Session 3:
Transport system optimization: logistics and inter-modality

Introduction

Moderator: Professor Alan McKinnon

EU JRC / IEA Workshop
Future Role of Trucks for Energy and the Environment
Brussels  8th November 2016
Scoping of Logistics Interventions

logistics ≠ transport

critical inter-dependence between technology, infrastructure and logistics

delimiting the boundary around logistics initiatives

Nature and scale of logistics interventions varies between long haul and urban freight operations
Scoping the Road Freight Decarbonisation Effort

- Logistics System Design / Supply Chain Restructuring
- Freight Modal Shift
- Vehicle Routing and Scheduling
- Vehicle Loading
- Driving Style
- Vehicle Maintenance
  - Vehicle Technology
  - Alternative Fuels

emissions per vehicle-km

total emissions

total vehicle-kms

logistics
Climate Change Mitigation Measures Specified for Freight in INDCs

- Content of 158 INDCs for 185 countries analysed: 43% explicitly refer to passenger transport, 13% explicitly refer to freight transport

Analysis by Sudhir Gota

Diagram:

- Freight Mode Shift: 48%
- No Specific Measure: 15%
- Fuel Economy Improvement: 15%
- Electrification of Freight Rail: 7%
- Port Decarbonization: 7%
- Decarbonizing Fuel: 4%
- Improve vehicle utilisation: 4%

Under-estimation of logistics potential: % of INDCs specifying particular green freight measures
Macro-level Assessment of Potential Carbon Savings from Logistics Initiatives

**constraints**

- lack of baseline data on current practice and adoption of initiatives
- variability of practice and related CO$_2$ impacts by company and sector
- inter-relationship between logistical activities – difficult to isolate effect of specific interventions
- limited monitoring / disclosure of carbon impacts of past interventions
- little empirical data for the calibration of simulation models
- difficulty of assessing wider supply chain and environmental impacts

How can we overcome these constraints?
Positioning of the invited contributions

Nico Anten
Lean and Green

Phil Greening
SRF - HWU

Jacques Leonardi
Westminster Univ

Vincent Moal
P&G

company specific

industry level

scope

urban

long haul

spatial scale

best practice

scalability

uptake rate

macro-level potential
Possible Issues for Discussion

What logistics interventions are likely to yield the greatest carbon savings in the road freight sector?

How can companies be incentivised, individually and collectively, to implement them?

How close is the alignment between economic efficiency and carbon intensity in the management of logistics systems?
Professor Alan McKinnon

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