neutral 3 rd party and all data is publicly available for review.





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