



Transport CO2 Calculation Methods



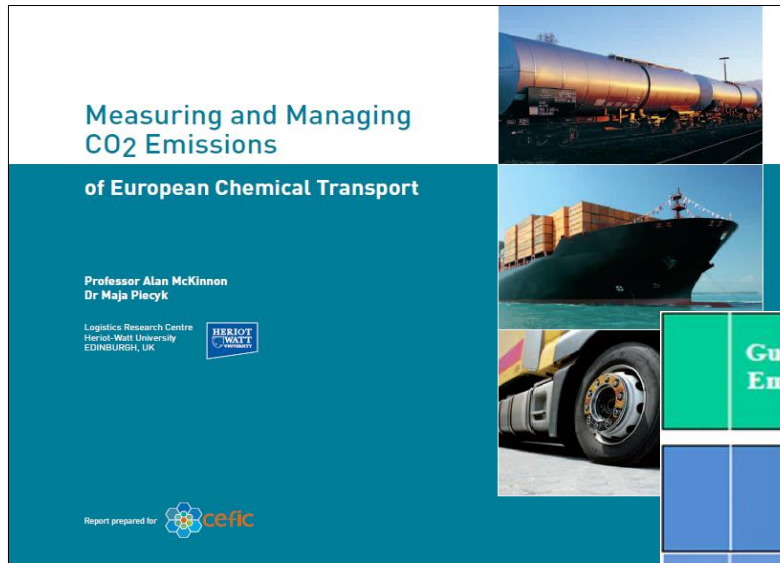
LEARN Logistics Emissions Accounting

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Cefic/ECTA Guidelines for measuring and managing Transport CO₂ emissions – March 2011



- General framework
- Calculation method
- Default emission factors
- Calculation template
- Opportunities to reduce emissions



Methods to calculate CO₂ emissions of freight transport operations



Activity-based approach (rough estimate)

CO₂ = tons transported x average transport distance
x default CO₂-emission factor

Default emission factors recommended by McKinnon

Transport mode	gCO ₂ /Ton - km
Road transport	62
Rail transport	22
Barge transport	31
Short sea	16
Deep-sea container	8
Deep-sea tanker	5
Intermodal road / rail	26
Intermodal road / barge	34
Intermodal road / short sea	21
Pipelines	5
Airfreight	602

6

Energy-based approach (most accurate)

CO₂ = fuel consumption x fuel CO₂-emission factor

7

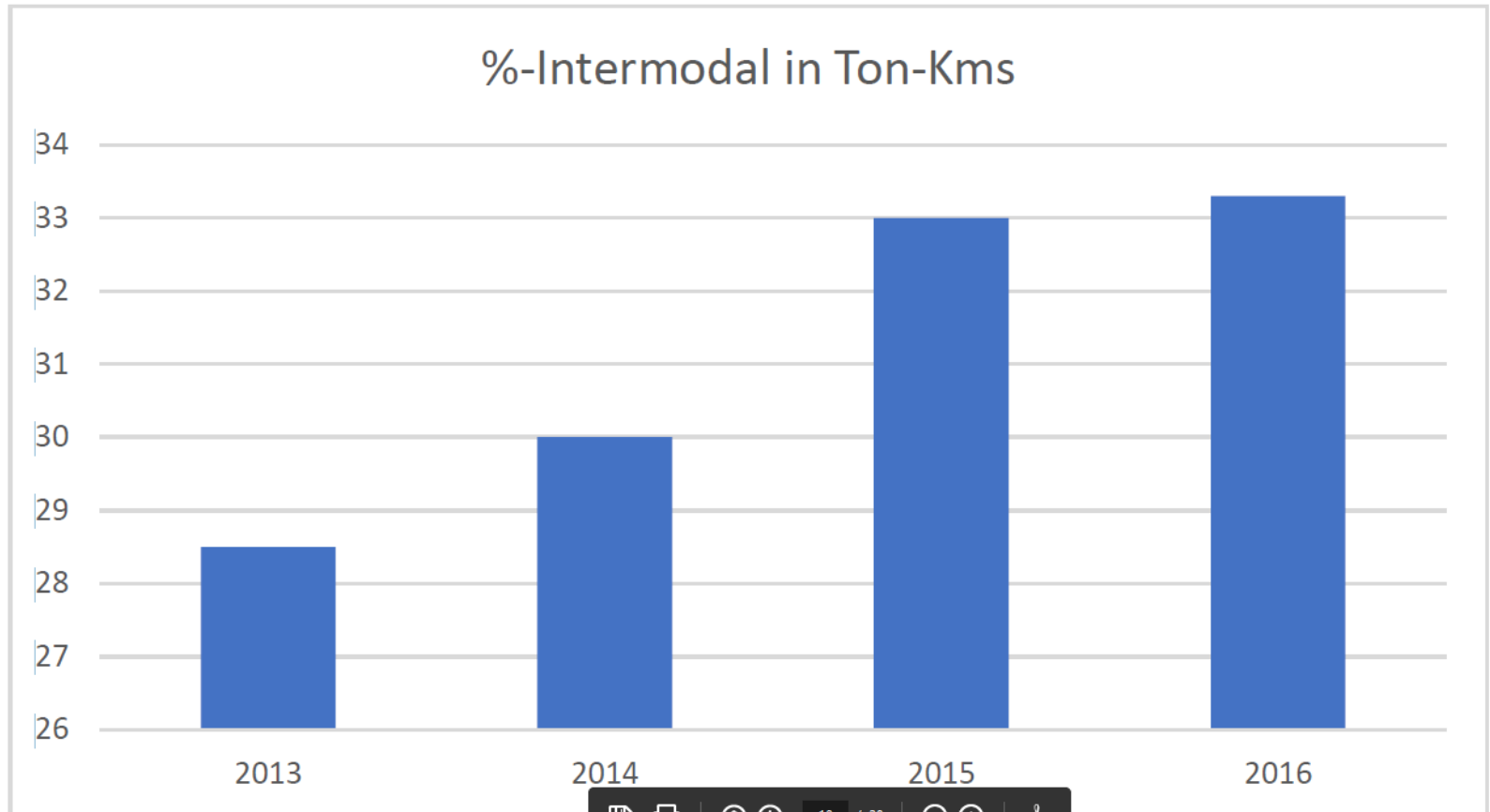


Transport CO2 emission calculations

Own road transport: energy-based approach

Sub-contracted road transport: activity-based approach

Intermodal transport: activity-based approach



Evolution of Carbon Measurement System



Shipper

Collaborative initiative

Carrier

Activity-based

Refined activity-based

Energy-based

tonnes

tonnes

sample distance and energy data

fuel used

distances

distance

fuel factor

average emission factor

Energy based emission factor

Total emissions

Total emissions

sector-specific

company-specific

product-specific